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ABSTRACT

Immigrant Participation in Social Assistance Programs*

The share of foreigners in the German social assistance program exceeds their population share and continues to grow. This study tests whether higher foreigner welfare dependence is due to foreign-native differences in behavior as opposed to exogenous characteristics. The determinants of welfare dependence are analyzed using data from the German Socioeconomic Panel (1984-1996). Panel attrition and welfare dependence processes are modelled jointly. The difference in aggregate welfare dependence appears to be due to characteristics, where the household head's labor market status and single parent status are central, with significant differences in the response rates of German and foreign households to given characteristics. The controls for attrition have strong effects on the estimation and simulation results.

JEL Classification: I38, J61
Keywords: immigration, social assistance, welfare dependence

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1. Introduction

Germany has been an immigration country since World War II. The share of foreign-born individuals in the German population increased from 1.0 percent in 1951 to 8.9 percent in 1996. Existing eonomic studies of immigration to Germany have focused on its labor market effects (e.g. Schmidt, 1995, Velling, 1995, or Bauer, 1998), which represents only a partial picture of the economic consequences of immigration. This study adds a further dimension by analysing the participation of foreigners in government transfer programs and in the German social assistance program in particular. Since 1980 foreigners have participated to a higher degree in this transfer program than their share in the population might warrant. While foreigners made up about 8.9 percent of the German population and about 9.8 percent of the labor force in 1996, they accounted for 23.5 percent of the social assistance recipients (Plaschke, 1998). The probability of welfare recipiency among households headed by foreign-born individuals exceeded that of the native population for the last two decades.

This raises interesting questions about the welfare dependence of German and foreign households which are addressed here: First it is asked whether the high welfare dependence of foreigners in Germany is due to their characteristics or whether it is caused by different behaviors in response to the availability of public transfers. If higher welfare dependence is due to behavioral differences, a revision of eligibility regulations might be warranted. If however the characteristics of foreigners are the central cause of welfare dependence this may call for a reconsideration of German immigration policies. Next, it is analysed whether the welfare related behavior of foreigners undergoes adjustments over their period of residence in Germany. Such assimilation effects were found in the United States and Canada (see e.g. Borjas and Trejo, 1991, Baker and Benjamin, 1995, or Borjas and Hilton, 1996). Finally, we investigate the central correlates of welfare dependence and evaluate how their effects differ for native and foreign households.

The analysis of foreigner welfare dependence is of considerable policy significance: First, expenditures on the German welfare program now account for 1.5 percent of gross domestic product and therefore constitute a significant fiscal burden. Public transfer programs of this magnitude need to be analysed to understand their mechanisms and determinants. Second, if one subgroup of the population is more dependent on welfare than the population as a whole, this might call for two sets of responses: Either one could try to justify additional eligibility restrictions on this group, or one could conclude that the social assistance administration does not meet its obligation to assist these recipients in their return to economic independence. If the support mechanisms do not work for certain parts of the recipient population this may call for revisions of the program's administration. Third and finally, an analysis of the social assistance dependence of foreigners in Germany provides an opportunity to indirectly evaluate past immigration policies. If it remains true that foreigners are more likely to depend on welfare than natives, and if this is not tolerated politically, this finding might call for a change in immigration rules or enforced time limitations on residence permits.

The evidence on immigrant welfare dependence from Canada and the United States supports an immigration policy, which is at least in part based on immigrants' human capital, as it is the case for Canada. While foreigners in Canada are initially less likely to receive welfare than natives (Baker and Benjamin, 1995), immigrants to the United States appear to have dependency rates above those of natives (Borjas and Trejo, 1991). Existing studies of immigrants' welfare dependence focus on the assimilation of foreigners in their host country and on how their welfare participation behavior evolves over time (see also Blau, 1984, Borjas and Hilton, 1996, Jensen, 1988). German economists have devoted little attention to the empirical study of welfare dependence. Büchel et al. (1996) analyse its determinants using a cross section of data from the German Socioeconomic Panel. They compare various groups of foreigners such as asylum seekers, guest-workers, or ethnic Germans from Eastern Europe, and conclude

that the groups behave quite heterogeneously. Most of the German welfare literature is sociological and focuses on dynamic poverty research and the causality and duration of welfare dependence (see e.g. Leisering and Voges, 1992 or Buhr and Weber, 1996 and the studies cited there).

This study estimates reduced form equations for the participation of German and foreign households in social assistance programs. Given that panel studies on low income populations are prone to biases because of nonrandom panel attrition, this issue is carefully controlled for. The results indicate that the observed difference in welfare recipiency between the German and foreign population is due to the different characteristics of the households. The estimations yield that the longer the expected duration of benefit receipt - as proxied by the labor force status of the head of household and the head's disability status - the more likely the household is to receive social assistance. The core behavioral differences between German and foreign households relate to the household structure and labor force participation of the household head.

The next section provides background information about immigration to Germany and about the German social assistance program. Section three explains the conceptual framework of the analysis. Section four describes the data and discusses the empirical methods. Estimation and simulation results are presented in section five before conclusions are drawn in section six.

2. Institutional and Historical Background on Migration and Welfare in Germany

2.1. Immigration to Germany since 1945

The immigration experience of the Federal Republic of Germany can be divided into several distinct phases (Schmidt and Zimmermann, 1992). In the first five years after World War II West Germany had to absorb about eight million refugees from former German territories in the East. The next phase which ended with the construction of the

Berlin Wall in 1961 was characterized by migration from East to West Germany of altogether 2.6 million individuals.

Since the early 1960s through 1973 West Germany pursued an active recruitment policy to attract workers mostly from Italy, Spain, Greece, Turkey, Portugal, and Yugoslavia. Since it was planned for these workers to stay in Germany only temporarily, they were referred to as *guest-workers*. They were predominantly employed in the manufacturing and construction industries, typically in low-skill jobs. In the early seventies many guest-workers brought their families to Germany and fewer than expected returned to their countries of origin. In response to this development and in expectation of increasing unemployment after the first oil price shock, the recruitment policy was stopped in 1973. Between 1961 and 1974 the foreign-born population in West Germany had grown from 0.7 to 4.1 million (Statistisches Bundesamt, 1994). Its numbers continued to grow even after the recruitment stop in 1973 due to the immigration of family members and because of high fertility rates of the foreign population in Germany.

The immigration patterns since 1989 have been dominated by inflows of ethnic Germans, asylum seekers, and refugees.[1] It is reasonable to expect some return migration from among the latter groups. Nevertheless, the number of foreigners in Germany, which by definition does not include ethnic Germans, increased from 4.5 million at the end of 1988 to 7.3 million at the end of 1996. Their share in the population went up by one fifth from 7.3 to 8.9 percent (1988 in West Germany, 1996 in united Germany). Therefore the response of these groups to the availability of public transfer programs has gained increasing fiscal relevance.

[1] By 1993 about 350.000 refugees from Yugoslavia had entered Germany. In 1989 and 1990 massive flows of annually about 400.000 persons moved from East to West Germany. In addition, inflows of ethnic Germans from Eastern Europe and the republics of the former Soviet Union reached annual levels above 375.000 in 1989 and 1990. In response, an annual quota of 220.000 was installed which was filled each year through 1995. The number of asylumseekers reached a maximum of 440.000 in 1992 upon which their entry was restricted (on this see also Figure 1).

