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Never give up? The persistence of welfare participation in Sweden

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Abstract

Long-term social assistance dependency is a growing concern in Sweden and other European countries. In order for policy makers to design effective welfare reforms it is important to know how strong the state dependence associated with social assistance is in the population and to what extent it varies with different factors, and among different groups. We estimate the effect of the state dependence in social assistance for Sweden during the 1990s, for both Swedish-born and foreign-born. Using a dynamic discrete choice model that controls for unobserved heterogeneity and the initial conditions problem, we found that the effect is three times larger for foreign-born compared to Swedish-born. However, when the effect is distributed over time, it decreases and loses significance after three years for both groups. This suggests that resources should be allocated for programs that connect working-age recipients with the labor market as early as possible.

JEL Codes: I30, I38, J18

Keywords: Social assistance, Welfare persistence, State dependence, Unobserved heterogeneity, Initial conditions problem, Dynamic probit model, GHK simulator

1 Introduction

In Sweden, as in many other OECD countries, the share of the working-age population receiving social assistance increased dramatically during the 1990s (OECD 2003). To a large extent this was a reflection of the economic recession that had major consequences on the labor market and resulted in both a substantial drop in the labor force participation and a dramatic increase in the unemployment rate. At the end of the 1990s the stock of social assistance recipients eventually started to decrease, which to a large extent was a result of the improved labor market conditions. However, the long-term participants were not significantly affected. On the contrary, their share was in increase and represented a major part of the expenditure at the end of the 1990s and beginning of the 2000s. This is a picture of a substantial serial persistence in welfare participation that also has been observed in many other countries.

Two potential explanations for this kind of behavior have been emphasized in the literature (Heckman 1981a and 1981c). One explanation is that the experience in itself alters the cost or the stigma related to welfare participation, shifting the structure of the individual's preferences and increasing the propensity of remaining on welfare in the following period. This kind of persistence is often referred to as a "true" or structural state dependence. If this type of persistence is strong in the population, efforts should be made

to avoid short-term economic policies that increase people's likelihood of being exposed to this experience. An alternative explanation is that the observed persistence is a result of innate individual differences which comes from permanent unobserved heterogeneity across individuals. This implies that some individuals have a larger propensity to live on welfare relative to others. If this is the case, it means that current participation has no structural effect on the future propensity to participate and is referred to as "spurious" state dependence.

Even though the academic literature on welfare participation is vast (see Danziger et al. 1981; Lichter et al. 1997; Moffit 1992 and Barrett and McCarthy 2008 for literature surveys), the body of literature focusing on state dependence and social assistance is still small (see Chay et al. 1999 and Cappellari and Jenkins 2009 for studies on the US and Brittan). For Sweden, Hansen and Lofstrom (2003, 2006, 2009) have a series of papers that focus on the dynamics of welfare participation of both immigrants and natives. Their results show that after controlling for observed characteristics welfare participation is still higher among immigrants relative to natives, but the difference tends to fall at a very slow rate with the length of the time in the country (Hansen and Lofstrom 2003). Additionally, they find that differences in welfare use to a large extent are explained by differences in unobserved characteristics, and by the fact that immigrants have a higher rate of entry into welfare as oppose to a lower rate of exit (Hansen and Lofstrom 2006). They also find that refugees exhibit a greater degree of structural state dependence relative to natives, but that the structural state dependence between natives and non-refugees is very similar (Hansen and Lofstrom 2009).

We have a similar setting as in the papers by Hansen and Lofstrom by focusing on differences in social assistance receipt between two cohorts of individuals (Swedish-born and foreign-born) during the 1990s, when Sweden experienced both an economic crisis and a big inflow of immigrants. Both events implied an increased use of social assistance, which is the last income safety-net for any person residing in Sweden (regardless of nationality) with one exception: recent immigrants, who are instead entitled to a specific benefit. Therefore, it is interesting from both an academic and a policy perspective to learn more about the evolution of welfare dependency during a recession period. We do this by following the social assistance status of two cohorts of Swedish-born and foreign-born individuals between 1990 and 1999.

We extend the literature by describing the strength and determinants of the structural state dependence with respect to social assistance and to what extent it differ between Swedish-born and foreign-born. That is done by estimating the magnitude of the structural state dependence in welfare participation and by investigating how observed factors (individual and macro-related factors) are associated with this dependence. In a second step, the model is respecified and extended with a distributed lag structure with the purpose to investigate how the state dependence in welfare persists over time and to explain its structure and significance, which might help policy makers to design relevant policy measures.

We use a general dynamic discrete choice model proposed by (Heckman 1981a) and investigate the dynamic structure of welfare participation. It incorporates state dependence while controlling for the initial conditions problem and for individual unobserved heterogeneity using a general intertemporal covariance structure.

The rest of the paper is organized in the following way. The next section describes the institutional settings and data. Section 3 presents the empirical specification and the estimation method. Section 4 presents and discusses the results and Section 5 sums up and concludes the paper.

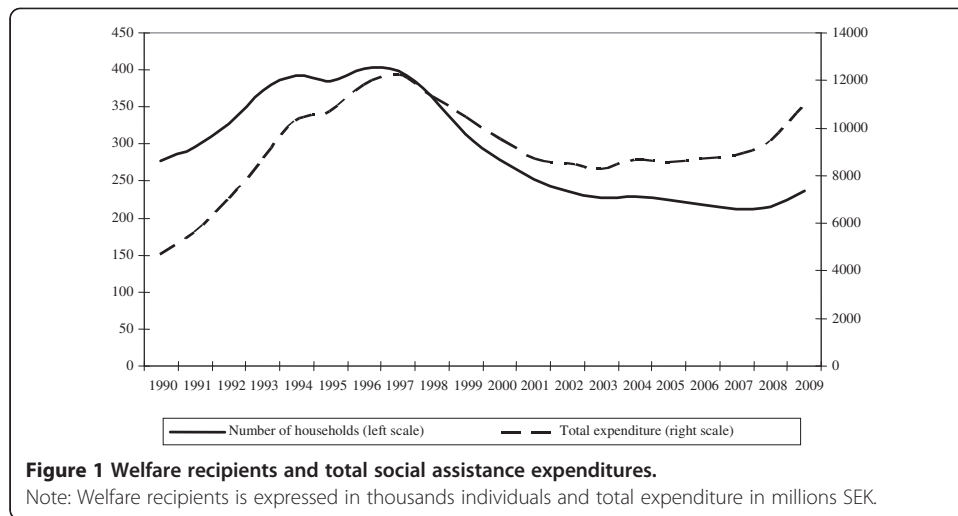## 2 Institutional settings and data

The Swedish welfare state promotes the principle that all citizens should be equally entitled to a decent standard of living. The social assistance (SA) is the last income safety-net for any person residing in Sweden (regardless of nationality) with one exception: recent immigrants, who are instead entitled to a specific benefit. The right to social assistance is regulated in the Social Services Act, which provides fairly general guidelines concerning eligibility standards and compensation levels. The responsibility for financing and providing the benefit rests with the municipalities. Benefits are granted to households to keep them above a minimum standard of living, covering expenses for food, housing, childcare, etc. No maximum period for eligibility is specified, but the recipient household's adults in working age must show that they make full-time efforts to find a job.

