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Take It or Leave It: (Non-)Take-Up Behavior of Social Assistance in Germany

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Abstract:

Analyzing the under-consumption of benefits in the German means-tested Social Assistance program using data from the German Socio-Economic Panel Study we estimate a high non-take-up rate of more than 60 percent. We find distinct differences across population groups and significant impacts of factors such as stigma, application costs and social ties. Specifically, we show that the rate varies greatly depending on the determination of eligibility. Results pertaining to the amount of unclaimed benefits are qualitatively similar to those for the non-take-up rate. As expected, the proportion of outstanding benefits that is not claimed by eligible households is lower than the non-take-up rate because small entitlement amounts are more likely to remain unclaimed. In light of likely measurement errors in income and in our simulation of household needs, we provide a range of estimates yielding useful boundaries for the non-take-up rate.

Zusammenfassung:

Basierend auf den Mikro-Daten des Sozio-oekonomischen Panels untersuchen wir Determinanten der Nichtinanspruchnahme von Sozialhilfe in Deutschland. Die Schätzung einer Nichtinanspruchnahmequote („Dunkelziffer") von über 60 Prozent zeigt deutliche Unterschiede für verschiedene Bevölkerungsgruppen und zudem signifikante Einflüβe von Indikatoren zur Messung von Stigma, Kosten der Antragstellung und sozialen Bindungen. Resultate für die Höhe der nicht in Anspruch genommenen Sozialhilfebeträge sind qualitativ ähnlich. Wie erwartet ist die Rate der nicht ausgezahlten Sozialhilfeleistungen jedoch geringer als im Falle der Nichtinanspruchnahmequote, da es eher geringe Sozialhilfebeträge sind, die nicht beantragt werden. Darüber hinaus wird deutlich, wie stark die Berechnung der Inanspruchnahmequote mit der Bestimmung der Inanspruchnahmeberechtigung variiert. Angesichts der hohen Wahrscheinlichkeit von Messfehlern sowohl in den faktisch erhobenen Einkommensdaten als auch bei der Simulation des Bedarfseinkommens, bieten wir eine Reihe von Schätzungswerten und somit nützliche Sensitivitätsanalysen für die Nichtinanspruchnahmequote an.

I. Introduction

Industrialized countries share a common principle of providing a basic safety net within the social security system to protect the poorest from falling below a certain level of economic well-being. This safety net might consist of a multitude of single programs targeted at different life events or situations (like in the USA) or a single system of social assistance (like in the Federal Republic of Germany). Notwithstanding differences, a closer look at claiming behavior across countries reveals that non-take-up of such social benefits is high, particularly for means-tested social benefits. The predominant means-tested German welfare assistance program (the so-called *Sozialhilfe*) is no exception to the rule. Existing studies most recently estimate a non-take-up rate among individuals of 58.7 percent in 1991 and 52.3 percent in 1995 (Neumann and Hertz, 1998), and a non-take-up rate among households of 59.6 percent in 1996 (Bird et al., 1999) and 63.1 percent in 1993 (Riphahn, 2000). It is the aim of this paper to provide a better understanding of the factors that contribute to the high rate of non-take-up of welfare benefits in Germany.

There are various reasons why the under-consumption of benefits must be considered a challenge that is equal in importance to the abuse of benefits. First, non-participation suggests a failure in the policy. Though at any one point in time full take-up is not realistic because of lags and delays in claiming, the target of the policy is the full use of its benefits by those eligible in order to fulfill the mandate of providing a safety net for those in need. Secondly, non-take-up by some eligible households implies a fundamental injustice when comparing non-claiming households to households in a similar economic situation who receive social benefits. Thirdly, the rejection of benefits can only be consolidated with conventional utility maximizing consumer choice theory if claiming is costly and the costs exceed the anticipated benefits from the entitlement amount. To the extent that such costs result from complex schemes, poor transmission of information or similar factors that could

be mitigated, they imply a failure in the design or implementation of the program. Non-take-up becomes a serious social problem if some households cannot reach the targeted income because they are – directly or indirectly – discouraged or prevented from claiming because of objective or subjective barriers.[1]