2.2 The System of Social Assistance

Basic Principles

The German system of social assistance[2] consists of two parts: general income support and support for special circumstances, such as expenses related to the integration of the handicapped or to elderly care. The purpose of the general income support system is to guarantee that every legal resident in Germany, independent of nationality can lead a 'dignified' life based on a socio-culturally determined minimum income level.[3] Every individual with less than this minimum subsistence income is supported in order to enable the recipient to participate in community life and to regain economic independence.

The income support system provides counselling services, financial benefits, and sometimes support in kind. The financial benefits consist mainly of lump-sum payments which typically do not have to be paid back. Before transfers are made, all income sources (including other public transfers such as unemployment, and retirement benefits) and, with some exceptions, property items are considered in a means test. Every welfare recipient is obliged to work as far as it is possible. The welfare office is supposed to help recipients reintegrate into the labor force.[4] If a welfare recipient refuses to accept employment, benefits can be cut by up to 25 percent.

Four types of financial benefits are available: Lump-sum standard rate benefits which are paid on a monthly basis, one-time payments, premia on top of the standard rate based on categories of special need (e.g. for the elderly or disabled) and, finally, housing benefits. The standard rate benefits are paid as fixed amounts, adjusted by

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[2] The term social assistance is used synonymously with welfare.

[3] Since November 1993 applicants for political asylum in Germany are no longer covered by social assistance regulations and are instead supported based on a law specific to that group.

[4] For a discussion of the reemployment instruments available to municipalities and their utilization see Lüsebrink (1993) or Hackenberg (1995).

predetermined fractions for each additional household member.[5] The standard rates are determined by state governments to adjust for regional differences in the cost of living. At the end of 1997 the standard rates for household heads varied between a maximum of DM 540 (USD 309) in the states of Baden-Württemberg and Hessia, and DM 514 (USD 294) in Mecklenburg-Vorpommern, Saxony, and Thuringia.

One-time payments are available for situations of special need, e.g. if the household has to move. Since certain groups of recipients incur expenditures above the average, fixed premia on top of standard rates are paid. As such, recipients above age 65, disabled persons, and pregnant women receive another 20 percent of the standard rate and for single parents, or handicapped individuals a premium of 40 or 60 percent of the standard rate is possible. Lastly, recipients of social assistance can and typically do receive support for expenditures related to housing, such as rent or costs of heating.

Social Assistance Regulations for Immigrants

In principle social assistance eligibility is based on residence in Germany (§120 BSHG). The regulations governing social assistance for immigrants to Germany differ by immigrant group. Ethnic Germans as well as East Germans who arrived in West Germany before unification are treated just like West Germans. Until 1994 asylum seekers received benefits under social assistance regulations. Since then they are funded under a separate law and no longer appear in the social assistance statistics. Figure 1 depicts the absolute numbers of inflowing asylum seekers and of foreign welfare recipients. Given that asylum seekers remain on welfare until their cases are decided, Figure 1 shows clearly that this group was responsible for much of the increase in foreign social assistance recipients, prompting the regulatory changes in 1994.

The social assistance regulations for other foreigners including guest-workers is

[5] Since 1990 another 50 percent of the standard rate is paid for children under age 7, another 65 percent for children up to age 14, 90 percent for those aged 15 through 18, and 80 percent for other adults in the household.

complicated by the fact that European and German law overlap, and that German law and legal practice do not fully respect the rules set in several sets of European regulations (Schulte and Trenk-Hinterberger, 1986). In addition, German regulations regarding the residence rights of foreigners underwent a major reform in 1991. Most relevant here is that foreigners without rights to a permanent residence in Germany can lose their right to stay or to get their residence permit prolonged if they depend on social assistance transfers. This practice is contrary to European regulations, in particular with respect to citizens of other European Union members. However, even Turkey as a nonmember signed the *European Convention on Social and Medical Assistance* and as such its citizens are supposed to be treated no different than the citizens of their European host countries. Given that German legal practice does not adhere to European regulations, social assistance receipt in Germany is connected with a risk of expulsion for those foreign individuals, who are not asylum seekers, refugees, or who do not possess permanent residence rights (Schulte and Trenk-Hinterberger, 1986, and Huber, 1991).

Trends in Utilization

Real expenditures on the income support part of social assistance have grown by 17 percent between 1990 and 1996 in the west German states.[6] While per capita expenditures in east German states are below those in the west, the growth rates of East German expenditures are much higher reaching 141 percent between 1991 and 1996. Total expenditures for social assistance (combining general income support and support for special circumstances) as a fraction of GDP increased from .5 percent in 1970 to around 1.5 percent in the early nineties.[7]

Increasing welfare expenditures can be due to rising expenditures per capita and

[6] This provides a lower bound on actual expenditure changes, since asylum seekers are counted in the expenditures of 1990, but are excluded in the statistics after 1994.

[7] For a comparison, the sum of federal and state expenditures on the U.S. welfare programs AFDC, SSI, Medicaid and the Food Stamps increased from 1.86 percent of GDP in 1975 to about 2.5 percent in 1995 (Peter, 1997).

to a growing number of recipients. Between 1991 and 1996 the average nominal standard rate of social assistance benefits grew by 12.1 percent in former West Germany and by 12.96 percent for united Germany. This growth rate stays behind that of average nominal incomes for the employed and for retirees: Net retirement benefts increased by 13.3 percent (former West Germany), net earnings per employee went up by 19.4 percent (united Germany) for the same period.[8] Given a consumer price index increase of 14.1 percent in the considered period, public transfer recipients came out with a real loss. The number of welfare recipients in former West Germany, however, increased vastly from 0.92 million in 1980, to 1.8 in 1990 and 2.4 million in 1996. Thus, between per capita expenditures and utilization, the latter seems to be the more relevant determinant of the expenditure increase.

Finally, it is of interest to take a look at the developments by nationality of welfare recipients (for West Germany) since it changed significantly since the late 1970s (see Figure 2): In 1980 foreign residents made up 8.3 percent of the income support recipients, a fraction that already exceeded their share in the total population of then 7.2 percent. By 1989 the share of foreigners among recipients of income support went up to 23.8 percent and it reached its peak in 1993 with 32.9 percent when foreigners made up about ten percent of the population. The numbers came down in 1994 to 21.6 percent following the new regulations for asylum seekers, but they have been rising since to 25.8 percent in 1996. It is noteworthy that in these statistics ethnic Germans immigrants from eastern Europe are considered as German nationals.

3. Conceptual Framework

The probability of observing a household in receipt of government transfers is determined by two sets of factors: those related to eligibility and those affecting take-up.

[8] The figures on average welfare benefits are taken from Statistisches Bundesamt (1992 and 1996), average retirement benefits are from VDR (1997) and net annual earnings per employee are published in SVR (1997).

Eligibility for social assistance in Germany follows if a household's monthly net income is below its administratively defined need and if the need cannot be met out of property income. Therefore the factors defining eligibility are represented by a households' assets and monthly net income.

The literature on take-up shows that this issue has a decisive impact on observed behaviors: van Oorschot (1994) summarizes that internationally about 20 percent of the eligible households do not claim available benefits. Hauser and Kinstler (1995) report non-take-up of up to 25 percent among foreign clients of a German charity organization. Non-take-up is typically explained as a consequence of (i) misconceptions and ignorance regarding existing transfer programs and (ii) stigma and application costs (see Blundell et al., 1988, Duclos, 1995). If stigma and application costs are fixed and independent of the benefit level, we would expect that individuals with high benefit expectations are more likely to take-up social assistance. In contrast, those for whom benefits only marginally exceed the money value of application costs are less likely to take up their assistance payments. This reasoning was confirmed by the empirical analysis of Blundell et al. (1988) and Duclos (1995). In addition to benefits, a set of household specific characteristics are assumed to affect stigma and application costs and therefore take-up behavior ("physical, psychological, sociological, informational factors affecting the burden of taking up benefits", Duclos, 1995, p.404).