The total SA benefit consists of two parts. The first part is a regulated component that covers expenditures for housing, childcare, and similar expenses. The second part covers the more basic daily consumption needs of the household, such as food and clothing. The level of the second component is referred to as the social assistance norm and is regulated by the welfare recipient's home municipality. The National Board of Health and Welfare provide guidelines to the municipalities in order to harmonize the level across the country.

Applications are normally assessed at the social services office and benefits are normally distributed on a monthly basis. A social worker is in charge of the assessment process. Although the legislation defines some minimum standards, social workers enjoy a considerable degree of discretion in their decisions on both eligibility and the level of benefit awarded. The decision is based on an interview process, going through the complete financial situation of the household. The applicant cannot voluntarily give up a job in order to live on social assistance. With some exceptions, household assets must be exhausted before social assistance may be received.
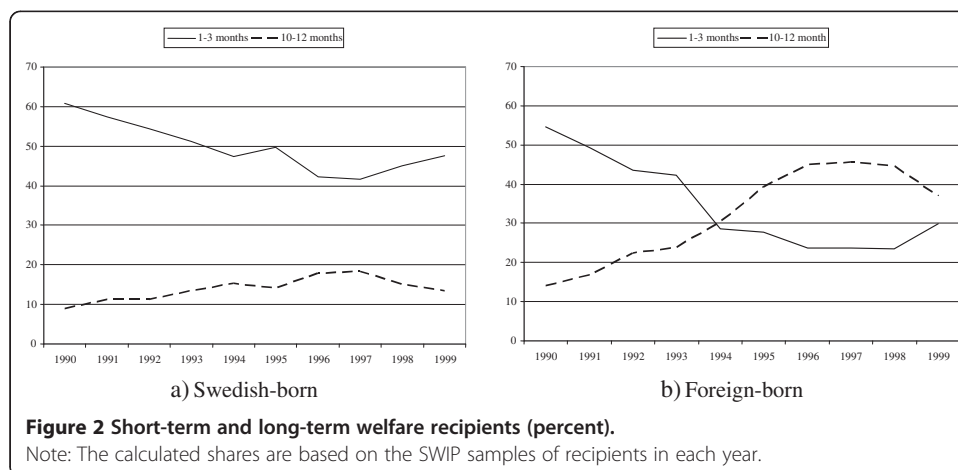
During the 1990s the number of social assistance recipients increased dramatically due to the economic recession, and the participation rate peaked in 1997 (Figure 1). The number of welfare participants increased by almost 50 percent between 1990 and 1997, but has since then been decreasing steadily until 2008, when a new economic crises evolved. The increasing number of welfare recipients during the 1990s also implied major changes in the composition of the total stock of recipients, which cannot be seen in yearly figures. The share of short-term (i.e., 1–3 months per year) and long-term (i.e., 10–12 months per year) welfare recipients are high and fluctuate a lot during the analyzed period, especially among the foreign-born recipients. Figure 2 shows that during the analyzed period the share of the long-term recipients doubled for the Swedish-born, while it tripled for the foreign-born, which is an indication that the state dependence is somewhat stronger for the latter group. Apparently there are great differences between the two groups in terms of participation behavior.

Differences between Swedish-born and foreign-born in both receipt of and dependence on social assistance shown by Figures 1 and 2 might be driven by the institutional

Figure 1 Welfare recipients and total social assistance expenditures.
Note: Welfare recipients is expressed in thousands individuals and total expenditure in millions SEK.

settings of the welfare system during the 1990, and the migration policy before and during the analyzed period.[1] Sweden's modern migration policy, launched in 1975, has as main objectives equality, freedom of cultural choice, cooperation, and solidarity. This means that in Sweden, foreign-born and the Swedish-born should have the same opportunities, rights and obligations, and work together to resolve issues of common interest. In 1996, Swedish migration politics changed its direction towards the process of integration, which includes measures against ethnic discrimination in working life that among others formulate demands towards employers to promote ethnic diversity. Even though the 1990s was a decade of welfare state retrenchment in Sweden, immigrants were much less of a target for cut-backs (Sainsbury 2006).

During the 1990s, the composition of immigrants has changed from labor migrants to asylum seekers and refugees, which made social assistance increasingly important. Social assistance is one of several income transfers and not the most important one. The other programs are however of the income-replacement type leading to that those who have worked (more often Swedish-born than foreign-born) are getting income support from those other programs (e.g., sickness insurance and unemployment insurance). The social

Figure 2 Short-term and long-term welfare recipients (percent).
Note: The calculated shares are based on the SWIP samples of recipients in each year.

assistance is the last alternative of the safety net society. However, for some groups, for example newly-arrived immigrants, social assistance is the only source of income. To some extent, the use of social assistance by foreign-born reflects the support given to refugees upon their arrival and during the initial years.[2] A person who comes to Sweden to seek asylum must contact the Migration Board, which starts an investigation, and informs the officials of the municipality. If the asylum seekers obtain a residence permit, they are obliged to participate for a period of 18–24 months in an introduction program that normally includes learning of the Swedish language, introduction to the Swedish society, and training related to the labor market. As soon as housing becomes available, the Migration Board will stop providing the asylum seeker with any financial assistance and will turn the responsibility over to the municipality. The municipalities are assumed to take responsibility for immigrants as well as for other population groups. However, the implementation of this policy is to a large extent depending on the municipalities that accept to receive the refugees. The Migration Board had furthermore the task to support the municipalities with information, advice and evaluation of the municipal activities.

During the analyzed period, a former system of targeted state grants was replaced in 1993 by block grants, which implied that several municipalities began to exclude some budgetary items included in the guidelines. A national benefit standard was introduced in 1998, which was intended to guarantee a minimum standard including a certain number of budgetary items equalized over the country, and limiting the municipalities' possibilities to lower the levels. The municipalities still have the possibility to choose if certain budgetary items shall be included as a uniform benefit rate or not. However, there are no signs that the uniform benefit rate has diminished the municipal variation in social assistance costs (Bergmark 2001).

Furthermore, the 1998's change in the Social Service Act enabled municipalities to strengthen the rules for benefit eligibility, by conditioning benefit receipt on participation in programs for job search and job training (e.g., so-called activation programs for social assistance recipients who are capable of working). However, the implementation of such programs is highly decentralized.

