

ETHNIC ENCLAVES AND WELFARE CULTURES – QUASI-EXPERIMENTAL EVIDENCE*

Per-Anders Edin[‡], Peter Fredriksson[§], Olof Åslund[†]

September 2, 2003

(Preliminary. Comments welcome. Do not quote.)

Abstract

Recent immigrants tend to locate in ethnic enclaves within metropolitan areas. We examine whether this location pattern gives rise to welfare cultures, i.e., an environment where individual welfare use is influenced by welfare usage in the ethnic group as a whole. Most of the previous literature on the importance of networks is plagued by problems caused by selection and unobserved factors about neighborhoods and ethnicities. To avoid these problems, we use data from an immigrant policy initiative in Sweden, when government authorities distributed refugee immigrants across locales in a way that we argue is exogenous. We distinguish between the quantity of contacts – the number of individuals of the same ethnicity – and the quality of contacts – welfare use among members of the ethnic group. OLS regressions suggest that both the quality and quantity of contacts are positively related to individual welfare use. Instrumental variables estimation yields the conclusion that only the quality of contacts matter. The estimates are quite sizable. An increase of the fraction of the ethnic group on welfare by ten percent raises the individual probability of welfare use by three percentage points.

Keywords: Immigration, Enclaves, Welfare use, Welfare cultures

JEL classification: J15, J18, R23

* We thank Sven Hjelmkog, Stig Kattilakoski, Christina Lindblom, Anders Nilsson, Kristina Sterne, and Lena Axelsson of the Immigration Board, and Anna Gralberg of the Ministry of Culture, who generously found time to answer our questions. We also acknowledge the helpful comments from Susan Vroman, and seminar participants at the University of Helsinki, IFAU, and the CESifo workshop on “Employment and Social Protection”, May 2003.

[‡] Department of Economics, Uppsala University and IFAU.

[§] Department of Economics, Uppsala University and IFAU. Address for correspondence: Department of Economics, Uppsala University, P.O. Box 513, SE-751 20 Uppsala, Sweden. Fredriksson acknowledges the financial support from the Swedish Council for Working Life and Social Research (FAS)

[†] Institute for Labour Market Policy Evaluation (IFAU).

1. Introduction

In all industrialized countries there is concentration of the poor, particularly immigrants, in metropolitan areas. Universally, there is also great concern that this segregation may be detrimental for individual outcomes.

Sweden is no exception from this rule. High and rising welfare use among immigrants and other disadvantaged groups rose to the fore of policy agenda during the economic downturn of the 1990s.¹ Some observers argued that part of the increase in welfare participation can be attributed to the fact that the “stigma” of welfare use decreases along with the overall increase in the number of individuals on welfare; see Lindbeck (1997) for instance.

That there is feed-back from overall welfare use to individual welfare participation is an example of a social network effect. The effect of social networks on individual behavior has been a topic among sociologists for long. Economists have only recently become interested in this question, however. There are substantial difficulties in establishing that a particular empirical regularity reflects a causal mechanism running from the characteristics of the social network to individual behavior. For instance, it is a stylized fact that the participation of immigrants in various public support systems is greater in immigrant dense areas; however, it is clearly premature to infer that stylized fact is caused by living in these areas. Such inference suffers from what Manski (1993) calls the “reflection problem”. The essence of this problem is that omitted individual and neighborhood characteristics may imply that individual behavior simply reflects the behavior of the neighborhood as a whole. The reflection problem leads to a correlation between individual and group behavior which does not have a causal interpretation.

The purpose of this paper is to examine whether immigrant welfare use is causally affected by ethnic concentration (the size of the enclave) and welfare use among their ethnic peers (the welfare culture). To estimate these effects we utilize an immigrant policy initiative in Sweden. During the late 1980s and early 1990s Swedish immigration authorities distributed refugee immigrants across neighborhoods in a way that we argue is independent of individual unobserved characteristics. We have used this policy experiment in earlier work dealing with the earnings effect of living in ethnic enclaves;

¹ Throughout we use the US term “welfare” instead of using “social assistance”, which is the more correct, although more cumbersome, terminology.

see Edin et al (2003).

We also build on the recent work by Bertrand et al. (2000). They utilize the fact that ethnic concentration varies within neighborhood. This implies that one can eliminate the influence of unobserved neighborhood characteristics common across individuals. Still, the estimates of the main effect of ethnic concentration may be biased because of sorting on unobserved ability. Therefore, the authors focus on the interaction between the size of the enclave and the overall welfare participation rate in the ethnic group. They view overall welfare participation as a measure of the “quality” of the ethnic network. It is this quantity-quality interaction that identifies the effect of interest.

The strategy employed by Bertrand et al (2000) makes a lot of sense. Nevertheless, it may have some drawbacks. First, since it is not possible to obtain unbiased estimates of the coefficient on quality and the coefficient on contact availability (quantity) their estimates may be missing the most important part of the effects. Second, the quantity-quality interaction is a parsimonious way of allowing the coefficient on contact availability to vary across ethnicities. In the strict sense, it is not clear that the coefficient has the interpretation that the authors want to ascribe to it. Third, differential selection across ethnicities may bias the coefficient on the quantity-quality interaction. Differential selection is perhaps less of a problem since the authors find little evidence suggesting that it is an issue using an IV approach.²

The Swedish government policy that we use concerned the initial location of refugee immigrants. This policy was viable between 1985 and 1991. Government authorities placed refugees in localities that were deemed suitable according to certain criteria. In practice, the availability of housing was the all-important factor. Our maintained hypothesis is that, because of the policy, the initial location of immigrants is independent of unobserved individual characteristics. Hence, this “quasi-experiment” enables us to reexamine the question of the importance of ethnic networks in welfare participation. Because of the nature of the data we can credibly estimate the main effects of ethnic ties per se (quantity) and welfare use among the ethnic peers (quality). Throughout we hold the observed and unobserved (time-invariant) characteristics of neighborhoods and ethnicities constant.

² The IV approach is based on using ethnic concentration in the metropolitan area as an instrument for enclave size at the neighborhood (PUMA) level.

The government settlement policy had real consequences for immigrant location. This is illustrated in Figure 1, where we plot the share of the immigrant inflow and the immigrant stock that resides in Stockholm and the north of Sweden respectively. Prior to 1985, refugees were allowed to settle in a neighborhood of their own liking. In 1985, the immigrant shares in Stockholm and the north of Sweden stood at 36 and 5 percent respectively. By 1991, the share living in Stockholm had been reduced by more than 3 percentage points, while the share residing in the north increased by 2 points. Thus, the policy initiative clearly increased the dispersion of immigrants across Sweden.