The literature typically considers the following factors: (1) The *structure of a household* indicates need as well as earnings potential. Having more children in a household describes financial need but it might also increase the opportunity cost of the time it takes to go through the application procedures. The more adults are in a household, the higher its earnings potential, where of course mean age and educational level of these adults are important. Generally, households with fewer adults or even single (parent) households are less flexible to handle low income situations and might therefore attach less stigma to the receipt of transfer benefits.

(2) Among the relevant *characteristics of the household head* is age, which might reflect cohort effects in attitudes regarding social assistance. Other age related factors may obfuscate this cohort interpretation, since older individuals are more likely to be disabled and might have reduced earnings potentials. Further controls for the earnings potential of the household head include standard human capital and health measures. These indicate at the same time (3) the *expected duration* of financial need. The longer the expected duration of benefit receipt the less relevant fixed application costs should become in household reasoning. Therefore we would expect a higher propensity of welfare dependence among households with a disabled household head, or with a household head who has left the labor force, since welfare dependence is likely to be more permanent in this scenario.

Finally, one would like to control for (4) the amount of *information on the social assistance program* available to the household. As a measure of ignorance and misconception this variable is hypothesized to be an important determinant of take-up. Indicators of the households' information situation might be the characteristics of its social networks. Since such measures are hard to obtain, we use the size of the city where the household resides as an indicator of application costs and stigma. The anonymity of large cities might reduce stigma effects while their infrastructure somewhat reduces the application costs. The next section describes how the effects of these determinants are evaluated empirically.

4. Data and Empirical Approach

4.1 The Sample

The data are taken from the first thirteen annual waves of the German Socioeconomic Panel (GSOEP, 1984-1996). The GSOEP follows a representative sample of the German population and oversamples the foreign population in West Germany with Turkish, Greek, Yugoslavian, Spanish and Italian household heads. Since

the surveys follow split off households, a number of the individuals who were originally in the German sample are living with foreign household heads and some members of the foreign sample cohabitated at some point with a German household head. In order to clearly identify the nationality of the interviewed household and to maintain the representative character of the dataset only those households from the West German subsample are considered, which have a German household head, and only those foreign households are considered, which have a household head from one of the five originally identified countries.

Households which could not be matched to a household head or which did not respond to the question on social assistance were dropped from the sample. Also, observations with missing values on key variables were censored after the last valid observation. In the end we observe 4,595 German and 1,316 foreign households with valid information on welfare receipt. Pooling over time we obtain 31,917 German and 8,516 foreign household-year observations.

The foreign households in our data represent guestworkers who came to Germany since the early 1960s. Table 1 describes the distribution of the foreign sample across immigration years. The foreigners covered in the data arrived in the period between 1952 and 1993. One third of the foreign households is of Turkish nationality, Italian and Yugoslavian households make up one fifth each and those of Greek and Spanish nationality account for about 12 percent each.

4.2 Descriptive Statistics

The dependent variable of interest is whether any member of a household received social assistance in a given year. The question was asked annually and covered the preceding calendar year. Figure 3 describes the unweighted relative frequency of household welfare dependence over time by subsample. It is apparent that social assistance receipt among the foreign households in our sample increasingly exceeds that

of German households reflecting the overall trend for the foreign population in Germany, presented in Figures 1 and 2. Welfare dependence among foreign households (3.26 percent) exceeds that of German households (2.56 percent) by about 27 percent. Table 2 compares the frequency of welfare dependence for the two subsamples by type of household and by certain characteristics of the household head.

Among German households the risk of welfare dependence is highest for single parent households (5.6 times the sample average) and for households with unemployed heads (5.4 times the sample average). In comparison, foreign single parent households reach a welfare risk of about twice the sample average. Also in the foreign sample, households with unemployed household heads and those with out of the labor force heads are vastly more likely to depend on welfare than the sample average. Among German couples with children we observe a below average risk of welfare dependence. Except for couples with children above age 16 the same holds true for foreign families. The share of families with children among the foreign households is much higher (66 percent) than in the German sample (40 percent, see figures in parentheses in Table 2). The risk of welfare dependence is high in the more than two generation households, and the "other" category, however, these households make up only small fractions of the samples. Overall, couples without children are at the lowest risk of welfare dependence.

The chances of welfare dependence are more than four times larger in the German subsample if the household head is female rather than male. That effect is not as pronounced in the foreign subsample. Welfare dependence is highest for very young households, it decreases in mid-age, and increases again for household heads around retirement age. Here foreign households with heads above age 54 suffer a much higher risk of welfare dependence than their German counterparts. The risk of welfare dependence is smallest in households where the head is still employed. The share of welfare recipients in the foreign out of the labor force population far exceeds that of Germans. For both subsamples the risk of welfare dependence is highest when the

household head is unemployed.

The explanatory variables considered in the analysis are chosen based on the conceptual framework discussed above. Table 3 presents definitions and summary statistics by subsample (see the columns of nonattriting households). The two subsamples differ in a number of characteristics. Foreign households are considerably less likely to live in owned property and their households are on average larger than those of Germans. Only 11 percent of foreign households are single person households, compared to about one fourth of German households. Heads of foreign households are somewhat younger, and are less likely to be female or handicapped compared to their German counterparts. While about one third of German heads of households are out of the labor force this holds for only 9 percent of the foreign heads. However, the latter are more than twice as likely to be unemployed than German household heads. Finally, foreign households are on average more likely to reside in large cities.

4.3 Empirical Approach

The objectives of the analysis are (i) to investigate whether exogenous characteristics or behavioral factors are behind the higher welfare dependence of foreign compared to German households, (ii) to evaluate whether assimilation in welfare dependence occurs, i.e. whether foreign households' dependence varies over time, and (iii) to describe the determinants of social assistance receipt and the differences in their impacts for the foreign and native subsamples.

We test for the first issue of behavior vs. characteristics as determinants of high foreign welfare dependence by estimating a reduced form logit model of welfare dependence. The model controls for the characteristics discussed in section 3 above, and contains an indicator variable for foreign households. If the indicator yields a negative coefficient estimate, this is interpreted as evidence that a foreign household is no more likely to receive social assistance once its characteristics are controlled for. In that case

it is not plausible to argue that it is behavior which causes the higher observed welfare dependence among foreign households. A positive coefficient would suggest that foreigners are more likely to depend on welfare even controlling for characteristics. This differential might then be due to behavioral differences.

To address the issue of assimilation and to analyse the relative impact of certain characteristics for the welfare dependence of foreigners and Germans an extended estimation approach is pursued: A fully interacted model is estimated jointly for both samples which additionally controls for variables that are specific to the foreign population. Among them are foreigner specific human capital indicators, the year of immigration, as well as indicators for the households' nationality. The considered human capital measures are the household head's language abilities, which have been shown to significantly affect earnings (Dustmann, 1994). Controlling for the year of immigration will inform on the effect of assimilation on welfare dependence. The group of country indicators helps evaluate country of origin differences in the propensity to depend on social assistance.[9] An evaluation of the interaction term effects indicates differences in the behavioral response to household characteristics between German and foreign households. Thus, the first step of the analysis provides an overall evaluation of the relevance of behavioral versus characteristics effects in the explanation of high foreign welfare dependence, while the second step looks at the relevance of given characteristics in greater detail.