The data used in this paper is extracted from the register-based Swedish Income Panel (SWIP), a stratified random sample of the population living in Sweden, drawn by Statistics Sweden every year since 1978. SWIP contains both a 1% sample of the Swedish-born population and a 10% sample of the foreign-born population.[3] Demographic variables going back to 1968 and several variables from tax register for all sampled individuals and their partners are reported (with repeated yearly cross-sectional data extracts).

Given this design and the aim of our paper to understand the persistence of welfare participation, we select individuals who were in working-age during the entire analyzed period (i.e., aged 18–50 in 1990), excluding students and early-retired people in 1990, and "drop-outs" due to emigration, death, or other reason for not being in the tax register during 1991–1999.

Given the fact that social assistance is applied for by the household, our data shows whether the household of the sampled person received social assistance at least once during a calendar year (we have information about how many months of assistance, but not if they were in one or more spells). The household is eligible or not for social assistance, and therefore when analyzing the data we follow Hansen and Lofstrom (2003, 2006) and let the household be represented by the sampled individual. We use the characteristics

of the sampled individual (e.g., gender, age and education) as factors related to the person originally sampled into SWIP. Our samples include around 10,000 individuals in 1990. In order to balance the panel, some of the individuals were dropped, and therefore the final samples of individuals were reduced to 8,205 and 8,407 for the Swedish-born and the foreign-born, respectively.

The variables used as observed explanatory factors in the analysis are presented in Table 1, which shows mean values for the whole period for the Swedish born-and the foreign-born samples (for the whole group and separately for recipients and non recipients).

3 The empirical specification

Earlier studies often noted that individuals with previous experience of welfare had an increased risk of future participation, perhaps because the experience (in itself) alters the cost or stigma related to receiving assistance, shifting the individual preference structures and increasing the likelihood of remaining on welfare for a longer period. If this is true, efforts should be made to avoid short-term economic policies that increase the likelihood of people's being exposed to this experience. Alternatively, the observed persistence might be due to innate individual differences, with some individuals having a greater propensity to live on welfare than others. If these differences among people are not properly controlled for when analyzing the patterns of welfare participation, then observed persistence will not necessarily be related to changes in individual preferences.

We assume an economic agent i who in each time period t makes a discrete decision about welfare participation with the objective of maximizing his or her expected lifetime

Table 1 Mean observable characteristics of welfare recipients, 1990 – 1999

	Swedish-born			Foreign-born		
	Total	Welfare recipients	No welfare recipients	Total	Welfare recipients	No welfare recipients
Age	39.9	35.3	40.0	40.1	36.6	40.5
Age 18–30 (%)	19.1	35.0	18.6	15.6	24.7	14.5
Age 31–40 (%)	31.5	35.1	31.4	35.2	42.9	34.2
Age 41–59 (%)	49.4	29.9	50.0	49.2	32.4	51.2
Educational level						
Primary (%)	22.8	44.1	22.1	37.2	53.9	35.2
Secondary (%)	51.2	51.8	51.2	42.6	36.6	43.3
Post secondary (%)	25.9	4.1	26.7	20.2	9.4	21.5
Children aged less than 4 (%)	16.7	17.2	16.7	17.4	24.7	16.5
Cohabitant (%)	59.8	21.2	61.2	61.4	43.0	63.6
City region (%)	24.5	30.2	24.3	36.6	45.4	35.6
Unemployed (%)	13.5	40.9	12.5	20.9	37.4	18.9
Regional rate of welfare participation	4.9	5.4	4.8	5.6	5.9	5.5
SA norm (SEK)	7 797	7 977	7 791	8 008	8 011	8 008
Average regional welfare duration	4.6	4.6	4.6	6.6	6.7	6.6
Sample size	82 050	2 738	79 312	84 070	9 138	74 932

utility. Even though the decision is discrete, it is based on a latent continuous measure Y_{it}^*, representing the individual i propensity to participate in period t. This measure is based on the difference between the individual utility with and without welfare in period t. When the utility with welfare is greater than the utility without welfare, the individual will choose the welfare alternative. Hence, it is the difference in utilities that is the relevant measure when making the decision. However, the current utility difference is also a function of the utility difference in the previous period, t-1. The utility difference in period t may therefore be expressed in the following way:

$$Y_{it}^* = X_{it}\beta + \sum_{j=1}^{s} \gamma_j Y_{it-j} + v_{it} \text{ with } Y_{it} = \begin{cases} 1 & Y_{it}^* \geq 0 \\ 0 & Y_{it}^* < 0 \end{cases} \tag{1}$$

$$i = 1, \ldots, N; \quad t = 1, \ldots, T;$$

The error term v_{it} is assumed to be independent of X_{it} and is independently distributed over i. Within the observations of each individual, v_{it} is assumed to be distributed multivariate normal with a mean zero and a general intertemporal covariance matrix Ω. Y_{it-j} is a dummy variable that indicates if the individual i received social assistance in the year t-j, where $j = 1,2\ldots, s$, with s being the first year in the history of the individual, or the maximum number of time periods back in time that we control for.

The availability of panel data provides for the possibility to distinguish average behavior from individual behavior by specifying the error term v_{it} into $f(\alpha_i, u_{it})$, where α_i controls for the effect of unobserved individual specific factors and u_{it} is a residual that controls for factors other than the individual-specific characteristics not observed, and that appear random, for the investigator. Hence, the existence of an individual specific unobserved permanent component allows individuals who are homogenous in their observed characteristics to be heterogeneous in their response variables. This model is consistent with (McFadden's 1973) random utility model applied in an intertemporal context.

3.1 Welfare persistence

Specification (1) allows for three different sources of persistence after controlling for observed explanatory factors: 1) serial correlation in the error term u_{it}; 2) unobserved individual heterogeneity α_i; and 3) structural state dependence γ. Although all three sources are interesting, the focus is on the size and distribution of the components of the structural state dependence, while controlling for the other two sources. If the components in the intertemporal covariance matrix are significantly different from zero, then unobserved individual specific heterogeneity and serial correlation will affect the estimates for the state dependence if not controlled for.

As indicated, the existence of a structural state dependence will be tested in this study. The measure γ captures the idea that the effect of an experience in the previous period has a real and behavioral effect on the choice in the current period. In a first step the structure is limited to a first order Markov process that captures the correlation between pair-wise observations over time. Having $\gamma > 0$ would imply that the likelihood of being dependent on welfare in the current period is larger for those with an earlier experience compared to others without such an experience. In a second step we relax the assumption of a first order Markov process and allow for more lags; we can then see how many years

it takes to lose the increased risk of being a social assistance recipient as a result of the first initial experience.

To investigate the factors affecting the first order state dependence, the overall effect will be decomposed into several observed explanatory factors that potentially affect the size of the state dependence. That is, a linear approximation will be applied in the following way: $\gamma = z\delta$, with z being a vector of observed factors, and δ being a vector of parameters. With this specification, a deeper understanding of the factors behind the event can be gained.