In this study we take another look at the non-take-up rate of the German Social Assistance program using micro-data at the household level from the German Socio-Economic Panel (GSOEP). Simulating the German welfare system we determine the proportion of households that decides not to claim benefits out of the entire population of households that are deemed eligible to receive assistance. We further determine whether this non-take-up rate varies across population groups and whether the differences persist if we estimate the non-take-up rate in a multinomial regression that controls for the impact of related variables. Finally, we test hypotheses about the impact of stigma and application costs on take-up using a variety of proxies. Given the nature of relatively small representative survey sample sizes, we provide a wide range of estimates in order to show the sensitivity of our empirical results.

In addition to the question of what proportion of households or people fails to claim benefits for which they are eligible it is of great fiscal importance to understand the magnitude of the entitlements that households are forgoing when not claiming benefits. In essence, these forgone benefits represent fiscal savings to the relevant government budget. Any policy designed to affect participation will also have a fiscal impact. Also, economic theory predicts that the level of entitlements affects claiming behavior, yet little is known about the determinants of the level of benefits among participating and non-participating households. We will address this shortcoming by providing measures of the average entitlement levels for claiming and non-claiming households and household groups, and by

estimating the impact of household characteristics on the magnitude of claimed and forgone benefits.

Our empirical results suggest that the estimated non-take-up rate for social assistance in Germany as well as the fiscal savings rate from non-claiming households are rather sensitive to changes in our simulated measure of eligibility. Furthermore, household characteristics can be associated with significantly different welfare participation rates and forgone benefits levels. While our base case scenario suggests an estimated non-take-up rate of 62.9 percent, it can be as high as 72.2 percent for households without children and as low as 19.8 percent for households with more than two children. We also find that social controls can affect participation: households that are generally pessimistic or not actively involved in religious institutions have a significantly higher participation rate. With respect to foregone benefits we find that while our base case scenario suggests average unclaimed benefits of 419 German Marks (DM) per month, they can be as low as DM 150 for foreign-born ethnic German households and as high as DM 643 for households with more than two children.

The paper is organized as follows: After a review of the literature in section 2, we briefly describe our model of social assistance participation decision (section 3) and the German Social Assistance System (section 4). Section 5 provides information on data and methodological aspects; sections 6 and 7 show descriptive and multivariate results of our empirical work. Section 8 concludes.

II. Research Question and Literature

Knowledge about non-take-up of social benefits in Germany is rather limited. Existing studies show differences in benefit *receipt* across population groups, and in the proportion of eligible, non-claiming people or families out of all people or families in the relevant population by sub-groups of the entire population.[2] What is largely missing in the

literature is a comprehensive discussion of the *non-take-up rate* for various population groups.

The non-take-up rate for social benefits refers to the proportion of eligible households who do not claim the benefits for which they are eligible. Empirical estimates of the non-take-up rate of social assistance in Germany go back to the late seventies and vary from 36 percent to 79 percent depending on the method and data used (Geissler, 1976; Bujard and Lange, 1978; Klanberg, 1979; Hauser et al., 1981; Hartmann, 1981; Hauser and Hübinger, 1993; Neumann and Hertz, 1998; Bird et al., 1999; Riphahn, 2000). Of the more recent studies, Neumann and Hertz (1998) combine estimates determining eligibility that are derived by descriptive means on the basis of GSOEP data with official statistics of welfare receipt to calculate a non-take-up rate for individuals of about 52 percent for 1995. It is not clear that this method of combining different sources will result in a consistent measure of the non-take-up rate. Bird et al. (1999) determine both eligibility and welfare receipt using GSOEP data for 1996, estimating a non-take-up rate for households of about 60 percent. Riphahn (2000) bases her results on data from the 1993 Income and Expenditure Survey (EVS) to estimate a non-take up rate of 63.1 percent.