4.4 The Problem of Panel Attrition

Given that we use panel data on household observations two problems can be addressed that remain uncorrected in studies using cross-section data, unobserved

[9] Borjas and Trejo (1993) and Bean et al. (1997) found strong source country effects on the variance of welfare recipiency rates across national origin groups. Similar differences by country of origin were found in studies on immigrant earnings and return migration (Schmidt, 1992, 1994).

heterogeneities and endogenous panel attrition. Unobserved heterogeneity may consist of household specific factors that influence welfare dependence but are not observed in the data. Examples are the sensitivity of a household to welfare stigma, or the unobserved ability and work motivation of its members. To control for the impact of such factors a random effects estimator is applied.

Sample attrition is an important issue in the panel data based study of income poverty and social assistance. The literature on attrition shows that those at the tails of the income distribution are particularly likely to drop out of the sample (see e.g. MaCurdy and Mroz, 1997, Lillard et al., 1986). Rendtel (1990) found for the GSOEP that only the attrition process of the early panel years was correlated with the households' socioeconomic status. Table 4 presents the probability of welfare dependence by subsequent interview status. It is readily apparent that welfare dependence in households which continued to be interviewed with 2.64 percent is below that of households which later left the sample for various reasons (3.06 percent).[10] Also, the last column of Table 3 presents descriptive statistics for the sample of households which attrited in the next period. A comparison with the first column indicates that the sample of attriters is less likely to own a home, to have high levels of education both for the head of household and for the average household member, that they are more likely to be a female headed single parent household and to be unemployed. This suggests that the sample of attriting household is not randomly drawn from the population. In a situation like this the estimation results can be biased and inconsistent unless the endogenous selection is controlled for.

Therefore a selection equation is estimated jointly with the welfare model. This procedure follows Ridder (1990), who assumes that the latent process (A^*) driving sample attrition is determined by characteristics of the household (chh), the interview situation (Int), and by an unobserved factor (μ), which is weighted by a coefficient ($?^A$):

[10] The attrition measure combines situations where the interview was conducted only partially, where the respondent was not ready to answer, and where nobody in the household responded to the call of the interviewer.

$$A^{*}_{i,t} = \beta_1 chh_{i,t} + \beta_2 Int_{i,t} + \varepsilon^{A} my_i + \varepsilon^{A}_{1,i,t}$$

$$A_{i,t} = 1 \text{ if } A^{*}_{i,t} > 0$$
$$A_{i,t} = 0 \text{ otherwise}$$

$\beta_\cdot$ are coefficients and ε^{A} represents a random error. The attrition indicator $A_{i,t}$ is coded one if the household attrited from the sample in year t+2.[11] Ridder (1990) allows the individual effects (μ_i) as well as the random errors to be correlated between the attrition equation and the model of interest. The endogeneity problem can then be solved by jointly estimating the attrition and social assistance equations while appropriately controlling for the distribution of the unobserved factors (μ_i). The equation describing the latent household specific propensity to claim welfare benefits, S^{*}, can be represented as

$$S^{*}_{i,t} = \alpha_1 hs_{i,t} + \alpha_2 hh_{i,t} + \alpha_3 dur_{i,t} + \alpha_4 i_{i,t} + \alpha_5 for_{i,t} + \varepsilon^{S} my_i + \varepsilon^{S}_{i,t}$$

$$S_{i,t} = 1 \text{ if } S^{*}_{i,t} > 0$$
$$S_{i,t} = 0 \text{ otherwise}$$

where $\alpha_\cdot$ are coefficients, *hs*, *hh*, *dur*, *i*, and *for* represent the groups of explanatory variables discussed above for household i in period t[12], ε^{S} is the coefficient weight on the unobserved heterogeneity μ and ε^{S} represents a random error.

In contrast to Ridder's approach I do not assume a normal distribution of the unobserved component μ. Monte Carlo evaluations of the class of semiparametric estimators indicate that they often dominate incorrectly imposed parametric assumptions on disturbances in terms of bias and mean square error (Mroz and Guilkey, 1995). Therefore a discrete factor approximation method is applied. For greater generality and

[11] Since welfare status is surveyed retrospectively in year t+1 for calendar year t we need the observation of year t+2 to determine the attrition status that is relevant for welfare information on year t+1.

[12] *hs* stands for the effects of the household structure, *hh* represents variables describing the household head, *dur* contains indicators of welfare spell duration, *i* summarizes indicators of the household information status and *for* are either the foreigner indicator in the first analysis step or the foreigner specific variables in the second analysis step.

flexibility the unobserved heterogeneity is represented by two independently estimated factors, such that

$$?^{j}\ my_{i}\ '\ ?^{j}_{1}\ my_{1,i}\ \%\ ?^{j}_{2}\ my_{2,i},\qquad \text{with } j\ '\ A,S$$

The individual contribution to the likelihood function, which is estimated after integrating out over the distribution of of μ_1 and μ_2 , is now

$$L_{i}(my_{1,i}, my_{2,i})\ '\ \mathop{\mathbf{k}}_{t}\ \Pr(A^{(}_{i,t} > 0 \mid my_{1,i}, my_{2,i})\ \Pr(S^{(}_{i,t} > 0 \mid my_{1,i}, my_{2,i})$$

5. Estimation and Simulation Results

Step 1: Behavior vs. Characteristics

First the analysis evaluates the average probability of welfare receipt for German and foreign households after controlling for pertinent characteristics and endogenous attrition. Table 5 presents the estimation results that were obtained with and without controls. The specification and estimation results of the attrition equation are presented in the Appendix. A likelihood ratio test shows that the attrition and heterogeneity controls significantly improve the fit of the model. The estimated coefficients respond strongly to the addition of the attrition control, with some coefficients differing by up to a factor three between the models.

Since the impact of the explanatory variables will be discussed below, the focus here is on the effect of the foreigner indicator. The coefficient of this measure is negative, a result which differs from the observation that foreign households are *more* likely to be observed receiving social assistance. The negative coefficient indicates that once we control for characteristics, foreign households are less likely to receive social assistance than their German counterparts. This suggests that the higher average welfare dependence of foreign households is indeed due to these households' characteristics as opposed to their behavioral response to the availability of public transfers.

Step 2: Detailed Controls for Welfare Determinants

Based on the estimation results in Table 6 we can evaluate the differences in behavioral responses to given characteristics across subsamples. The specifications in Tables 5 and 6 differ by the consideration of a vector of interaction terms and a vector of foreigner specific variables including detailed nationality controls.[13]

Again, the controls for attrition (for the estimation result see the Appendix) and unobserved heterogeneity significantly improve the fit of the estimated model.[14] We find a number of substantive changes in the coefficient estimates and simulation results (cf. Table 7). Overall the control caused a decline in the simulated effects for German and an increase in the effects for foreign households. This asymmetry is surprising given that the risk of attrition is about equally distributed across the two subsamples (8.67 percent of German and 10.35 percent of foreign households attrit from the panel, cf. Table 4), but it demonstrates that the results would be strongly biased if the control were omitted.

Overall, the estimated effects accord well with the theoretical predictions discussed in section 3 above. In order to gauge the size of each variables' effect, the following simulations were performed: The probability of welfare dependence was predicted for each observation, after integrating out over the unobserved heterogeneity distribution. The average dependency ratios were calculated first for the base case and again after changing the values of the explanatory variables. Dichotomous indicators were set first to zero and then to one, and continuous variables were set to one standard deviation above and below their sample mean. The difference between the two predicted probabilities over the base case probability yielded each variables' simulated effect, which is presented in Table 7.