Distinguishing between structural and spurious state dependence is of considerable interest, since they have very different policy implications. A policy that temporarily increases the probability of participation has different implications for future probabilities in a model with structural state dependence than in a model where the persistence is solely due to serial correlation and/or unobserved heterogeneity.

3.2 Estimation and identification

The estimation method applied in this study is based on maximum likelihood technique, which requires the formulation of a likelihood function. The model as described by equation (1) is based on ten time periods (1990–1999), resulting in the following log-likelihood function:

$$L = \sum_{i=1}^{N} log[prob(Y_{i1}, Y_{i2}, \dots, Y_{i10})] \tag{2}$$

where

$$\text{Prob}(Y_{i1}, Y_{i2}, \dots, Y_{i10}) = \int_{a_{i1}}^{b_{i1}} \cdots \int_{a_{i10}}^{b_{i10}} (v_{i1}, \dots, v_{i10}) dv_{i10}, \dots, dv_{i1}$$

$a_{it} = -X_{it}\beta$ and $b_{it} = \infty$ if $Y_{it} = 1$, while $a_{it} = -\infty$ and $b_{it} = -X_{it}\beta$ if $Y_{it} = 0$. $f(.)$ is the multivariate normal density function. The standard difficulty in this problem is the evaluation of the tenfold integral in equation (2), which will be solved using a smooth recursive conditioning simulator (GHK simulator) that simulates the multivariate probabilities rather than evaluating them numerically.[4] The likelihood function described above may therefore be rewritten as:

$$L_{SML} = \frac{1}{R} \sum_{i=1}^{R} \prod_{t=1}^{T} Q_t(\eta_1^r, \dots, \eta_{t-1}^r) \tag{3}$$

where $\Pi_{t=1}^{T} Q_t$ represents the sequence of conditional probabilities, and η_t^r the random draws from the truncated normal density (for an intuitive description of the procedure, see Train 2003).[5]

Since this is a dynamic model, two additional complications need to be solved in order to receive consistent estimates: the initial conditions problem and the necessity of separating the effect of unobserved individual characteristics from the possible effect of structural state dependence. The first problem is related to the fact that we are unable to observe the data generating process from its beginning for all individuals. That is, some individuals have previous experience of welfare participation that is not accounted for in the initial

year of the observed series, which generates a conditional relationship causing inconsistent estimates of the parameters of interest. If the process is in equilibrium or if the previous experience is independent and exogenous of the behavior observed during the first time period, then there is no problem. However, this is unlikely to be the case. The problem of the initial conditions declines with the length of the panel, but the panel length in this study is only ten time periods, something that requires special attention. Heckman (1981b) proposes a statistical approximation method that solves the problem with reasonable precision.[6] This is done by approximating the initial state in the sample using a univariate probit model, estimating its parameter separately and allowing its error term to freely correlate with the error terms of the remaining time periods and thereby circumvent the endogeneity problem. Here the initial state equation is estimated simultaneously with the participation equation.

The second problem to consider is the problem of distinguishing between structural and spurious state dependence, which is the same as separating the effects of unobserved individual characteristics from the potential effect of structural state dependence. The solution to this problem is related to the assumptions made on the residual term in equation (1). In the literature, there are many examples of more or less restrictive ways of dealing with the residual term in order to separate out the individual specific effects. Two alternative specifications will be used and compared with the general error structure of the main model. The general error structure of the main model is based on a free covariance structure that allows individual covariances in the covariance matrix to deviate from each other. The more restrictive structures used are (1) a first-order Markov process ($v_{it} = \rho v_{i,t-1} + u_{it}$) allowing for serial correlation and assuming that no other effects remain in the residual term, and (2) a conventional component of variance scheme ($v_{it} = \alpha_i + u_{it}$).[7]

In order to identify the parameters of the main model, it is necessary to impose some normalizations. For the coefficients of the model to be consistently estimated, it is sufficient to normalize the variance of the first time period only (the initial conditions equation), which means that it is possible to allow for heteroscedasticity over time. However, when using the GHK simulator, such normalization causes an asymmetry in the simulated error structure, biasing the standard errors (for the coefficients of the participation equation) received from the estimated information matrix using standard numerical methods such as the finite difference approach. Therefore, the variances for all time periods have been normalized to one, imposing homoscedasticity over time.[8]

4 Results

Since it is well-known that the welfare behavior differs greatly between natives and immigrants, and the factors affecting their participation behavior are different, we separate the analysis between those born in Sweden and those born elsewhere. The discrete choice model estimated for each groups is based on a simulated maximum likelihood function using 400 simulated draws per individual (i.e. 40 draws for each observation).

4.1 Swedish-born individuals
Table 2 contains estimates from the dynamic discrete choice model for the Swedish-born group. The table shows the estimates of the initial conditions equation and the participation equation. The parameters of the initial conditions equation are of less interest since

its main purpose is to control for the endogenous initial period. The focus will therefore be on the participation equation.

The overall results are in line with those found in the literature. The effect from continuous age is negative, implying that the likelihood of receiving social assistance decreases with age. This corresponds to the situation that young people more often are exposed to welfare, since they are new on the labor market and not yet established. For each additional age-year, the likelihood of receiving social assistance decreases by 0.2 percentage points.

It is also well established that years of education is negatively associated with the propensity to live on welfare, and the results here indicate that an increase in the educational level reduces the risk of receiving social assistance. The transition from primary schooling to a secondary schooling degree reduces the likelihood by 1.2 percentage points and this figure more than doubles in the transition to a post secondary degree.

Official statistics show that there is a great deal of regional variation in welfare expenditure as well as in the number of participants among municipalities. It has been estimated that around 70% of the variation in welfare cost among municipalities can be explained by labor market conditions and population structure. One would expect that the labor market conditions would be more favorable in city regions, since the supply of jobs is greater there compared to the countryside. However, no such spillover effect from employment opportunities on living in a city region could be found here.

When looking at simple correlation measures between city region and welfare participation, one typically receives significant correlation estimates, even though they are small. However, when controlling for unobserved individual differences these effects typically disappear. This could be an indication of a sorting structure which implies that individuals with a higher propensity to end up on welfare tend to stay in city regions. Åslund and Fredriksson (2009) report that long-term welfare dependence increases if the individual is placed in a welfare dependent community. To our knowledge, this in the only study that report empirical evidence for sorting structure of the social assistance in Sweden, but there are several papers that show that this kind of sorting exists for the sickness insurance (e.g., Frykman and Hansen 2005, Hesselius et al. 2009, and Lindbeck et al. 2011). These papers reported that there are strong variations in absence behavior across local geographical areas. Additionally to the factors related to the local and regional geographical, economic and political differences, there are social and moral motivations. The use of the social insurance is relatively high in regions with a relatively weak labor market compared to the regions with better labor market conditions.