(Figure 1 about here)

Our results can be summarized as follows. To gauge the importance of sorting bias we begin by running simple OLS regressions. Quantity as well as quality of the network is positively related to individual welfare participation; in addition, the coefficients are significantly different from one another. The IV approach, using characteristics of the initial location as instruments for the characteristics of the neighborhood 9-10 years later, reduces the coefficient on the size of the enclave to zero while the effect of the quality of the network more than doubles in size. The coefficient estimate implies that the individual probability of welfare participation rises by three percentage points in response to an increase of the welfare use in the ethnic group by ten percent. The result that the size of the enclave has no effect on individual welfare use is consistent with our findings in Edin et al (2003), where we find that there is a positive return to living in an enclave for low-skilled refugee immigrants and that there is no effect in the refugee population as a whole.

In general one would think that the role of the social network is to convey information about the functioning of system as well as instilling a social norm. Arguably, our estimates do not capture the fact that information welfare system may be more abundant in neighborhoods where welfare use is prevalent. Refugees arriving in Sweden after the introduction of the placement policy were granted an initial period of almost two years of welfare receipt. Therefore, the information about the system became immediately available to these immigrants and our estimates do not capture the information aspect of the network.

We also examine whether the network effect varies by household characteristics. In

the statistical sense we do not find evidence of a differential effect. Moreover, the point estimates are fairly similar. For instance, the effect coming from the quality of the network is somewhat larger for singles with kids in comparison to the overall population. For singles with kids, the individual probability of welfare participation rises by four percentage points in response to an increase of the welfare use in the ethnic group by ten percent.

The remainder of the paper is outlined as follows. By way of background, section 2 gives a description of the institutional setting and discusses whether we can treat the policy shift in 1985 as a quasi-experiment. Section 3 describes the data. In section 4, we report estimates of the effects of networks on welfare use. In this section we also decompose the overall effect into the effect on eligibility and take-up. Section 5 concludes.

2. Background

Relative to the size of the country Sweden has a substantial immigrant population. The share of the foreign born in the total population stood at 11 percent in 1997. As in all developed countries, there is concentration in the residential pattern of immigrants – the probability of residing in an “ethnic neighborhood” is high.³ Further, immigrants from developing countries are more likely to live in an ethnic neighborhood. Over the past thirty years the majority of immigrants have been refugees.

The second half of the 1980s and first half of the 1990s saw a massive increase in immigration. Concomitantly there was a rapid increase in the immigrant share of the social assistance caseload. During the 1990s the immigrant share of the caseload has hovered around a third. This contrasts markedly with the situation around 1970 when immigrants were as likely as the native born to receive welfare (Lundh et al, 2002). In 2000, the incidence of welfare stood at 4 percent in the native born population, 6 percent in the non-refugee immigrant population, and 32 percent in the refugee immigrant population. Thus, high welfare use among immigrants is largely tied to the prevalence of welfare receipt in the refugee immigrant population. Different motives for immigration

³ If we define an ethnic neighborhood as a neighborhood where the share of the ethnic group residing in the neighborhood is at least twice as large as the share of the ethnic group in the population we find that 42 percent of the average first generation immigrant lives in an ethnic neighborhood in 1997.

and a shift in the integration policy presumably contribute to this fact.

Refugee immigrants are the group of interest in our analysis, and we now present the Swedish refugee policy in more detail. Unfortunately, there is very little documentation about the practical implementation of the placement policy. Therefore, part of the information is based on interviews with placement officers and other officials of the Immigration Board.

2.1. The Swedish refugee placement policy⁴

The placement policy was introduced in 1985. The Immigration Board was then given the responsibility of assigning refugee immigrants to an initial municipality of residence. The Board was to place all political immigrants, except those who arrived for family reunification reasons.

The introduction of the placement policy was a reaction to immigrant concentration in large cities. The idea was to distribute asylum seekers over a larger number of municipalities that had suitable characteristics for reception, such as educational and labor market opportunities. At first, the intention was to sign contracts with about 60 municipalities, but due to the increasing number of asylum seekers in the late 1980s, a larger number became involved; in 1989, 277 out of Sweden's 284 municipalities participated. The criteria that initially were supposed to govern placement were abandoned. Instead, the availability of housing became the deciding factor.

Formally, the policy of assigning refugees to municipalities was in place from 1985 to 1994. The strictest application of the assignment policy was between 1987 and 1991. For our purposes, this is the most attractive time period, since there were few degrees of freedom for the individual immigrant to choose the initial place of residence. During 1987–91, the placement rate, i.e., the fraction of refugee immigrants assigned an initial municipality of residence by the Immigration Board, was close to 90 percent.

In an earlier paper (see Edin et al., 2003) we argue that the settlement policy provides an exogenous source of variation that identifies the causal effect of neighborhood characteristics. The essence of the argument is that placement rate was high (in particular during 1987–91), the housing market was booming (making it

⁴ This section draws on The Committee on Immigration Policy (1996) and The Immigration Board (1997).

difficult to find vacant housing in attractive areas), and there was no interaction between local officers and the refugee in question. Therefore, it is realistic to treat the neighborhood assignment as exogenous with respect to the random components of the outcomes of interest, conditional on observed characteristics.⁵

We base our empirical work on immigrants receiving their residence permit in 1990 and 1991. The reason for choosing these two years is that we have access to population micro data during 1990—2000. Thus, the immigrants will have been in Sweden for 9—10 years at the last point when we can observe outcomes.

2.3. Network effects and the placement policy

There is much work – especially in sociology (e.g. Portes, 1987) – that emphasizes network effects. According to this work, there is an upside and a downside to living in an enclave. On the one hand, the enclave may represent a network that increases the opportunities for gainful trade in the labor market and disseminates valuable information on, e.g., job opportunities. On the other hand, the enclave may fail to provide positive role models (Wilson, 1987) and may provide information on welfare eligibility (Bertrand et al., 2000).

An ingredient of the placement policy was that all refugee immigrants were placed on welfare by default. This fact implies that our estimates will not capture the information aspect of the network. Thus, we can only view our estimates as a test of whether the attitudes, behavior, and characteristics of the ethnic peers influence individual welfare use. This feature can be viewed as a drawback as well as an advantage: the drawback is that we potentially miss an important component of the network; the virtue is that we have a clearer idea about the causal mechanism generating the estimates.

3. Data and identification strategy

In this section we describe the data and the sample selections (section 3.1). Then we briefly discuss our identification strategy (section 3.2).

⁵ We provide more details substantiating this argument in Edin et al (2003).