With the exception of Bird et al. (1999) and Riphahn (2000) these studies calculate the non-take-up rate without further estimating the determinants of non-participation or empirically testing hypotheses that may shed some light on behavior that appears to contradict utility maximization. In this paper, we extend the research started in Bird et al. (1999) using 1996 data from the GSOEP to simulate eligibility and to obtain estimates of the non-take-up rate and the entitlement levels of non-institutional German households.

Measuring the non-take-up rate poses a number of formidable challenges. The non-take-up rate is generally calculated as the ratio of individuals or households that do not receive benefits although being eligible divided by the total number of eligible individuals or

households. Challenges appear when deciding who to count as eligible and who to count as non-claimant. Particularly the denominator is hard to determine with accuracy. Hartmann (1985) points out that there is a high density of households with incomes that barely fall short of or barely exceed the income threshold that determines eligibility. Hartmann also points out that eligibility does not only depend on the economic situation of the household but also on the eligibility criteria determined by the law, by procedural regulations accompanying the law, and by legislation and administrative practices at the local level. Small inaccuracies in income that can be measured with error, or small differences in the threshold through differences in administrative practices that even the best simulation cannot be expected to pick up will therefore have a rather large impact on the estimated size of the eligible population. Acknowledging these problems, we will present a range of values to provide a broader and – we hope – more accurate picture of the problem.

In our empirical work we will also present results from regression models estimating the probability that a household claims the benefits to which its members are entitled. Our work is based on economic models of claiming which have been developed along the lines of conventional utility maximizing consumer choice models. According to these models, the refusal of benefits becomes utility maximizing if the claiming process involves costs that exceed the anticipated benefits. These costs can come, for example, in the form of stigma, difficulties in obtaining adequate information, uncertainty, and other non-pecuniary factors. If stigma, missing or inadequate information, uncertainty, and other non-pecuniary costs to consumers are acknowledged in their utility equation, refusal of benefits can be consolidated with utility-maximizing rational consumer behavior (Moffitt, 1980, 1983; Ashenfelter, 1983; Cowell, 1986; Anderson and Meyer, 1997).[3]

There is also a temporal aspect to the claiming decision. In a dynamic theoretical model of eligibility and participation, Blank and Ruggles (1996) incorporate the role of delays

in claiming and of non-claiming behavior by households who are in need of assistance only for a short time. Looking at women's participation in food stamps and in Aid to Families with Dependent Children (AFDC), they find that eligibility spells end quickly while participation spells do not. Only 28 percent of the women who experience an eligibility spell will ever take up AFDC, suggesting that short eligibility spells do not lead to participation. Of those who take up AFDC, 71 percent start immediately upon becoming eligible, and essentially all of those who will eventually claim benefits are on the program within six months of becoming eligible. The results for food stamps are very similar, also suggesting that the majority of eligibility spells are short and do not lead to participation, and that there is little evidence of delays in claiming by those who choose to participate.

For the German social assistance program, Riphahn (2000) includes variables such as the presence of small children, being of retirement age, home-ownership, and little education as proxies to capture the impact of eligibility spell duration on welfare participation. Riphahn finds that the presence of small children and low education levels significantly increase participation while home-ownership significantly reduces participation. Thus the evidence suggests that expected duration of need for support affects the claiming decision.

The empirical work in this field is constrained by the unavailability of information about non-pecuniary costs. Much of the empirical work is thus based on reduced form estimation of participation in welfare programs using multivariate regressions to link observable household characteristics to the probability of take up. Multivariate regressions provide significantly better information than simple cross-tabulations about what characteristics are associated with a higher probability of rejecting benefits by allowing for interactions between the characteristics.