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[13] The coefficient estimates on these additional variables are jointly statistically significant. An estimation restricting the parameters to zero can be rejected at the 99 percent confidence level, given that the estimation yields a likelihood value of 17,019.8 with 45 parameters compared to the results presented in Table 6.

[14] The hypothesis that the 8 additional parameters controlling for attrition and unobserved heterogeneity are jointly equal to zero is rejected at the 99 percent confidence level. The restricted model (57 parameters) obtains a likelihood value of -17,836.35, yielding a likelihood ratio test statistic of 1,733.48 with 8 degrees of freedom.

When evaluating the estimation and simulation results on the effects labelled *household structure* we observe that households living in owned property are significantly less likely to receive welfare: A German household who lives in owned property has a 60 percent lower probability of depending on welfare than a household who lives in a rented appartment. The effect is even more sizeable for foreign households. This negative correlation of the wealth proxy with welfare dependence supports the hypothesis that households with low benefit expectations are less likely to claim welfare, as also evidenced by Blundell et al. (1988) and Duclos (1995).

Having many young children or a large number of adults in the household increases the risk of welfare dependence. Apparently children's effect on financial need exceeds the heightened opportunity cost of going through the application procedures when there are children to care for. This effect is significantly smaller for foreign compared to German households: Having a first child increases the chances of welfare dependence by 45 percent for German and by 13 percent for foreign households, which suggests a closer correlation of the welfare risk with the number of offsprings for German than for foreign households.

The positive effect of the number of adults in the household on the welfare risk of both subsamples is surprising. It might reflect the oddities of the small group of more than 2 generation households, which have an above average welfare risk (Table 2) or it might reflect that grown up children are more likely to remain in the parent household if they are not able to earn their own living. Given the well established earnings correlation across generations this rationalizes higher welfare dependence in households with a larger number of adults.

The average age of adult household members has a significant and strong positive effect on the welfare dependence of foreign households, indicating that households with an average age of 60 years are about 1.5 times as likely to depend on welfare than

households aged 30. The welfare relevance of both, average age and average education level differs significantly between the two subsamples. Surprisingly, a higher level of education is correlated with higher welfare dependence for the foreign subsample, which is difficult to rationalize. The negative effect for the German sample indicates the effects on the subsamples' earnings potential.

Even though we observed a higher propensity of social assistance receipt for German single person households (cf. Table 2), the estimated effect is not statistically significant. The simulations yield an 18 percent higher welfare risk, which remains even below the effect on foreign households. This effect is strongly affected by the control for attrition: Table 7 shows that the simulated effects declined by over 70 percent (from 64.7 to 18.09) after attrition controls were introduced. The characteristic of being a single parent household has a large and statistically significant coefficent and yields a sizeable impact on the risk of welfare dependence. It more than doubles the risk of depending on social assistance for both samples.

The estimated effect of the *household head*'s age is statistically significant, has a convex curvature and does not seem to differ greatly across the two subsamples. The simulations yield a decrease in the risk of welfare receipt for an aging household with a steeper gradient for German households. Having a female head of household significantly increases the risk of welfare recipiency by about 50 percent for the German and 30 percent for the foreign sample.

From among the two human capital type indicators, health satisfaction and years of schooling, only the first has an impact which is significantly different from zero: The higher the household head's health satisfaction the less likely the household is to depend on welfare (the variable health satisfaction is coded 10 for excellent, and 0 for poor health). While its coefficient is not estimated precisely, the household head's schooling has a strong impact reducing the welfare risk of the foreign sample. For the German

sample the simulated effect is close to zero, which may be due to the control for the household's average schooling.

The coefficients on the indicators of the *expected duration* of welfare dependence confirm our hypotheses: Households who are unlikely to improve their income situation in the near future, such as those with heads who are handicapped or not employed are more likely to be observed receiving social assistance payments. Only the effect of a handicap is imprecisely estimated, while the effects of labor force status are big for German and even larger for foreign households. The welfare risk for a foreign household more than triples if the household head is unemployed or out of the labor force. For German households the risk at least doubles.

Finally we controlled for the citysize in order to approximate the stigma and *information effects* which might lead to higher welfare dependence in larger cities. These expectations are clearly confirmed by the estimated coefficients and simulation results. Living in a small town is correlated with lower and living in a large city with higher welfare dependence. The effects are negligible for the German, but significant for the foreign subsample.

The extended specification described in Table 6 controls for a number of variables that are relevant only for the foreign sample. Of particular interest is the year of immigration. Its effect indicates the relevance of assimilation processes, which have been much discussed in the literature on the economic impact of immigrants in North America. This analysis shows that assimilation processes do not play a role in the determination of welfare dependence in Germany: The coefficient estimate is statistically insignificant and the simulated effects are very small. Surprisingly, also the indicators of language capacity, i.e. the fluencey of speaking and writing in German, have little explanatory power in our model. While the simulated effect of the speaking variable indicates that poor language

ability is correlated with a higher risk of welfare dependence, the effect of poor writing is contrary to expectations.

The nationality indicators compare the risk for each country group to that of a German household. The indicators are precisely estimated and the simulated effects are negative and surprisingly large. This confirms the findings from Table 5, i.e. that given controls for all explanatory factors - here allowing for subsample-specific coefficients - the welfare risk of foreign households is below that of a comparable German household. At first sight the risk of welfare dependence appears to be highest among Spanish nationals and lowest among Turks, which differs from the simple counts presented in Table 1(b). However the hypothesis that the nationality coefficients are identical cannot be rejected; thus we find a significant difference between German and foreign households but not between different foreign nationalities.

A comparison of the variables' effects on the two subsamples yields statistically significant differences for the effects of the number of children in the household, the average age and schooling of household members, the labor force status of the household head, and the impact of living in a large city (Table 6). When comparing the simulation results for the samples, the largest absolute differences in the simulated effects are found with respect to the average characteristics of adult household members, the labor force status of the household head and the size of the city where the household resides: The simulated effect of the explanatory variable on the risk of welfare dependence differs by up to 150 percentage points between the subsamples.

Overall it appears that welfare dependence for German and foreign households follows distinct patterns. We find evidence for this with respect to the number of children, the risks related to ageing and health, and most clearly with respect to the financial consequences of unemployment and leaving the labor force.

6. Conclusions

In view of the steadily increasing share of foreigners among social assistance recipients in Germany this study asked (i) whether the different welfare dependence of foreigners is due to their characteristics as opposed to behaviors such as benefit take-up, (ii) we investigated the relevance of assimilation for welfare dependence and (iii) analysed the determinants of welfare dependence and their differences across the German and foreign subsample.

The estimations were performed on a panel of 4,595 German and 1,316 foreign households with valid measures of welfare dependence. The foreign households represent guest-workers which entered Germany since the early 60s from Turkey, Italy, Yugoslavia, Spain, and Greece. The probability of welfare dependence among foreign households exceeds that of German households by more than 25 percent. The controls for unobserved heterogeneity and panel attrition significantly improve the model fit and have large impacts on the estimated coefficients and simulation results.