3.1. Data and sample selection

The empirical analysis is based on population micro data collected by the Institute for Labour Market Policy Evaluation (IFAU) – the IFAU data base. The data base consists of a collection of register information such as information from the income tax registers and population registers. The data are available from 1990 until 2000. The great advantage of using these data is that we can calculate measures of the characteristics of the population from each source country. These measures are free of the small sample error that will plague all estimates deduced from samples of the population. A potential drawback is that small source countries are aggregated with other source countries for confidentiality reasons. In the appendix we present the origin countries, or the country aggregates, of the individuals included in the analysis. For the most part we think that these aggregations of countries are rather innocuous.⁶

All individual variables in our analysis are based on register information. Welfare receipt and some of the other characteristics (gender, age, education, family composition) are obtained from the income tax registers, which also contain information on country of birth and year of immigration from the population registers. Throughout we use ethnicity as a short hand for country of origin, or country aggregate, although it is the latter information that the data contain.

Neighborhood characteristics are measured at the parish level.⁷ In 2001, there were 2,223 parishes and the median parish had 1,265 inhabitants. Descriptive statistics, along with the definition of some of the key variables, are reported in the Appendix.

We cannot identify refugee immigrants directly from our data. Instead we identify them by country of origin. As a general rule we include immigrants from countries outside Western Europe that were not members of the OECD as of 1985. The only exception from this rule is Turkey, which is included since it was the origin of a substantial inflow of refugee immigrants during the period.

We exclude persons belonging to a household with an adult already residing in

⁶ Some aggregations are clearly unfortunate, such as aggregating Israel with the rest of the Middle East. But note that individuals born in Israel represent a very small share of the sample (0.5 % according to the estimates in Table A.3) so they will have little influence on the estimates. Notice also that we have examined whether these aggregations pose a problem for us by estimating regressions including only countries that we can identify uniquely. The results reported in section 4 only change marginally.

⁷ Refugee immigrants were assigned to an apartment so, in principle, there is scope for defining even smaller “neighborhoods”. However, the parish is the smallest geographical unit that we can identify in the data.

Sweden, since they were likely to have immigrated as family members and, consequently, were not placed. We base our analysis on individuals aged 18–55 at the time of entry into Sweden. Lastly, we focus on the immigration waves during 1990–91 for reasons outlined above.

Imposing all of these restrictions we are left with a sample of 22,534 individuals. There are 889 parishes of assignment. Most immigrants are of Arabian (e.g. Iran and Iraq) or North African origin (e.g. Ethiopia and Somalia); see Table A3 for more details.

Another feature of the data that may be relevant for our analysis is that we observe the region of residence at the end of the year. Thus, the observed initial location may differ from the actual initial placement if individuals move during their first year. This introduces a measurement error in initial placement. To test whether this is an issue we have estimated equations where we reweigh the data such that the distribution of the initial locations of the individuals in our sample corresponds to the distribution of received refugees over municipalities.⁸ The weighted estimates were only marginally different from the unweighted ones and therefore we only present the latter in the empirical analysis.

3.2. Issues related to the identification strategy

Our identification strategy relies on presumption that the characteristics of the initial placement are independent of unobserved individual characteristics given the observed ones. In Edin et al (2003) we found that the probability of being assigned to an enclave did not vary by observed individual characteristics in a way that caused concern. This fact and the information we have about the implementation of the placement policy suggest that our identifying assumption is tenable.

Given that the characteristics of the initial placement are credibly exogenous, we can use them as instruments for the characteristics of the neighborhood 9-10 years later. This implies that the predictive power of the instruments derives mainly from individuals who stayed on in the assigned residences and it is this group of individuals that we primarily identify the effects for.

What are the characteristics of those who stayed relative to those who moved? How

⁸ The weighting procedure is based on the number of refugees covered by grants from the Immigration Board.

many moved on to another neighborhood? In Table A2 we present descriptive statistics by mobility status. We first note that 74 percent of the sample has moved to another parish within nine to ten years after entering Sweden. Despite the high rate of mobility out of the assigned parish our instruments—i.e. the characteristics of the assignment—have substantial predictive power in the first stage regressions; we return to this issue when presenting the estimates. The rate of mobility may seem high; however, it is a generic feature of the Swedish immigration experience that there is substantial mobility out of the initial location; see Åslund (2000).

The differences in individual characteristics are broadly in line with what one would expect in any analysis of mobility. Movers are more likely to be young and single, and have more education than stayers. There are some differences across source regions. Refugee immigrants from the African Horn and Iran tend to move to a greater extent than immigrants from other regions.

In terms of the local characteristics 9-10 years after immigration, movers tend to live in neighborhoods where there is a greater number of fellow countrymen and a greater prevalence of welfare receipt among these countrymen.

4. The effects of ethnic enclaves and welfare cultures

In this section we first examine whether individual welfare dependence is causally affected by ethnic concentration and welfare use in the ethnic group. We view ethnic concentration as a measure of contact availability and welfare use in the ethnic group as a measure of the welfare culture, or the “quality” of contacts. We then move on to present estimates for household with different characteristics. Next we examine whether welfare take-up rates are affected by the size and characteristics of the enclave. The final section looks at the variation in the effects over time in Sweden.

4.1. Welfare use

As outlined earlier, the basic strategy to free the estimates of simultaneity bias between welfare use and the size and characteristics of the local population is to use the placement policy to obtain instruments for local variables. In effect, we use variables pertaining to the initial (assigned) neighborhood as instruments for neighborhood characteristics nine to ten years later. Our maintained assumption is that the

placement policy is independent of unobserved individual characteristics. Moreover, we assume that (initial) location does not have permanent effects on outcomes.

Our basic specification of the outcome equation is the following

$$W_{ipct} = \mathbf{X}_{it}\beta + \alpha \ln W_{pct} + \delta_{p_0} + \delta_c + \delta_{t_0} + \varepsilon_{ipct} \quad (1)$$

where i indexes individuals, p parishes, c countries of origin, and t time. p_0 denotes the initial parish of assignment and t_0 is the year of immigration. The dependent variable equals unity if the individual is a member of a welfare receiving household in $t = 2000$ and zero otherwise; households are classified as being on welfare as long as they have received a positive amount during the year.⁹ We standardize for a set of individual characteristics \mathbf{X} , containing gender, age, age squared, marital status, education, and dummies for the number of kids in the household. In order to control for omitted variables, the regression includes a full set of country of origin fixed effects (δ_c), immigration year fixed effects (δ_{t_0}), and fixed effects for the assigned parish (δ_{p_0}). We only control for the assigned neighborhood, as the coefficients on the resident neighborhood in period t may be endogenous because of sorting and instrumenting the full set of parish effects is simply too taxing on the data.