In the literature it is often argued that unemployment together with household separations explain the major part of the temporary need for social assistance. One would therefore expect that cohabitation and marital status would reduce the likelihood of living on welfare. This is confirmed by the results, indicating that living together with someone in a household reduces the likelihood of going on welfare by 2 percentage points.

Households with children typically have a strained economic situation, especially when both parents and their children are young, since being young is associated with lower earnings. Having children below the age of four increases the likelihood of welfare dependence by 0.6 percentage points.

Being unemployed is one obvious reason why some people end up living on welfare. But when the analysis is made on the general population aged 18–50 and related to a

Table 2 Estimation results of welfare participation by Swedish-born, 1990-1999

	Initial condition		Participation equation		
	PE	SE	PE	SE	ME[11]
Age/100	-0.599	0.391	-1.103[*]	0.211	-0.048
Educational level (CG: Primary school)					
Secondary school	-0.383[*]	0.062	-0.262[*]	0.035	-0.012
Post Secondary school	-0.867[*]	0.123	-0.741[*]	0.058	-0.032
City region	0.027	0.081	-0.056	0.043	-0.003
Married/Cohabitant	-0.638[*]	0.069	-0.436[*]	0.031	-0.020
Children < 4 years	0.348[*]	0.072	0.128[*]	0.034	0.006
Unemployed	0.723[*]	0.077	0.401[*]	0.028	0.023
Municipal rate of SA-participation/10	0.961[*]	0.289	0.839[*]	0.109	0.033
Social assistance (SA) norm/10K	0.164	0.174	0.258[*]	0.047	0.012
Average municipal duration of SA /10	-0.268	0.218	-0.384[*]	0.086	-0.023
Structural state dependence (40 draws)			0.897[*]	0.072	0.041
Structural state dependence (100 draws)			0.872[*]	0.068	
Fixed time effects		YES			
		Alternative error schemes			
	General error structure	First order Markov	Component of variance		
Log likelihood	-6627.42	-6938.76	-6675.43		
LR-test		622.68*	95.96*		

Note 1: n=82,050; the critical value at 45 degrees of freedom is 61.65.
Note 2: PE = Parameter estimates; SE = Standard errors; ME = Marginal effects. * indicates significance at the 5% level. LR-test refers to a log likelihood ratio test comparing alternative specifications where the main specification works as base. Note 2 holds for all other tables in the paper that contain the explained notations.

random individual from that population, the link is not that strong. This is most likely because most people receive unemployment benefits and not social assistance when unemployed. The likelihood of being dependent on welfare when unemployed increases by only 2.3 percentage points, which is by no means the largest effect estimated here.

A more interesting effect on individual welfare behavior comes from the local (municipal) average welfare participation rate. This variable stems from the effect of the influence of environmental or local networks on welfare participation. Åslund and Fredriksson (2005) investigated whether the size and the characteristics of ethnic enclaves have any causal effect on welfare use among immigrants. They found that individual welfare use increased by 2.6 percentage points in response to an increase in the share of welfare recipients by 10 percent. This is in line with our study, which also finds a positive relation between the share of welfare recipients and the individual propensity to live on welfare: When the share of welfare recipients increases by 1 percentage point, the propensity increases by 0.3 percentage points.

The size of the social assistance norm mechanically regulates the size of the group of people eligible for social assistance. If the norm is larger, the eligible group becomes larger, and obviously, a larger group of people then have the possibility to live on welfare. However, it is reasonable to believe that the largest effect concerns those on the margin of being a welfare participant, which implies that the overall effect on the population should be quite small. If the yearly norm is increased by 10,000 SEK, the propensity to receive social assistance increases by 1.2 percentage points.[9]

Another interesting variable measures whether the local (municipal) average duration on welfare affects the propensity to live on welfare. To be more exact, the measure represents the local average number of welfare months during a given year, which should be seen as a proxy for dependency duration, or the strength of the dependency that welfare recipients have in a given municipality. The variable is found to have a negative effect on the propensity to live on welfare. The rationale behind this relationship is not obvious. In the data we find no statistical relation between local welfare duration and unemployment or welfare participation if we look at simple unconditional correlation measures. However, we find a relatively strong and positive statistical relationship between local welfare duration and the local rate of welfare participation (0.28) and large city regions (0.23). This implies that when the local rate of welfare participation and the local average welfare duration are both high, the unconditional effect on welfare participation is cancelled, and when controlling for individual heterogeneity the effect becomes negative. At this point, it is an unanswered question whether this effect is behavioral or spurious.

The last variable in the specification is related to welfare persistence, and the effects of welfare participation over time. That is, when people are introduced to social assistance, a change in their propensity takes place that makes it harder to leave the welfare state, which implies negative duration dependence. In the dynamic literature using continuous duration models, this phenomenon is often noted and investigated. The finding of negative duration dependence is subject to more than one interpretation that differs depending on whether the analysis controls for unobserved heterogeneity. When that is not the case, the duration dependence might be spurious.

The effects of structural state dependence, which is measured using a first order Markov process, constitute the single largest participation effect among those included in the analysis. It implies that if an individual receives welfare in the previous year, he or she has a 4.1 percentage point increased propensity to receive it in the present year. This has important policy implications since any short-term economic policy measure that increases the participation rate will have long-term consequences that might be difficult to solve, at least in the short-run.

The general error structure was, in a second step, restricted to a specific structure: a first order Markov process and a component of variance structure. Table 2 reports the corresponding log-likelihood values and likelihood-ratio tests. As can be seen, the general structure offers a significant improvement. However, the component of variance structure seems to be a relatively good approximation to the general structure in this case. The general behavior of the coefficient for structural state dependence is that it is biased upwards, and that the more restrictive the error structure is, the more the bias increases.

4.2 Foreign-born individuals

We now turn to the second group under investigation in this study, namely the foreign-born group. As with the Swedish-born group, Table 3 contains parameter estimates from the initial conditions equation as well as from the main participation equation. Additionally it contains extra observable factors directly related to the foreign-born group, namely country of origin, number of years in the country, and whether the individual is coming from a refugee country. As before, the discussion will focus on the participation equation.

The observed factors in common with the Swedish-born group show about the same effects on welfare propensity when it comes to direction, but there are some differences related to size that are worth mentioning. Continuous age shows a twice as large effect, which means that the welfare behavior differs more among different age groups than for the Swedish-born. Being young and being born in another country are two factors working in the same direction in terms of propensity for welfare participation.

The effects of higher education are at about the same level, while the effect of living in a large city region is almost twice as large, even though it is still very small. Marital status is an important factor, and living together with someone reduces the likelihood by 4 percentage points, which is twice the number for the Swedish-born. We know from the data section that the share of the welfare receiving households with several family members is growing among immigrants. However, this phenomenon appeared in the second half of the 1990s, and we are analyzing and following a random sample taken in 1990, which obviously does not follow this pattern. Hence, the described phenomenon is mainly related to newly arrived immigrants and refugees arriving in the country with their whole families.