The estimation yielded as a first result that foreigner households are less likely to depend on welfare, once exogenous characteristics are accounted for. Among the explanatory factors the most sizeable influences on the risk of welfare dependence are related to the household heads' labor force status, and to whether a single parent household is concerned. We do not find assimilation effects in foreign households' welfare dependence, which is contrary to results in the literature on immigrant welfare receipt in the the U.S. and Canada. Instead we discover significant differences in the effect of given explanatory variables on German and foreign households' welfare dependence. As such, the welfare response to the labor force dropout of the household head is much stronger in the foreign compared to the German sample. Based on the size of the simulated effects, the labor force status appears to be the key factor explaining the overall development of welfare dependence in Germany, as well as the difference in social assistance receipt for the subsamples: Afterall relative to their share in the

population foreigners are also overrepresented among the unemployed, of which they made up 17 percent in 1996.

In the motivation to this study two policy consequences of the behavior vs. characteristics question were pointed out: If high foreign welfare dependence were due to different behaviors it might be appropriate to change eligibility rules in order to reduce social assistance expenditures on this population group. However, since high welfare dependence of foreign households in Germany is based on their characteristics as opposed to behavior, this policy conclusion does not seem to be warranted by the results. Instead the necessary policy initiatives in the short run must address the main determinants of welfare dependence, such as high unemployment and poor human capital endowment of the household heads. In the long run it might be necessary to revise immigration policy towards a more human capital based approach.

However, as Simon (1996) pointed out, expenditures on the social assistance program are but one category of government outlays for immigrants and immigration policy needs to be designed in view of this groups' contribution to the public coffers as well.

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Table 1 (a) Distribution of the Foreign Sample by Immigration Year

Immigration Year	Number of Observations	Share of Observations (in %)
before 1960	177	2.08
1960-64	1627	19.10
1965-69	2395	28.12
1970-74	3245	38.10
1975-79	694	8.15
1980-84	276	3.24
after 1985	102	1.20
Total	8516	100.00

(b) Average Immigration Year by Citizenship

Citizenship	Average Immigration Year	Average Welfare Dependence
Greece	1966.5	2.96
Spain	1966.8	2.63
Italy	1967.9	2.59
Yugoslavia	1969.9	2.25
Turkey	1971.7	4.68
Total	1969.3	3.26

Table 2 Observed Probability of Welfare Dependence (in percent)

	All Households	German	Foreign
Total	2.71	2.56	3.26
Type of household			
Single Person	2.92 (21.68)	2.93 (24.48)	2.81 (11.24)
Couple no children	1.13 (25.40)	0.92 (28.30)	2.65 (14.57)
Single Parent	13.32 (4.77)	14.34 (5.11)	7.74 (3.47)
Couple, children under 16	2.26 (25.55)	2.05 (22.61)	2.75 (36.53)
Couple, children over 16	2.18 (12.71)	1.32 (12.35)	4.99 (14.07)
Couple, children above and below 16	2.21 (7.62)	2.23 (5.47)	2.17 (15.64)
More than 2 generations	4.10 (1.63)	4.15 (0.98)	4.05 (4.05)
Other	10.42 (0.64)	9.05 (0.69)	18.42 (0.44)
Head of Household			
Male	1.76 (76.63)	1.33 (73.06)	3.04 (89.98)
Female	5.84 (23.37)	5.90 (26.94)	5.25 (10.02)
Age < 25	5.94 (4.29)	6.02 (4.32)	5.60 (4.17)
Age 25 - 39	2.85 (30.84)	3.07 (31.03)	2.02 (30.14)
Age 40 - 54	1.99 (32.65)	1.79 (28.53)	2.43 (48.02)
Age > 54	2.88 (32.22)	2.32 (36.12)	7.08 (17.67)
Employment Status of Head of Household			
Fulltime	0.79 (65.16)	0.82 (60.86)	0.69 (81.22)
Parttime	3.10 (2.63)	3.14 (3.10)	2.56 (0.91)
Out of the Labor Force	5.35 (26.21)	4.60 (30.73)	14.52 (9.34)
Unemployed	14.71 (4.47)	13.73 (3.52)	16.33 (8.02)

Note: Figures represent unweighted share of households with given characteristic who receive welfare. In parentheses fraction of households with given characteristic in the relevant population.

Table 3 Descriptive Statistics

	All Households	German Households	Foreign
Household receives welfare (0/1)	.027 (.162)	.025 (.158)	.032 (.177)
Owner : Household owns house or flat (0/1)	.368 (.482)	.445 (.497)	.079 (.270)
Number of children under 16 in household	.648 (.978)	.525 (.878)	1.105 (1.179)
Number of adults in household	2.099 (.931)	2.007 (.863)	2.443 (1.081)
Avg. age of adult household members	44.911 (16.390)	46.259 (17.282)	39.860 (11.128)
Avg. years of schooling of adult hh. members	11.099 (2.353)	11.436 (2.338)	9.840 (1.947)
Houshold type: One person (0/1)	.217 (.412)	.245 (.430)	.112 (.316)
Househ. type: Single parent with child(ren) (0/1)	.048 (.213)	.051 (.220)	.035 (.183)
Head of household: Age	4.762 (1.584)	4.865 (1.676)	4.378 (1.096)
Head of household: Female (0/1)	.234 (.423)	.269 (.444)	.100 (.300)
Head of househ.: Health satisfaction (coded 0-10)	6.645 (2.404)	6.619 (2.378)	6.739 (2.496)
Head of household: Years of schooling	11.164 (2.441)	11.515 (2.411)	9.853 (2.081)
Head of household: Handicapped (0/1)	.214 (.410)	.228 (.420)	.159 (.366)
Head of household: Out of the labor force (0/1)	.262 (.440)	.307 (.461)	.093 (.291)
Head of household:Unemployed (0/1)	.045 (.207)	.035 (.184)	.081 (.272)
City with less than 20,000 inhabitants (0/1)	.121 (.326)	.136 (.342)	.065 (.246)
City with more than 100,000 inhabitants (0/1)	.375 (.484)	.367 (.482)	.406 (.491)
Number of Households	40,433	31,917	8,516

Note: 1. Presented are sample means and in parentheses standard deviations.
2. Since welfare receipt is coded based on survey in subsequent year, no information is available for attriting households.

Table 4 Probability of Welfare Dependence in Period t by Interview Status in Period t+2

(in percent)

	All Households	**German**	**Foreign**
Interview realized	2.64 (83.39)	2.48 (83.70)	3.24 (82.26)
Household attrited	3.06 (9.03)	3.07 (8.67)	3.06 (10.35)
Household moved abroad	3.03 (0.41)	0.00 (0.07)	3.50 (1.68)
Household died / household dissolved	5.77 (0.52)	5.37 (0.64)	33.33 (0.0004)
Household not found	20.00 (0.04)	25.00 (0.03)	14.29 (0.08)
Status unknown since last interview year (t=1995)	2.81 (6.61)	2.64 (6.88)	3.56 (5.60)
Overall welfare dependence independent of status	2.71	2.56	3.26
Number of Households	40,433	31,917	8,516

Note: In parentheses fraction of all housholds (independent of welfare receipt) in category.