Welfare use for individual i of ethnic group c is also related to the number of (other) welfare recipients among immigrants from the particular ethnic group in parish p (W_{pct}).¹⁰ Notice that the coefficient on the number of welfare recipients in the ethnic group is identified since it varies across ethnic groups within parishes. The number of welfare recipients in the ethnic group reflects both the quality and quantity of contacts in the neighborhood. We also decompose this measure and attach separate coefficients on the component parts, i.e., $\alpha \ln W_{pct} = \alpha_W \ln(W/E)_{pct} + \alpha_E \ln E_{pct}$. Using this decomposition we can in principle test whether quantity (E_{pct}) or quality (W/E)_{pct} is most important for individual behavior.

⁹ Notice that we estimate a linear probability model rather than a logit or a probit. The reasons for doing this are twofold. First, logits and probits become computationally infeasible in the presence of a large number of fixed effects. Second, we want to apply instrumental variables, which is more cumbersome in a non-linear model.

¹⁰ In calculating the characteristics of the ethnic group in a particular neighborhood, we exclude the inflow, i.e., the individuals in our analysis sample. If the individuals in our analysis sample and the population for which we calculate neighborhood characteristics would be identical, then the mechanics of the linear probability model drives the coefficient on the neighborhood characteristic towards unity. Given that we exclude the inflow there is nothing mechanical about the estimates.

We begin by equation (1) for the full sample. The first stage equations in the IV (2SLS) procedure, amount to regressing, e.g., $\ln W_{cpt}$ on $\ln W_{cp_0t_0}$ and the remaining explanatory variables in (1). Thus, in this instance, we regress the number of welfare recipients from ethnicity c in the individuals current place of residence (p) on the number of welfare recipients from ethnicity c in the assigned neighborhood (p_0) at the time of immigration (t_0). This first stage regression has strong predictive power: the number of welfare recipients in the ethnic group in the assigned parish enters the equation with a coefficient of 0.27 and a t -ratio of 23.41. All first stage regressions that we have run suggest that the instruments have substantial predictive power.

Table 1 reports the results for the full sample where the outcome of interest is the probability of welfare receipt. Columns (1) and (3) report OLS estimates where we treat the characteristics of the neighborhood as exogenous. Column (2) and (4) report the results of the IV procedure outlined above.

(Table 1 about here)

According to the OLS estimates in column (1) there is a positive association between the number of welfare recipients in the neighborhood and individual welfare use. A doubling of the number of recipients from the individual's ethnic group raises welfare dependence by four percentage points (see column 1). According to the corresponding IV estimate the bias in the coefficient is, perhaps surprisingly, small. The decompositions in columns (3) and (4) suggest otherwise, however; the IV estimates are clearly significantly different from the OLS estimates. Nevertheless, the qualitative conclusion is similar in one respect: Both sets of estimates imply that the quality of contacts is more important than contact availability. Moreover, there is a downward bias in the OLS estimate on the quality of contacts and an upward bias in the coefficient on contact availability. In fact, there is literally no effect of contact availability in economic as well as statistical terms. The fact that there is a positive sorting bias in the OLS estimate on ethnic concentration is consistent with our findings in Edin et al. (2003): according to the IV-estimates there was no effect on earnings when all skill groups were pooled together and a positive effect for the low-skilled; the corresponding OLS estimates were all negative.

The sorting pattern implied by the comparison of the OLS and IV coefficients on

$(W/E)_{pct}$ may seem surprising given our earlier discussion about the consequences of the reflection problem. We argued earlier that the reflection problem causes an upward bias in the simple OLS estimate. Now, equation (1) is more sophisticated than commonly encountered specifications where simultaneity concerns apply directly in the sense that it includes neighborhood and country of origin fixed effects. Excluding these fixed effects, the OLS estimate on the fraction of welfare recipients from the own ethnic group is almost double the size of the IV estimate in column (4).¹¹

Welfare eligibility is determined by household economic status and welfare generosity is a function of household characteristics. This is the motivation for conducting separate analyses for different types of households. Table 2 presents the results. Panel a) reports estimates for singles and cohabitants; panel b) reports the results for singles and panel c) for cohabitants. The columns divide the sample on the basis of whether there are kids present in the household or not. Each panel/column cell represents the results from a separate regression for the particular household group. In each panel we also report the mean of the dependent variable. Welfare use is prevalent in all kinds of households; for instance, 30 percent of singles without kids received welfare payments during 2000. This number is much higher for singles with kids (54 percent), but, unlike the US, welfare use is clearly not restricted to single mothers only.

The main message provided by Table 2 is that the characteristics of the enclave have fairly similar effects across different types of households. Singles with at least one kid are most susceptible to variations in ethnic welfare use. An increase in the fraction of welfare recipients in the ethnic group by ten percent causes individual welfare receipt to increase by around four percentage points. However, the estimate for this group is clearly not significantly different from the estimate for the full sample. Across all kinds of households it seems that the quality of contacts is what matters for welfare use. There is only one exception from this rule and it is for cohabitants without kids.

(Table 2 about here)

¹¹ Nevertheless, it is still relevant to ask if there is a sorting story that motivates the increase in the IV estimate relative to the OLS estimate in Table 1. We have a difficult time coming up with such a story, partly given our earlier research. The only plausible story that we have to offer at present is based on measurement errors. The measurement error arises if the social norm is better captured by the fraction of ethnic peers on long-term welfare use. Then the OLS coefficient is attenuated by measurement error and the IV strategy corrects for attenuation.

4.2. Welfare eligibility and welfare take-up

As mentioned earlier, our previous work suggests that ethnic concentration increases the earnings prospects of the least skilled; see Edin et al. (2003). Thus, this effect will tend to reduce the welfare use among a group that is arguably one of the most welfare prone. In this section we ask whether welfare take-up rates are affected by the size and characteristics of the enclave. This is a question about welfare use given income.

There are two ways of approaching this issue. One simple way is to restrict the population to those eligible for welfare and estimate equations similar to the ones we have estimated before. Another way is to use the fact that if eligibility was perfectly observed we have $\Pr(W = 1|Y \leq B) = \Pr(W = 1)/\Pr(Y \leq B)$, where B is the income cut-off determining eligibility. With estimates of the effect of enclave characteristics on welfare use and welfare eligibility we can “back-out” the effect on the take-up rate. There are problems associated with both approaches. The first approach suffers from a sample selection problem: if the effect of enclave characteristics varies in the population we may estimate a different parameter just because we are considering a subset of the entire population. Using the second strategy we estimate a parameter that is free of sample selection problems but the approach requires good information on eligibility.