Non-participation in social welfare programs has fiscal implications as well. Policies with the aim of increasing the participation rate of a particular program will increase

government spending on that welfare program. In essence, then, the unclaimed benefits represent savings to the fiscal budget. However, to say that fifty percent of eligible households do not take up benefits for which they are eligible is not equivalent to saying that the government is saving fifty percent of its entitlement liability because entitlement levels differ between claimers and non-claimers.

Existing research suggests that the level of entitlements matters in the decision to claim. For any cost associated with claiming, economic models predict that the probability of claiming increases with the level of entitlements by making it more likely that the benefits will exceed the costs (Blank and Ruggles, 1996; Moffitt, 1983). Research on the food stamps program in the United States, for example, shows that the participation rate is lowest (.4 or 40 %) for households who can expect to get between zero and forty dollars worth of food stamps. Participation is highest (.93 or 93 %) for households who stand to receive between $203 and $600 (Daponte et al., 1999). Fry and Stark (1987) find the level of entitlements to be statistically significant in explaining participation in the British Supplementary Benefit program in a multivariate regression, a conclusion that is confirmed by Riphahn (2000) for the case of social assistance in Germany.[4]

Theoretical and empirical work thus suggests that the entitlement level is lower on average for those who do not claim their benefits, however, our knowledge of the magnitude of the fiscal impact and of the distribution of entitlements among different population groups is limited. We will use the simulation results in our paper to provide a better understanding of the total unclaimed benefits, and to provide cross-tabulations of the level of entitlements with various household characteristics. We will also link the level of entitlement to observable household characteristics in a multivariate regression framework for those households who are eligible to receive benefits.

III. Modeling the participation decision

The unobserved participation decision can be modeled as a comparison between the relative benefits and the relative costs of participation (e.g. Moffitt, 1983). Borrowing liberally from Blank and Ruggles (1996), the participation decision of a given household *i* can be represented as:

$$(1) \qquad P_i = f(U(Y_{p,i}) - U(Y_{np,i}) - C_i(DC_i, S_i))$$

Participation occurs when $P_i > 0$, hence when utility from participation exceeds utility from non-participation minus the costs of claiming benefits. Utility in either state depends on the respective incomes, income when participating, $Y_{p,i}$, and income when not participating, $Y_{np,i}$ in the social assistance program where:

$$(2) \qquad Y_{p,i} = L_{p,i} + B_i + NL_{p,i}$$
$$Y_{np,i} = L_{np,i} + NL_{np,i}$$

Income when participating in the social assistance program consists of the household's labor market income, $L_{p,i}$, the level of the entitlement, $B_{p,}i$, and the household's non-labor income, $NL_{p,i}$. Income when not participating in the social assistance program consists of the household's labor market income, $L_{np,i}$, and non-labor income, $NL_{np,i}$. Additionally, we assume that $L_{p,i}$ and $NL_{p,i}$ are independent from B_i since benefit receipt in essence requires that households have consumed other sources of income first.

A household's costs of participating in the social assistance program, C_i, consist of the direct costs of participation in terms of monetary expenses and time, DC_i, as well as indirect costs such as stigma, S_i . The direct costs of traveling to the local assistance agency will be influenced by the number of children, their ages and child care needs, actual transportation costs and the distance to the aid agency, as well as variables that characterize the operating

process and the application process such as the availability and efficiency of staff and the complexity of the application forms. These costs should be higher for first-time users than for continuing recipients. The stigma costs will be influenced by the household's distaste for welfare as well as by the distaste for welfare by friends and neighbors. Again, these stigma costs are expected to be lower in case of recurrent claiming.

Based on the participation model above we would expect that households with higher benefits and lower direct and indirect costs are more likely to participate in the social assistance program. The model above will be underlying our empirical work, however, its estimation would require information of variables that we do not have access to such as the distaste for welfare by friends and neighbors or the efficiency of the staff. In the empirical work we will thus estimate a reduced form equation of participation conditional on being eligible for social assistance.