Table 5 Estimation Results

	With Attrition Control		No Attrition Control	
	Estimated Coefficients	Standard Errors	Estimated Coefficients	Standard Errors
Houshold Structure				
Owner : Household owns house or flat	-1.215 **	.198	-1.078 **	.107
No. of children under 16 in household	.532 **	.072	.397 **	.035
No. of adults in houshold	.244 **	.093	.219 **	.056
Avg. age of adult household members	.034 **	.013	.013 **	.007
Avg. schooling of adult hh. members	-.160	.107	-.195 **	.066
Houshold type: One person	.091	.226	.389 **	.132
Household type: Single parent	1.614 **	.241	1.497 **	.131
Characteristics of Household Head				
Head of household: Age	-1.264 **	.288	-.357 **	.151
Head of household: Age squared	.072 **	.027	.003	.014
Head of household: Female	.495 *	.201	.364 **	.099
Head of household: Health satisfaction	-.115 **	.021	-.128 **	.013
Head of household: Years of schooling	-.087	.105	.010	.064
Expected Duration of Welfare Receipt				
Head of household: Handicapped	.003	.122	.184 **	.085
Head of household: Out of the labor force	1.992 **	.158	2.034 **	.096
Head of household:Unemployed	2.473 **	.161	2.566 **	.099
Indicators of Informational Status				
City with less than 20,000 inhabitants	-.290	.247	-.508 *	.139
City with more than 100,000 inhabitants	.183	.152	.091	.074
Foreign Nationality	-.176	.212	-.308 **	.099
Time Trend	-5.254	15.878	-.959	9.693
Constant	7.792	31.514	.266	19.275
Rho 1	7.309 **	.376	-	-
Rho 2	2.465 **	.200	-	-
Log Likelihood (Number of parameters)	-17024.9906 (41)		-17989.1533 (33)	

	With Attrition Control		No Attrition Control	
	Estimated Coefficients	Standard Errors	Estimated Coefficients	Standard Errors
Number of Nonattrited Household-Year Obs.	40,433		40,433	

Note: **, * indicate statistical significance at the 1 and 5 percent significance level, respectively.

Table 6 Estimation Results Fully Interacted Model Estimated with Attrition Control

	Main Effects		Foreigner Interactions	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Houshold Structure				
Owner : Household owns house or flat	-1.098 **	.199	-.778	1.011
No. of children under 16 in household	.765 **	.092	-.507 **	.148
No. of adults in houshold	.322 *	.132	-.283	.194
Avg. age of adult household members	.014	.015	.061 *	.024
Avg. schooling of adult hh. members	-.307 *	.131	.541 *	.259
Houshold type: One person	.293	.268	.244	.627
Household type: Single parent	1.490 **	.285	.068	.676
Characteristics of Household Head				
Head of household: Age	-1.132 **	.339	-.614	.848
Head of household: Age squared	.076 *	.030	.081	.089
Head of household: Female	.765 **	.219	.223	.541
Head of household: Health satisfaction	-.143 **	.025	.107	.050
Head of household: Years of schooling	.003	.128	-.260	.252
Expected Duration of Welfare Receipt				
Head of household: Handicapped	.002	.148	.196	.289
Head of household: Out of the labor force	1.560 **	.184	1.385 **	.374
Head of household:Unemployed	2.232 **	.216	.819 *	.353
Indicators of Informational Status				
City with less than 20,000 inhabitants	-.234	.260	-1.251	1.031
City with more than 100,000 inhabitants	.046	.184	1.234 **	.339
Foreigner Specific Variables				
Immigration Year			.056	.208
Poor Speaking Ability			.206	.278
Poor Writing Ability			-.452	.346
Turkish			-4.572	2.170
Italian			-5.211 *	2.189
Yugoslavian			-5.312 *	2.267
Greek			-5.024 *	2.222
Spanish			-5.959 **	2.255
Time Trend	-16.275	16.718		
Constant	30.145	33.194		
Rho 1	5.618 **	.339		
Rho 2	3.581 **	.346		
Log Likelihood (Number of Parameters)	-16,969.611 (65)			

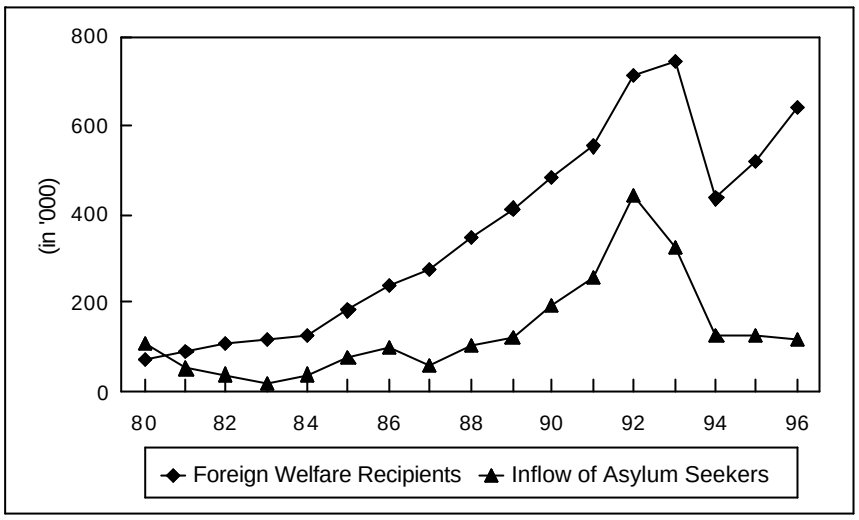
	Main Effects		Foreigner Interactions	
	Estimated Coefficient	Standard Error	Estimated Coefficient	Standard Error
Number of Nonattrited Household-Year Obs.		40,433		

Table 7 Simulation Results: Fully Interacted Model
Difference in Simulated Probability in Percent of Baseline Probability

	With Attrition Control		No Attrition Control	
Simulated Effect:	**German Househ.**	**Foreign Househ.**	**German Househ.**	**Foreign Househ.**
Baseline Prediction: Probability of Welfare Receipt	2.63	3.52	2.59	3.26
Houshold Structure				
Owner : Household owns house or flat (1 vs. 0)	-60.58	-69.07	-72.83	-89.20
No. of children under 16 in household (1 vs. 0)	44.98	13.16	48.50	15.78
No. of adults in houshold (2 vs. 1)	18.19	2.09	26.67	4.08
Avg. age of adult household members (60 vs. 30)	24.55	143.30	46.52	37.01
Avg. schooling of adult hh. members (14 vs. 9)	-82.98	77.11	-119.25	45.37
Houshold type: One person (1 vs. 0)	18.09	31.86	64.72	17.49
Household type: Single parent (1 vs. 0)	123.53	114.57	235.01	115.00
Characteristics of Household Head				
Head of household: Age (60 vs. 30)	-88.82	-59.38	-167.85	-4.54
Head of household: Female (1 vs. 0)	47.90	31.98	49.28	-20.79
Head of household: Health satisfaction (9 vs. 4)	-42.09	-9.69	-57.84	-32.34
Head of household: Years of schooling (14 vs. 9)	0.78	-57.78	15.99	-22.92
Expected Duration of Welfare Receipt				
Head of household: Handicapped (1 vs. 0)	0.13	11.03	27.50	6.65
Head of household: Out of the labor force (1 vs.0)	106.96	255.79	168.59	393.48
Head of household:Unemployed (1 vs. 0)	226.04	278.26	398.91	515.24
Indicators of Informational Status				
City with less than 20,000 inhabitants (1 vs. 0)	-1.38	-52.86	-37.05	-76.60
City with more than 100,000 inhabitants (1 vs. 0)	2.76	69.56	-7.91	44.45
Foreigner Specific Variables				
Immigration Year (1980 vs. 1960)	-	0.06	-	0.17
Poor Speaking Ability (1 vs. 0)	-	11.08	-	-23.45
Poor Writing Ability (1 vs. 0)	-	-25.89	-	-3.44
Turkish (1 vs. 0)	-	-312.24	-	-149.72
Italian (1 vs. 0)	-	-226.53	-	-130.34
Yugoslavian (1 vs. 0)	-	-251.14	-	-130.58
Greek (1 vs. 0)	-	-188.64	-	-119.81
Spanish (1 vs. 0)	-	-181.25	-	-105.16
Time Trend (1995 vs. 1984)	-10.62	-9.66	-17.55	-17.99