There is no information on eligibility in the data.¹² Therefore, we must estimate eligibility from observations on annual household income. This process causes measurement error since welfare eligibility is determined by household income during a particular month rather than the full year as well as other factors such as housing expenditure. With the present coding of eligibility the problem is rather severe: 21 percent of the non-eligible has received welfare sometime during the year.¹³

Faced with problems of constructing the measure of eligibility we have chosen to base our analysis on the first approach, i.e., we estimate welfare use equations for the population that we classify as eligible. We also present the results from estimating benefit eligibility equations, however. The reasons for doing this are two-fold. First, we think that these estimates are interesting in their own right. Second, with estimates of

¹² Notice, also, that even if we had this information it is not clear how one should interpret it. Casual observation suggests that municipalities that are generous in terms of B are tougher in other respects, for instance, by conditioning welfare on active job search.

¹³ The most obvious “fix” for this problem is probably to impose a minimum on the amount received in order to be classified as a welfare recipient. We will investigate the consequences of defining welfare use in this way in future versions of the paper.

enclave characteristics on eligibility we get an idea about the relative magnitude of the effect on welfare use and welfare take-up.

Table 3, which has the same structure as Table 2, reports benefit eligibility estimates. In the first two columns in panel a) we see a similar pattern as in the equations for welfare receipt. In the IV-regressions, it is the fraction of welfare recipients in the ethnic group that matters for benefit eligibility. Welfare eligibility increases by 1.8 percentage point in response to an increase in the share of welfare recipients by 10 percent. Ethnic concentration has no effect on eligibility. The bias of OLS exhibits an identical pattern as the previous case. The estimates in Table 3 are also similar to the earlier ones in the sense that the estimates across household types are pretty similar.

(Table 3 about here)

Table 4 presents the results of regressions where welfare receipt conditional on eligibility is the dependent variable. Again, it seems that it is the fraction of welfare recipients from the own ethnic group that matters mostly. Also, the effects on the take-up rate appear to be greater than the effect on welfare use. **(N.B the estimates on take-up will be revised in the near future!)**

(Table 4 about here)

4.4. Do the effects vary with time in the enclave?

Here we want to shed some light on the issue of whether the effect of ethnic concentration on welfare use varies with time in the enclave. As written, equation (1) purports to estimate the contemporaneous relationship between the characteristics of the enclave and welfare use. However, this need not be right. One might well think that the history of ethnic concentration matters for current outcomes; the Borjas (1995) analysis of whether the “ethnic capital” of the parent generation feeds on to the offspring is an example where history matters. So should we think of the relationships as being contemporaneous or does history matter as well?

Let us start by emphasizing that the main source of identification in our setting comes from individuals who stayed on in the assigned neighborhood. Thus, those who we primarily identify the effect for will have lived in the local area for 9-10 years. So, in

practice, the IV estimates will be more or less the same, independently of whether we think of the effect as contemporaneous or the effect of the initial assignment cumulated over 9-10 years.^{14,15}

To shed some light on whether the effects vary with time in the ethnic neighborhood, we estimate separate equations for each time point. Figure 2 shows evolution of the IV estimates over time. That is the figure shows, e.g., the estimate on $\ln(W/E)_{cpt}$, $t = 1990, \dots, 2000$, instrumented with $\ln(W/E)_{cp_0t_0}$.

The effects evolve slightly differently over time. The effect of welfare use in the ethnic group becomes more important initially but then hovers around 0.3 from 1992 and onwards. The effect of enclave size appears to be largely constant until 1998. During the last two years the effect tapers off and it is reduced to economic and statistical insignificance in 2000. It seems plausible that the long-run decline of the effect coming from the size of the enclave is related to our findings in Edin et al. (2003), where we find that the effect on earnings of initial enclave size is positive at longer time horizons. **(N.B the estimates for Figure 2 will be revised in the near future!)**

(Figure 2 about here)

5. Concluding remarks

The main purpose of this paper has been to examine whether the size and characteristics of the enclave has a causal effect on welfare use, eligibility, and take-up rates. To this end, we have made use of an immigrant policy initiative in Sweden, when government authorities distributed refugee immigrants across locales in a way that we argue is exogenous. This policy initiative provides a quasi-experiment, which allows us to handle the endogeneity problem due to the individuals' residential choice. Throughout we have distinguished between the quantity of contacts (the size of the enclave) and quality of contacts (the welfare culture).

The empirical analysis suggests two main conclusions. First, we find that the quality

¹⁴ If the exclusion restriction is right, the IV-estimate may be thought of as the treatment effect of increasing the size of the enclave cumulated over 9-10 years. Relative to the reduced form, the IV-estimate corrects for the fact that not all individuals complied with the assigned treatment dose.

¹⁵ However, if the history of the characteristics of the enclave matters we may have misspecified the equation for the part of the sample that moves since it should potentially include the characteristics of previous neighborhood. If we think that the estimates capture a social network effect, the issue of misspecification depends on whether the benefits of the network are kept after moving to a new region (provided that there is no state dependence).

of contacts has a sizable and positive effect on individual welfare use; there is no effect coming from the size of the enclave. Individual welfare use increases by 3 percentage points in response to an increase in the fraction of welfare dependents in the ethnic group by 10 percent. Second, when we decompose the overall effect into the effect on eligibility and the effect on take-up the quality of the network is again what matters. Both of these outcomes are positively related to ethnic welfare use in the neighborhood.

In sum, the characteristics of the social network seem to have important effects on individual behavior. In our setting, the quality of the enclave – the welfare culture – proves to be more influential than the number of contacts.

The policy experiment that we are using to generate these estimates had a particular feature: all refugee immigrants were introduced to welfare upon arrival. Therefore, it is likely that the enclave loses its role as an information provider on, e.g., the rules of the welfare system. This observation suggests that our estimates may represent lower bounds on the effects of the characteristics of the enclave on individual behavior: if there would be an information aspect to the network, the estimates would potentially be larger in size. Having said this, we note that recent research have found little support for the information aspect. Aizer and Currie (2002) find that the presence of network effects cannot be explained by information sharing within members of the network.