In restricting the sample by eligibility status, we may generate bias in the coefficients. To see this, suppose the regression of interest is

$$P_i = \alpha + \beta_1 X_i + \beta_2 Y_i + \varepsilon_i \qquad (3)$$

where P_i is household *i*'s participation decision, Y_i is income, X_i is a vector of other household characteristics, and ε_i is an error term. Because we only include households that are eligible for social assistance in the sample, we are effectively selecting the sample on income. This has two implications. First, failure to include Y_i in the regression generates correlation between X_i and ε_i, creating (downward) bias in β_i. Therefore, we should always include Y_i in our take-up regressions. Second, measurement error in Y_i will affect not only the coefficient on Y, β_2, but also all the other coefficients because the error affects selection into the sample.

Moreover, if decisions regarding income and take-up are made simultaneously, *Y* is endogenous and would require a separate equation. For all those reasons it is necessary to instrument for income in our regressions. We use indicators of industry and occupations and parents' education as the identifying variables in our instrumenting equation.[5]

IV. The German Social Assistance System

In order to determine the non-take-up rate of eligible households in the German Social Assistance program, we first need to simulate eligibility and thus the provisions of the social assistance program. As in most countries, Germany's welfare state has historically relied heavily on the principle of social insurance rather than means-tested assistance. Until 1961, social assistance was not very important and it was the responsibility of local governments. In 1961, *Sozialhilfe* (Social Assistance, or SA) was introduced as a national, means-tested assistance program that remains today as the most important part of the German social welfare system.[6]

Social Assistance is divided into two branches. In this paper we will look at the more important one, *Hilfe zum Lebensunterhalt* (HLU) which is the SA system's provision for ongoing monthly payments to households deemed eligible on the basis of their incomes. These support payments make up 82.5 percent of the system's expenditures for private households (not including expenditures on institutionalized clients - see Neuhäuser, 1996, p. 635).[7] We will explain our simulation algorithm in detail below. In short, however, each *Bundesland* (federal state) sets an income threshold which represents the minimum income necessary for a single adult individual to maintain a reasonably dignified existence in contemporary society - a mandate laid down by the German constitution (the so-called *Eckregelsatz*). This adult-equivalent minimum needs income is adjusted for families according to an equivalence scale. Additional fractions are allocated to a household with

members in ongoing special circumstances, such as old age or lone parenthood according to fairly firm rules (the so-called *Mehrbedarfszuschläge*).

For the most part, the HLU payments are made in cash, and they supplement the family's income up to the threshold, plus housing costs which again may be covered up to a certain threshold.[8] As we will discuss in more detail below, when determining eligibility, a family's income is subject to a number of adjustments. Certain expenditures can be deducted (see section V below), and in principle the receipt of social assistance requires that all income sources above a certain minimum level are used before claiming social assistance („*Nachrangigkeitsprinzip der Sozialhilfe*„).[9] Furthermore, legislation entails leaving a certain amount of labor income to the employee, which is not taken into account when calculating eligibility.

In addition to these regular monthly benefits, one-time supplements are available to help pay for special needs, such as replacing a broken furnace (the so-called *einmalige Leistungen*). In principle, eligibility is determined, and payments are allocated by local governments.

V. Data and Methods

We use data from the *German Socio-Economic Panel* study (SOEP), a repeated sample of German households begun in 1984 in the former West Germany, and extended in 1990 to include the new eastern federal states. We take a cross-section from the 1996 wave of the panel and construct a data set using the household as the unit of observation (6,567 cases unweighted).[10] Applying appropriate population weights, which also control for potential attrition in previous waves, these cases form a representative sample of all non-institutionalized households living in Germany in early 1996. For each household in our data, we obtain information about the age, gender, marital status, and education of the main income

earner, the household's composition; its residential location; and its income (including the earnings, the non-labor income, and the transfer income of all household members) in the month of the interview.