A related factor is the presence of younger children in the household. Having children is often associated with an increased risk of living on welfare, and having children younger than age four increases the likelihood by 1.4 percentage points; an effect twice the number of the natives.

Unemployment is a natural cause for welfare dependency, especially for immigrants where it increases the propensity by 4.1 percentage points. The situation is especially difficult when an individual is new in the country, and has an origin outside Europe. The matching problem on the labor market is related to both structural and individual factors that make it difficult for immigrants to integrate.

The effect of regional rate of welfare participation and the size of the welfare norm is about the same for immigrants as for the Swedish-born. The local average welfare duration on the other hand is much larger though, and as for the Swedes the effect is negative.

Country of origin is important, and the country-groups in the specification are in relation to Nordic-born people, a group very similar in their characteristics to the Swedish-born group. Compared to the Nordic-born, we can identify two groups: one with a larger propensity for welfare and another with a lower propensity. If from Western or Southern of Europe, the propensity is reduced by 2–3 percentage points compared to the Nordic group. People from Eastern Europe have about the same propensity as the Nordics. If from the Middle East or the rest of the world, the effect is an increase in the propensity for welfare by 3–4 percentage points compared to the Nordic group. From these results, it is very clear that there is a distinct difference whether a person is from Europe or from a country outside Europe in terms of welfare participation.

The second important immigrant-specific factor for welfare participation is the number of years since immigration. The comparison group consists of those who had been in the country for less than five years. Compared to this group it is clear that the longer the person has been in the country, the more unlikely it is that he or she ends up on welfare. A person who has been in Sweden for more than 22 years has a 5.3 percentage point reduction in propensity, compared to the newly arrived, and this is one of the largest effects in this specification.

During the 1990s, Sweden received a large number of refugees, and many of them stayed in Sweden for many years. This implied a large increase in welfare use, since

Table 3 Estimation results of welfare participation by foreign-born, 1991-1999

	Initial condition		Participation equation		
	PE	SE	PE	SE	ME
Age/100	−0.637[*]	0.281	−0.732[*]	0.161	−0.093
Educational level (CG: Primary school)					
Secondary school	−0.200[*]	0.050	−0.128[*]	0.023	−0.016
Post Secondary school	−0.706[*]	0.107	−0.387[*]	0.033	−0.044
City region	−0.044	0.049	0.015	0.026	0.005
Married/Cohabitant	−0.491[*]	0.047	−0.308[*]	0.021	−0.041
Children < 4 years	0.208[*]	0.046	0.121[*]	0.022	0.014
Unemployed	0.393[*]	0.055	0.288[*]	0.018	0.051
Municipal rate of SA-participation/10	0.357[*]	0.174	0.432[*]	0.065	0.041
Social assistance (SA) norm/10K	−0.076	0.177	0.094[*]	0.028	0.011
Average municipal duration of SA /10	0.191	0.192	−0.274[*]	0.081	−0.049
Country of origin (CG: Nordic countries)					
Western Europe	−0.344[*]	0.095	−0.244[*]	0.052	−0.030
Eastern Europe	−0.061	0.106	−0.025[*]	0.055	−0.010
Southern Europe	−0.488[*]	0.106	−0.158[*]	0.053	−0.021
Middle East	0.296[*]	0.098	0.379[*]	0.048	0.036
Rest of the world	0.295[*]	0.069	0.262[*]	0.038	0.031
Years since immigration (CG: 0–4 years)					
5–9 years	−0.505[*]	0.059	−0.128[*]	0.027	−0.015
10–14 years	−0.667[*]	0.065	−0.231[*]	0.033	−0.028
15–22 years	−0.590[*]	0.063	−0.330[*]	0.035	−0.039
>22 years	−0.701[*]	0.076	−0.441[*]	0.039	−0.053
Refugee	0.362[*]	0.079	0.070[*]	0.035	0.010
Structural state dependence (40 draws)			1.041[*]	0.053	0.125
Structural state dependence (100 draws)			1.018[*]	0.047	
Fixed time effects			YES		
		Alternative error schemes			
	General error structure	First order Markov	Component of variance		
Log likelihood	-15811.28	-16254.07	-15925.81		
LR-test		885.58	114.53		

Note: n=84,070; See Table 2 for additional notes.

they came in large numbers and often had problems integrating into the labor market. Our group does not include all these new refugees and therefore the effect is relatively modest, corresponding to a propensity increase by 1 percentage point.

The last measure related to welfare persistence is more interesting. The effect from structural state dependence is very large and three times as large compared to the Swedish-born. This implies that previous experience of welfare increases the propensity by 12.5 percentage points.

As for the Swedish-born, the effect on the fit of the model was tested for different more restrictive error structures. The conclusion is about the same here, with a significant difference between the general error structure and the two alternative error structures, and an increased bias in the coefficient of the structural state dependence that increases when restrictions are imposed on the error structure.

4.3 Welfare persistence

The results presented above show that the structural state dependence in social assistance use exists, is important, and differs greatly between Swedish-born and foreign-born people. In this section, the effect of structural state dependence is decomposed and analyzed with respect to a number of observed factors in order to see how the size of the structural state dependence may change due to changes in those factors. Table 4 presents the parameter estimates for the different factors, and some effects do stands out. For the Swedish-born, there are four significant coefficients, including the constant term. The first significant parameter is related to living in a city region and reduces the size of state dependence. From the earlier discussion, we know that living in a city region increases the likelihood of receiving social assistance in general. However, this likelihood is reduced if the person received social assistance in the previous period. This implies that the persistence in social assistance is lower in city regions, even though the probability to receive social assistance is larger in general. One possible explanation for this could be the greater supply of jobs in urban regions, which increases the possibility for households to live on their own earnings.

The second significant parameter refers to unemployment which also has a negative effect on the state dependence. This means that the overall probability to live on welfare when unemployed, is reduced if the household received social assistance in the previous period, which is to say that state dependence is decreasing with the event of being unemployed. Since this analysis is based on a general population we know that

Table 4 Average marginal effects on structural state dependence, by country of birth

	Swedish-born			Foreign born		
	PE	SE	ME	PE	SE	ME
Constant	0.621*	0.235	-	0.286	0.156	-
Age/100	0.551	0.352	0.024	0.671*	0.214	0.078
City region	−0.162*	0.078	−0.007	−0.070	0.041	−0.008
Cohabitant	0.098	0.067	0.004	0.153*	0.034	0.018
Unemployed	−0.445*	0.055	−0.020	−0.423*	0.032	−0.049
Municipal rate of SA participation/10	0.311	0.199	0.013	0.205	0.106	0.024
SA norm/10K	−0.066	0.116	−0.003	0.407*	0.132	0.047
Average municipal duration of SA/10	0.597*	0.189	0.027	0.383*	0.150	0.045
Country of origin (CG: Nordic countries)						
Western Europe				0.150	0.096	0.017
Eastern Europe				0.177*	0.084	0.021
Southern Europe				0.152	0.080	0.018
Middle East				0.138	0.071	0.016
Rest of the world				−0.029	0.054	−0.003
Years since immigration (CG: 0–4 years)						
5–9 years				−0.061	0.055	−0.007
10–14 years				−0.152*	0.059	−0.018
15–22 years				−0.061	0.062	−0.007
>22 years				−0.006	0.065	−0.001
Refugee				−0.057	0.053	−0.007

Note: see Table 2's Note 2 for explained notations.

most people receive cash assistance or unemployment benefit when being unemployed. We therefore believe that the estimated effect of unemployment on state dependence is contaminated by this general behavior.