References

- Aizer, A. and J. Currie (2002), "Networks or Neighborhoods? Correlations in the Use of Publicly-Funded Maternity Care in California," NBER Working Paper No. 9209.
- Bertrand, M., E. Luttmer, and S. Mullainathan (2000), "Network Effects and Welfare Cultures", Quarterly Journal of Economics CXV, 1019–1055.
- Borjas, G. (1995), "Ethnicity, Neighborhoods, and Human-Capital Externalities", American Economic Review LXXXV, 365–390.
- Borjas, G. (1998), "To Ghetto or Not to Ghetto: Ethnicity and Residential Segregation" Journal of Urban Economics XLIV (1998), 228–253.
- Borjas, G. (1999), Heaven's Door – Immigration Policy and the American Economy, (Princeton, NJ: Princeton University Press).
- Cutler, D. and E. Glaeser (1997), "Are Ghettos Good or Bad?" Quarterly Journal of Economics CXII, 827–872.
- Dustmann C. and I. Preston (1998), "Attitudes to Ethnic Minorities, Ethnic Context and Location Decision", CEPR Discussion Paper No. 1942.
- Edin, P-A. and P. Fredriksson (2000), "LINDA – Longitudinal INDividual DAta for Sweden", Working Paper 2000:19, Department of Economics, Uppsala University.
- Edin, P-A., P. Fredriksson, and O. Åslund (2003), "Ethnic Enclaves and the Economic Success of Immigrants – Evidence from a Natural Experiment", Quarterly Journal of Economics CXVIII, 329-357.
- Katz, L., J. Kling, and J. Liebman (2001), "Moving to Opportunity in Boston: Early Results of a Randomized Mobility Experiment", Quarterly Journal of Economics CXVI, 607-654.
- Lindbeck, A. (1997), "Incentives and Social Norms in Household Behavior", American Economic Review 87, 370-377.
- Lundh C., L. Bennich-Björkman, R. Ohlsson, P.J. Pedersen, and D-O. Rooth (2002), Arbete? Var god dröj! Välfärdspolitiska rådets rapport 2002 (Stockholm: SNS Förlag).
- Manski, C.F. (1993), "Identification of Endogenous Social Effects: The Reflection Problem", Review of Economic Studies LX, 531-542.
- Moffitt, R.A. (2000), Policy Interventions, Low-level Equilibria and Social Interactions, Manuscript, Johns Hopkins University.
- Portes, A. (1987), "The Social Origins of the Cuban Enclave Economy of Miami", Sociological Perspectives XXX, 340–372.
- Rooth, D-O. (1999), "Refugee Immigrants in Sweden – Educational Investments and Labour Market Integration", PhD thesis, Lund Economic Studies No. 84, Department of Economics, University of Lund.
- The Immigration Board (1997), Individuell mångfald: Invandrarverkets utvärdering och analys av det samordnade flyktningmottagandet 1991–1996, (Norrköping: Statens invandrarverk).
- The Committee on Immigration Policy (1996), Sverige, framtiden och mångfalden. Slutbetänkande från Invandrapolitiska kommittén, SOU 1996:55, (Stockholm: Fritzes).
- Wilson, W.J. (1987), The Truly Disadvantaged: The Inner City, the Underclass, and Public Policy (Chicago: The University of Chicago Press).
- Åslund, O. (2000), "Immigrant Settlement Policies and Subsequent Migration," Working Paper 2000:23, Department of Economics, Uppsala University.

Appendix

Table A1 reports the definitions and primary sources of data for variables used in the empirical analysis. Information on gender, age, and marital status come from the Income tax registers. The definition of these variables should be obvious and are not included.

(Table A1 about here)

Table A2 presents means and standard deviations of the variables relevant for the empirical analysis.

(Table A2 about here)

Table A3 provides a list of the “countries” of origin, at the levels of aggregation that we can observe them, of the individuals included in the analysis.

(Table A3 about here)

Tables and figures

Table 1. Estimates for the full sample. Dependent variable: welfare use

	(1)	(2)	(3)	(4)
	OLS	IV	OLS	IV
ln(# welfare recipients from same ethnic group)	.039	.024		
	(.003)	(.018)		
ln(fraction of welfare recipients in ethnic group)			.115	.310
			(.006)	(.062)
ln(# individuals from same ethnic group)			.027	-.007
			(.003)	(.019)
# individuals	22,556	22,556	22,556	22,556
Standard error of regression	.42	.42	.42	.43

Notes: Standard errors in parentheses. All regressions control for (a quadratic in) age, marital status, cohabitant status, dummies for #kids in the household, educational attainment, country of birth fixed effect, neighborhood fixed effects, and immigration year fixed effects. IV estimation is by 2SLS using the characteristics of the assigned neighborhoods as instruments for the characteristics in 2000. Robust variance estimates, allowing for correlation across individuals residing in the same parish.

Table 2: Estimates for household sub-groups. Dependent variable: welfare use

	Full sample		No kids		At least one kid	
	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Panel a) Singles and cohabitants						
ln(fraction of welfare recipients in ethnic group)	.115 (.006)	.310 (.062)	.069 (.010)	.354 (.113)	.143 (.009)	.325 (.078)
ln(# individuals from same ethnic group)	.027 (.003)	-.007 (.019)	.016 (.004)	.039 (.032)	.032 (.004)	-.034 (.024)
# individuals	22,556	22,556	8,290	8,290	14,266	14,266
Standard error of regression	.42	.43	.41	.43	.41	.43
Mean of dependent variable	.390	.390	.301	.301	.442	.442
Panel b) Singles						
ln(fraction of welfare recipients in ethnic group)	.080 (.009)	.365 (.104)	.055 (.012)	.355 (.133)	.166 (.021)	.419 (.173)
ln(# individuals from same ethnic group)	.013 (.004)	.005 (.033)	.010 (.004)	-.003 (.037)	.020 (.009)	-.016 (.051)
# individuals	9,565	9,565	6,750	6,750	2,815	2,815
Standard error of regression	.42	.44	.41	.43	.40	.41
Mean of dependent variable	.368	.368	.298	.298	.536	.536
Panel c) Cohabitants						
ln(fraction of welfare recipients in ethnic group)	.135 (.009)	.323 (.080)	.130 (.023)	.195 (.229)	.137 (.010)	.349 (.091)
ln(# individuals from same ethnic group)	.035 (.004)	-.027 (.025)	.045 (.009)	.135 (.056)	.034 (.004)	-.055 (.028)
# individuals	12,991	12,991	1,540	1,540	11,451	11,451
Standard error of regression	.40	.42	.32	.33	.40	.42
Mean of dependent variable	.407	.407	.316	.316	.419	.419

Notes: Standard errors in parentheses. All regressions control for (a quadratic in) age, marital status, cohabitant status (where applicable), dummies for #kids in the household (where applicable), educational attainment, country of birth fixed effect, neighborhood fixed effects, and immigration year fixed effects. IV estimation is by 2SLS using the characteristics of the assigned neighborhoods as instruments for the characteristics in 2000. Robust variance estimates, allowing for correlation across individuals residing in the same parish.