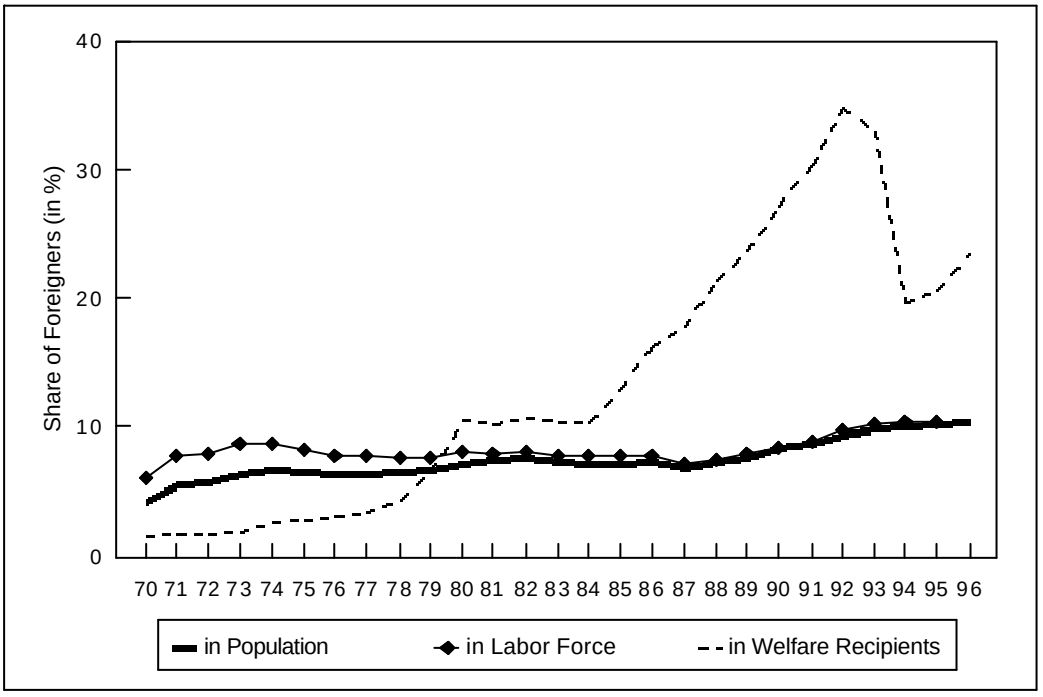
Note: The columns present the difference of two simulated probabilities of welfare dependence relative to the baseline prediction. The values are calculated using all observations and the coefficient estimates as in Table 6. The probabilities obtain after integrating out over the unobserved heterogeneity distribution. The effect of dichotomous variables was calculated for values 1 vs. 0, for continous variables the compared values are presented in column 1, approximating one standard deviation above and below the variable mean.

Figure 1 Foreign Recipients of Social Assistance and Inflow of Asylum Seekers (absolute figures, in thousands)



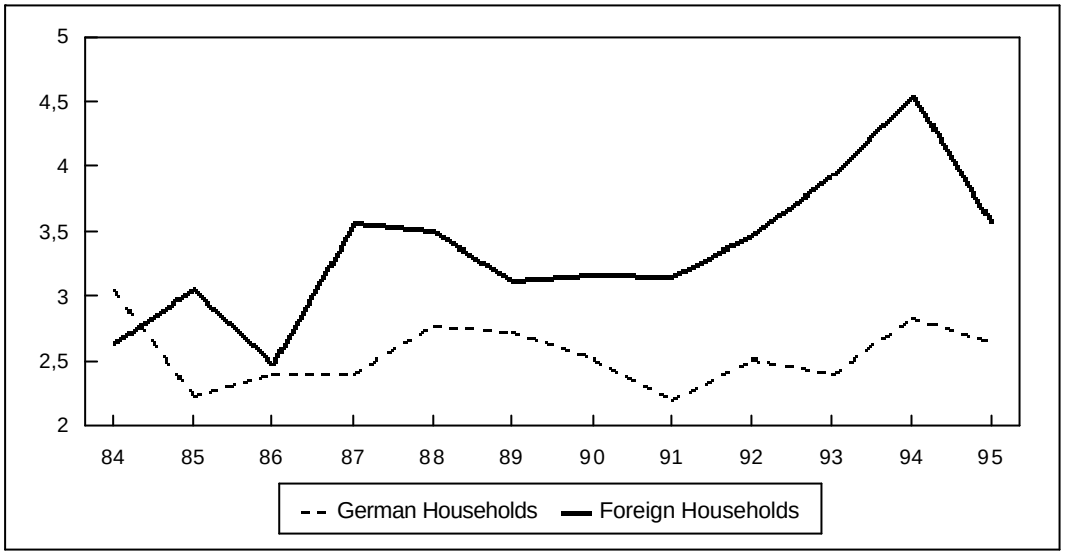
Source: Asylum Seekers: Statistisches Bundesamt, Statistical Yearbook, various years,
Welfare Recipients: Statistisches Bundesamt, Fachserie 13, Reihe 2, various years.

Figure 2 Share of Foreigners in Population, Labor Force and Welfare Recipients



Source: Population: Statistisches Bundesamt, Fachserie 1 Reihe 2, various years,
Labor Force: Statistisches Bundesamt, Fachserie 1, Reihe 4.1.1, various years,
Welfare Recipients: Statistisches Bundesamt, Fachserie 13, Reihe 2, various years.

Figure 3 Probability of Welfare Dependence by Nationality over Time



Source: GSOEP, own calculations.

Appendix

Estimation Results on Attrition Equation

	Mean (Std. Dev.)	Estimated with Specific. in Table 5		Estimated with Specific. in Table 6	
		Coeff. Estimate	Standard Error	Coeff. Estimate	Standard Error
Dependent Variable: Household Attrited	.106 (.308)				
Characteristics of Household and Household Head					
Age	4.747 (1.601)	.019	.076	-.011	.075
Age squared	25.093 (16.428)	-.003	.008	-.002	.008
Female	.239 (.427)	.147 **	.047	.134 **	.049
Years of Schooling	11.148 (2.444)	.009	.009	.007	.009
Full- or Parttime Employed	.668 (.471)	-.630 **	.052	-.593 **	.055
Unemployed	.045 (.208)	-.379 **	.088	-.343 **	.093
Foreign Nationality	.217 (.453)	.655 **	.059	.589 **	.058
Single Household	.218 (.413)	-.462 **	.062	-.433 **	.063
No. Household Members	2.721 (1.449)	-.164 **	.020	-.152 **	.021
Characteristics of Interview					
New household (2)	.172 (.377)	.798 **	.059	.851 **	.069
Changed Interviewer (2)	.164 (.370)	.661 **	.040	.668 **	.041
Time Trend	1.989 (.004)	-11.770	10.137	-26.188 *	10.186
Constant		21.201	20.218	50.167 *	20.331
Rho 1		-1.937 **	.533	-1.467 **	.347
Rho 2		1.796 **	.182	1.579 **	.228
Number of Observations	45,224				
Log Likelihood (No. of Parameters)		-17,024.99 (41)		-16,969.61 (65)	

Note: (1) **, * indicate statistical significance at the 1 and 5 percent significance level, respectively.
(2) *New household* indicates households in the period when they are observed for the

first time.
Interviewer change is coded one, if the survey household was interviewed by a different individual compared to the preceding period.