The third significant effect for the Swedish-born refers to the effect from the average regional welfare duration. The effect is positive, which means that the persistence is stronger in regions with high average welfare durations, which is an indication that group behavior has an influence on the individual. Åslund and Fredriksson (2009) reported that welfare use in ethnic groups may reflect norms and information (endogenous social interactions) as well as exogenous characteristics of the contacts (exogenous social interactions). The welfare use among ethnic peers has a sizable effect on individual welfare use. On average, there is little effect coming from the size of the enclave; if anything, a greater number of peers lowers welfare dependence. However, when they control for the interaction between peer welfare use and the size of the ethnic community, they find that the impact of peer welfare use is increasing in contact availability.

The foreign-born group has more factors to consider and therefore more effects that are significant can be found. As could be seen in the previous sections, marriage and cohabitation is an important factor and is strongly related to receiving social assistance. Apparently, it has an important effect on structural state dependence as well. Being unemployed have a negative effect on the size of structural state dependence, and the size of this effect is about the same as for the Swedish-born. Another important factor for the foreign-born as opposed to the Swedish-born is the size of the social assistance norm. If the norm is increasing in the present period, then the size of the structural state dependence is also increasing, and therefore the persistence of social assistance is strengthened. This effect could not be found for the Swedish-born.

Country of origin is another factor that could potentially be of importance for any state dependence. However, only small effects could be found and only the group from Eastern Europe shows a significant increased effect. Somewhat surprisingly, we found no increased effect of being from a refugee country.

To further analyze the behavior and size of structural state dependence in welfare participation, we include more lags to investigate how many years into the future the experience of social assistance affects the likelihood of receiving social assistance. Table 5 includes the estimated coefficients and the corresponding marginal effects for those coefficients that were significant when using a third order autoregressive specification. It turns out that the number of lags that were significant is the same for both Swedish-born and foreign-born people. However, the initial year effect is more than three times as large for the foreign-born group. This might be an effect of the generous transfer systems for working age persons who have lost their job or their work capacity, more often Swedish-born than foreign-born. The social assistance is the last income safety net for people with no

Table 5 A third order autoregressive specification of structural state dependence

Period	Swedish-born			Foreign born		
	PE	SE	ME	PE	SE	ME
t-1	0.763[*]	0.092	0.028	1.001[*]	0.076	0.099
t-2	0.450[*]	0.101	0.016	0.253[*]	0.070	0.024
t-3	0.241[*]	0.099	0.009	0.190[*]	0.079	0.021

Note: * indicate significance at the 5 percent level.

work history, more often foreign-born, especially relatively newly-arrived immigrants. During the 1990s, a large number of social assistance recipients are foreign-born who have been admitted to the country as refugees, for humanitarian reasons or as relatives to such persons. It might be that refugees experience more barriers in getting connected to the labor market. Given that the gap in the dependency decreases, and disappears after three years, it suggests that the period with the introduction assistance linked together language learning and training for entering the labor market is too short for the newly-arrived immigrants.

5 Conclusions

Welfare persistency has received attention both in the academic literature as well as in the policy debate. However, in Europe, welfare persistence of newly-arrived immigrants has dominated the policy debate since the end of the 1990's due to the worries raised by the European Union's old member states about potential huge flows of welfare migrants due to the enlargements in 2004 and 2007. We analyze the size and the shape of structural state dependence in social assistance in Sweden for foreign-born and Swedish-born during the 1990s, a time period when the country experienced both an economic crisis and a big inflow of immigrants. However, the sample of immigrants is representative for immigration to Sweden before 1990. The effects were estimated using a dynamic discrete choice model controlling for unobserved heterogeneity and the initial conditions problem. Three parts of the structural state dependence were analyzed.

The first part focused on the estimated size of the structural state dependence within the framework of a first order Markov process as an aggregated measure. We found that the effect is three times as large for foreign-born as it is for Swedish-born. Furthermore, among the explanatory variables included in the specification, structural state dependence accounted for the single largest effect for both Swedish-born and foreign-born with marginal effects of 4.1 and 12.5 percentage points, respectively. Hence, the behavioral response to the experience of social assistance is strong, significant and has long-term consequences, especially among foreign-born.

In the second step of the analysis, we disaggregated the effect with respect to a number of explanatory variables that potentially could be associated with the size of the structural state dependence. For the Swedish-born, surprisingly few observed factors turned out to be significant. Living in a city region and being unemployed had a negative effect on structural state dependence, while average regional welfare duration showed a positive association. For the foreign-born, being unemployed was found to be negatively associated with state dependence, while the size of the social assistance norm, the average regional welfare duration, and age had a positive effect. Country of origin and the number of years in the country of destination are two other important determinants for the likelihood of receiving welfare in general. However, it turns out that they had a very low influence on the state dependence among foreign-born.

The third part of the analysis relaxed the assumption of a first order Markov process and allowed for more lags. Three lags turned out to be significant for both Swedish-born and foreign-born, which means that the increased likelihood of returning to social assistance disappears on the fourth year. The difference in effect between Swedish-born and foreign-born was largest in the first year, and dramatically decreased in size in the second year.

While the marginal effect continued to shrink for the Swedish-born, the size of the marginal effect was about the same after three years as after two at just above 2 percentage points. The size of the marginal effect reduced to a number slightly below 2 percentage points in the following year, but was not significant. Even though the number of significant years (lags) remained the same for Swedish-born and foreign-born, it seems like the persistence was somewhat stronger for the latter group, point estimates being slightly higher.