Table 3: Estimates for household sub-groups. Dependent variable: welfare eligibility

	Full sample		No kids		At least one kid	
	(1) OLS	(2) IV	(3) OLS	(4) IV	(5) OLS	(6) IV
Panel a) Singles and cohabitants						
ln(fraction of welfare recipients in ethnic group)	.065 (.007)	.179 (.063)	.029 (.010)	.198 (.125)	.087 (.009)	.176 (.071)
ln(# individuals from same ethnic group)	.021 (.003)	-.007 (.019)	-.003 (.004)	-.015 (.033)	.035 (.003)	-.000 (.024)
# individuals	22,556	22,556	8,290	8,290	14,266	14,266
Standard error of regression	.43	.44	.44	.44	.42	.42
Mean of dependent variable	.386	.386	.391	.391	.384	.384
Panel b) Singles						
ln(fraction of welfare recipients in ethnic group)	.034 (.010)	.261 (.107)	.013 (.011)	.187 (.145)	.111 (.020)	.273 (.150)
ln(# individuals from same ethnic group)	.005 (.004)	.004 (.031)	-.008 (.005)	-.044 (.039)	.041 (.008)	.093 (.047)
# individuals	9,565	9,565	6,750	6,750	2,815	2,815
Standard error of regression	.44	.46	.44	.45	.40	.41
Mean of dependent variable	.400	.400	.404	.404	.392	.392
Panel c) Cohabitants						
ln(fraction of welfare recipients in ethnic group)	.083 (.009)	.172 (.078)	.072 (.024)	.145 (.246)	.081 (.010)	.193 (.082)
ln(# individuals from same ethnic group)	.032 (.004)	-.020 (.026)	.029 (.011)	.056 (.056)	.032 (.004)	-.031 (.029)
# individuals	12,991	12,991	1,540	1,540	11,451	11,451
Standard error of regression	.41	.41	.34	.34	.40	.42
Mean of dependent variable	.376	.376	.333	.333	.382	.382

Notes: Standard errors in parentheses. All regressions control for (a quadratic in) age, marital status, cohabitant status (where applicable), dummies for #kids in the household (where applicable), educational attainment, country of birth fixed effect, neighborhood fixed effects, and immigration year fixed effects. IV estimation is by 2SLS using the characteristics of the assigned neighborhoods as instruments for the characteristics in 2000. Robust variance estimates, allowing for correlation across individuals residing in the same parish.

Table 4: The effects of enclave characteristics on welfare take-up rates

Regression estimates. Dependent variable: welfare use conditional on eligibility						
	Full sample		No kids		At least one kid	
	(1)	(2)	(3)	(4)	(5)	(6)
	OLS	IV	OLS	IV	OLS	IV
Panel a) Singles and cohabitants						
ln(fraction of welfare recipients in ethnic group)	.145	.361	.084	.421	.170	.290
	(.014)	(.111)	(.019)	(.159)	(.021)	(.200)
ln(# individuals from same ethnic group)	.025	-.013	.026	.118	.020	-.143
	(.005)	(.037)	(.007)	(.057)	(.007)	(.057)
# individuals	8,713	8,713	3,239	3,239	5,474	5,474
Standard error of regression	.39	.40	.40	.44	.35	.40
Mean of dependent variable	.676	.676	.521	.521	.768	.768
Panel b) Singles						
ln(fraction of welfare recipients in ethnic group)	.086	.351	.064	.244	.135	.896
	(.017)	(.145)	(.021)	(.154)	(.040)	(.608)
ln(# individuals from same ethnic group)	.023	.042	.023	.104	.025	-.019
	(.006)	(.047)	(.008)	(.056)	(.014)	(.080)
# individuals	3,829	3,829	2,726	2,726	1,103	1,103
Standard error of regression	.39	.41	.40	.42	.29	.37
Mean of dependent variable	.576	.576	.484	.484	.803	.803
Panel c) Cohabitants						
ln(fraction of welfare recipients in ethnic group)	.188	.249	.243	1.050	.173	.088
	(.024)	(.198)	(.073)	(.512)	(.027)	(.267)
ln(# individuals from same ethnic group)	.022	-.139	.070	.327	.020	-.204
	(.007)	(.073)	(.022)	(.215)	(.008)	(.087)
# individuals	4,884	4,884	513	513	4,371	4,371
Standard error of regression	.35	.39	.23	.36	.34	.43
Mean of dependent variable	.755	.755	.721	.721	.759	.759

Notes: Standard errors in parentheses. All regressions control for (a quadratic in) age, marital status, cohabitant status (where applicable), dummies for #kids in the household (where applicable), educational attainment, country of birth fixed effect, neighborhood fixed effects, and immigration year fixed effects. IV estimation is by 2SLS using the characteristics of the assigned neighborhoods as instruments for the characteristics in 2000. Robust variance estimates, allowing for correlation across individuals residing in the same parish.

Table A1: Variable definitions and primary sources of data

Variable	Definition	Primary source of data
Individual characteristics		
Welfare receipt	Dummy for the incidence of welfare receipt in the household.	Income tax registers, Statistics Sweden (SCB).
Welfare eligibility	Dummy for being a member of a household eligible for welfare. The income cut-off is the sum of the national norm (varying by the number of adults and kids in the household) and the average municipal rent in public rentals.	Income tax registers, SCB, + additional information.
Education	Highest degree attained.	Education register, SCB.
Kids	Dummies for the number of kids ≤ 15 years of age in the household.	Income tax registers, SCB.
Immigration year	Year of receipt of residence permit.	Population register, SCB.
Country of origin	Immigrant source country; see Table A3 for more details.	Population register, SCB.
Local/group characteristics		
Size of ethnic group (E_{cpt})	Number of individuals from source country c residing in parish p at time t .	Population register, SCB.
Number of welfare recipients from an ethnic group (W_{cpt})	Number of individuals from source country c residing in parish p at time t who are members of a welfare receiving household.	Population register and Income tax register, SCB.
Fraction of welfare recipients in ethnic group	W_{cpt}/E_{cpt}	Population register and Income tax register, SCB.

Table A2: Summary statistics: Means (Standard deviations).

Variable	All	Stayers	Movers
Local/group characteristics			
ln(# welfare recipients from ethnic group in the neighborhood)	3.878 (1.804)	3.467 (1.736)	4.019 (1.805)
ln(# individuals from ethnic group in the neighborhood)	5.035 (1.538)	4.766 (1.497)	5.128 (1.541)
ln(fraction of neighborhood ethnic group receiving welfare)	-1.157 (0.706)	-1.298 (0.755)	-1.109 (0.681)
Individual characteristics			
Welfare receipt 2000	.390	.350	.404
Welfare receipt in the year of immigration	.719	.717	.720
Eligible for welfare (defined as total income < calculated income limit)	.386	.385	.387
Age	40.052 (8.260)	41.613 (8.794)	39.518 (8.000)
Female	.429	.513	.399
Married	.597	.634	.585
Cohabiting (includes married)	.576	.622	.560
Kid	.632	.675	.618
# kids	1.554 (1.623)	1.628 (1.568)	1.528 (1.640)
Years of schooling	11.895 (3.164)	11.579 (3.246)	11.998 (3.130)
Education: Missing	.054	.083	.044
< 9 years	.139	.172	.128
9–10 years	.139	.147	.136
High school ≤ 2 years	.179	.179	.179
High school > 2 years	.190	.158	.201
University < 3 years	.119	.098	.127
University ≥ 3 years	.179	.164	.185
Immigration year: 1990	.454	.455	.454
1991	.546	.545	.546
Region of origin: Former Yugoslavia	.059	.066	.056
Poland	.030	.041	.027
Baltic states	.005	.007	.005
Eastern Europe 1	.082	.100	.075
Eastern Europe 2	.015	.020	.013
Mexico and Central America	.019	.028	.016
Chile	.027	.047	.020
South America (excluding Chile)	.032	.040	.029
African Horn	.144	.063	.172
North Africa (Arabic countries) and Middle East	.179	.195	.173
Other Africa	.026	.031	.025
Iran	.140	.093	.156
Iraq	.106	.086	.114
Turkey	.034	.042	.031
South East Asia	.069	.098	.059
Other Asia	.034	.043	.030
# individuals	22,556	5,751	16,805

Notes: Unless explicitly stated otherwise, the variables refer to the situation in the year 2000. “Stayers” are those who stayed on in the assigned neighborhood between the year of immigration and the year 2000. “Movers” are those who moved between these two time points.

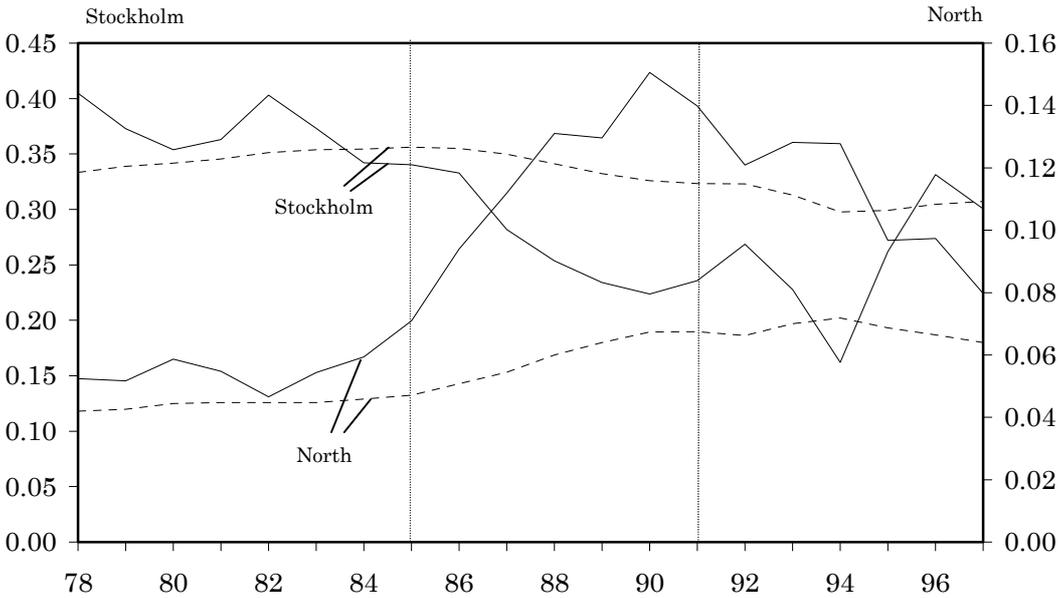
Table A3: Source countries

“Country” of birth	Percent of sample
1. Former Yugoslavia	5.8
2. Poland	3.0
3. The Baltic states	0.5
Estonia	0.4
Latvia and Lithuania	0.1
4. Eastern Europe 1	8.2
Rumania	3.5
The former USSR	2.8
Bulgaria	1.8
Albania	0.1
5. Eastern Europe 2	1.5
Hungary	0.9
The former Czechoslovakia	0.6
6. Mexico and Central America	1.9
El Salvador	1.0
Mexico	0.2
Other countries	0.7
7. Chile	2.7
8. Other South America	3.2
Peru	1.0
Brazil	0.7
Colombia	0.6
Argentina	0.4
Uruguay	0.3
Other countries	0.3
9. African Horn	14.4
Ethiopia	8.3
Somalia	5.9
Sudan and Djibouti	0.2
10. North Africa (Arabic countries) and Middle East	17.9
Lebanon	9.7
Syria	3.3
Morocco	1.3
Tunisia	0.9
Egypt	0.7
Algeria	0.5
Israel	0.5
Palestine	0.4
Jordan	0.3
Other countries	0.3
11. Other Africa	2.6
Gambia	0.7
Uganda	0.3
Zaire	0.3
Ghana	0.2
Other countries	1.4
12. Iran	14.0
13. Iraq	10.7
14. Turkey	3.3
15. South East Asia	6.9
Vietnam	3.2
Thailand	1.9
the Philippines	1.2
Malaysia	0.2
Laos	0.2

Other countries	0.2
16. Other Asia	3.4
Sri Lanka	1.0
Bangladesh	0.8
India	0.6
Afghanistan	0.4
Pakistan	0.4
Other countries	0.1
Total (Sum of bold-faced numbers)	100

Notes: China and North Korea are not included in our sample despite being refugee source countries. The reason for this is that these countries are lumped together with Japan. The bold face information represents the country of birth information that we have available in the data. For aggregates of countries we also present estimates for individual countries that have been derived by combining the information in the IFAU data base with the information in the LINDA data base; see Edin and Fredriksson (2000) for a description of LINDA. As a general rule we only list individual countries as long as they represent more the 0.2 percent of the inflow.

Figure 1: Share of non-OECD immigrant inflow (solid) and stock (dashed) located in Stockholm and in the north of Sweden, 1978–1997.



Notes: “Stockholm” refers to the county of Stockholm, and “North” to the six northernmost counties of Sweden. Authors’ calculations using the LINDA immigrant sample.

Figure 2: The IV estimates on enclave characteristics