Hence, we find empirical evidence that part of the social assistance persistence in Sweden for foreign-born and Swedish-born during the 1990s can be attributed to structural factors. However, the structural state dependence was strong in the population only during the first three years, which suggest that some interventions (e.g., the active labor market programs used intensively during the 1990s) were successful in breaking the dependency on social assistance. For foreign-born, there were several interventions aimed to facilitate the transition to labor market and social integration, which might have improved their economic outcomes; e.g., the introduction programs offered to newly--arrived immigrants since the late 1960s focus on language training, education on Swedish society and labor market, and building up skills to search for job and/or start-up their own business.[10]

Our results also imply that for both Swedish- and foreign-born, the observed persistence is a result of innate individual differences which comes from permanent unobserved heterogeneity across individuals. This implies that some individuals have a larger propensity to live on welfare than others. If this is the case, it means that part of the current participation has no structural effect on the future propensity to participate. Therefore, both active labor market programs and anti-discrimination policies of the 1990s potentially helped social assistance receivers to get jobs and leave welfare. Active labor market policies comprise a variety of programs that aim at increasing employment and wages of disadvantaged groups in the labor market (e.g., skilled immigrants with relatively weak knowledge of Swedish language, young or disabled people) or more broadly targeted at those who have work experience but are unemployed, offering them training programs, subsidized employment or self--employment.

Given several decennia of experience in dealing with very heterogeneous and relatively difficult groups of immigrants, Sweden worked out policies that aim to avoid immigrant segregation and speed up the process of assimilation out of welfare. Therefore, policies that promote learning of the Swedish language, introduce the Swedish society, and training in getting contact with the labor market can also be viewed as policies for reducing social assistance receipt among foreign-born. Additional policies aiming to combat discrimination against immigrants in the labor market and to make immigrants more attractive to hire (e.g., by increasing their human capital or by subsidizing their wage cost).

Our results and the institutional settings in Sweden before, during, and after the analyzed period support one of the policy recommendation for active inclusion of immigrants proposed by (Zimmermann et al. 2012); i.e., assisting immigrants in accessing welfare assistance and services, as a temporary form of assistance for people in cases where they are able to work but are unable to find a job. However, in Sweden, the political debate emphasizes more and more the need to help newly-arrived immigrants in working age to get a job as soon as possible. Therefore, it is desirable that the duration of the period with the introduction assistance, which is covering language learning and training for entering the labor market, should be designed to end when the immigrant started to access employment.

Our results show that even though Sweden received a large number of immigrants during a period of economic crisis, the group of foreign-born was not significantly different from the Swedish-born when we compare their social assistance dependency: there are no significant effects on the fourth year after the first welfare experience. This suggest that the active labor market programs used during the 1990s helped working age people to find ways out of welfare regardless if they were Swedish-born or not. Therefore, rolling back the welfare state as well as admitting fewer immigrants are not politically feasible measures to reduce the disparity in social assistance receipt between foreign-born and Swedish-born. Sweden's immigration policy of 2000's is more labor migrant friendly and is certain to attract more skilled worker than in the previous decades, including the 1990s, analyzed in paper. Therefore, the most important, or the only, concern for the policy makers should be to improve the existing (and/or design new) programs that make possible for the new arrived immigrants to work as soon as possible. This requires a new emphasis on policies to combat discrimination and ensure equality of opportunity, but also on policies to increase incentives of employing new arrived immigrants.

Endnotes

[1] For more details about the institutional settings of the welfare system and migration in Sweden during the 1990s, see Bergmark and Minas (2006), which we shortly summarize in the next paragraph.

[2] In the late 1980s, special allowances for asylum seekers replaced social assistance, asylum seekers had the right to an assistance that guaranteed an acceptable standard of living, the minimum laid down in the Social Assistance Act. In 1992, the government lowered asylum seekers' allowances by 10% (Sainsbury, 2006).

[3] More information can be found at the Swedish National Data Service's home page: http://snd.gu.se/en.

[4] The GHK recursive simulator, (Geweke 1991; Hajivasssiliou and McFadden 1990; and Keane 1990, 1994) is based on the observation that the choice probabilities in the multinomial probit model can be written as a sequence of conditional probabilities that may be simulated recursively. This simulator is of particular interest because it has been shown in a rather exhaustive study of many alternative probability simulators by Hajivassiliou, McFadden, and Ruud (1996) to be the most accurate and reliable simulator of all those considered (see also Gouriéroux and Monfort 1993; and Keane,1993, which focus explicitly on applications of simulation methods to panel data). An additional beneficial feature of the GHK simulator is that it is rather easy to implement for this kind of model.

[5] The simulated likelihood is a continuous and differentiable function of the parameters to be estimated. In addition, the simulated likelihood function is an unbiased estimator of the likelihood function (Börsch-Supan and Hajivassiliou 1993). However, in order to receive consistency in the simulated estimation, the number of simulated draws R has to be large enough. Under certain regularity conditions, a sufficient rate is $R/\sqrt{N} \rightarrow \infty$ as $N \rightarrow \infty$ in order to obtain consistent, asymptotically normal and efficient estimates (Hajivassiliou and Ruud, 1994).

[6] See Orme (2001) and Wooldridge (2005) for alternative methods.

[7] Specification (1) corresponds to $\rho_{t,t+k} = \rho^k$, and (2) corresponds to $\rho_{t,t+k} = \sigma_\alpha^2 / (1 + \sigma_\alpha^2)$.

[8] When testing for this restriction, it turned out not to be a problem, since any deviation from homoscedasticity was absorbed by the remaining free components of the covariance matrix. The information matrix is approximated using the BHHH method.

[9] 10,000 SEK corresponds to 1,075 EUR (January 2012).

[10] Andersson Joona and Nekby (2012) conclude that more intensive counseling and coaching as well as more flexible language training may foster transitions into regular employment for newly--arrived immigrants. See Andersson Joona and Nekby (2012) for more details on introduction programs.

[11] The marginal effects calculated here are based on the full model and represent the mean marginal effects over time and individuals: $\frac{1}{NT}\sum_{i=1}^{N}\sum_{t=1}^{T}\frac{\partial}{\partial x_1}\Phi^*(y_{it}=1|x)$, with $\Phi^*(y_{it}=1|x)$ being the marginal probability function for period t, where all other time periods have been integrated out. For simplicity reasons, the discrete variables have all been treated as being continuous. However, the continuous treatment is believed to be a good approximation of the discrete counterpart. The derivatives are calculated using a finite difference formula.

[12] Categories: Nordic (Denmark, Finland, Norway, Iceland), Western Europe (Germany, France, Benelux, Switzerland, Austria, UK, Ireland), Eastern Europe (Poland, Hungary, Albania, Bulgaria, Romania, Czechoslovakia, countries in the former Soviet Union), Southern Europe (Greece, Yugoslavia, Andorra, Italy, Portugal, San Marino, Spain, the Vatican state), Middle East (Arab countries, Iraq, Iran, Turkey), and the rest of the world.

[13] Refugee countries according to the Swedish Immigration Board: Afghanistan, Bangladesh, Bosnia, Bulgaria, Chile, Cuba, China, Croatia, Ethiopia, India, Iran, Iraq, Sri Lanka, Lebanon, Moldavia, Pakistan, Peru, Poland, Romania, Russia, other states of the former Soviet Union, Somalia, Syria, Togo, Turkey, Ukraine, Uganda, Vietnam, and Yugoslavia.

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