The indicator variable we will explore is an indicator of whether the family claimed benefits according to the SA program for which it deems eligible. We will thus look at welfare receipt among the households that we determine to be eligible for assistance for life support (HLU) in the month of interview. *Eligibility* for HLU is calculated within our data according to the rules of SA system. The formula for calculating a household's need is as follows:

$$(4) \qquad HN_i = \sum_{j=1}^{n} (IW_{ij} + AW_{ij}) * NT + HC_i$$

where

HN_i = household i's total economic need
n = number of household members
IW_{ij} = Individual j's base weight
AW_{ij} = weights for additional need *(Mehrbedarfszuschläge)*
NT = state-specific need threshold *(Eckregelsatz*)
HC_i = housing costs

The simulation algorithm starts with a base weight for each individual, which assigns a value of 1.0 to the head and weights varying from 0.5 to 0.9 to additional household members according to age.[11] An individual's base weight may be increased due to needs caused by ongoing special circumstances (*Mehrbedarfszuschlag)* based upon age, disability status, household composition of lone parent families and pregnancy.[12] The household weight is the sum of the individual weights of all household members (individual base weights plus weights for additional needs).

The household weight is multiplied by the threshold representing the minimum income that is deemed essential for a single adult in the household's federal state

(Eckregelsatz).[13] Variations across the states are small: In 1996, the standard one-person rate for HLU payments ranged from DM 522 in the western states of Hesse and Baden-Wurttemberg to DM 504 in the eastern states Mecklenburg-West-Pomerania, Saxony, and Thuringia. To this household-equivalent income need the costs of housing, heating, and warm water are added, with the total being the household's overall economic need.[14]

To determine eligibility, current household income is compared to household needs. The income measure used for this comparison is the actual current household income adjusted for certain deductible expenditures (*Absetzbeträge*) in case of employment as well as for some transfer payments.[15] If the household's adjusted income HY_i is below the overall household's needs HN_i, the household is considered eligible for HLU, i.e.:

$$\begin{aligned} (5) \quad & HLU_i = 1 \quad \text{if} \quad HN_i > HY_i \\ & HLU_i = 0 \quad \text{if} \quad HN_i \leq HY_i. \end{aligned}$$

In light of the fact that income measurements in our data can contain errors and in light of the possibility of variations in the eligibility criterion any one estimate for the non-take-up rate of eligible households will be unsatisfactory. In order to provide some sensitivity information for our estimates we also assign eligibility to households whose incomes exceed their needs by x percent or fall short of their needs by x percent (x being 5 and 20 percent, respectively):

$$\begin{aligned} (5a) \quad & HLU_i = 1 \quad \text{if} \quad HN_i > (1 \pm x) * HY_i \\ & HLU_i = 0 \quad \text{if} \quad HN_i \leq (1 \pm x) * HY_i. \end{aligned}$$

The level of entitlements for each household, HB_i, is determined as:

(6) $HB_i = HN_i - HY_i$

As with the participation decision, in order to provide sensitivity information for our estimates we also determine the entitlement level using household income that exceeds or falls short of the simulated household income by *x* percent (*x* being 5 and 20 percent, respectively):

(6a) $HB_i = HN_i - (1 \pm x)\, HY_i$

VI. Descriptive Statistics

As outlined above, decisions about who to consider eligible will greatly influence eligibility and non-take-up rates. Table 1 presents weighted estimates of the number of households by eligibility status for a range of eligibility criteria. The first two rows indicate the number and respective population share of households that are or are not eligible for social assistance (HLU). Eligible households are further broken down into those actually receiving HLU and those who do not. Dividing the households who do not receive HLU by the total number of households who are eligible will then give rise to the non-take-up rate (the so-called *Dunkelziffer*).

The lower panel of table 1 displays the results of a similar analysis for the entitlement level. The simulated entitlement level is shown for all eligible households, and separately for households who do and do not actually receive HLU. Using average entitlement level and number of households for those who actually receive HLU gives rise to the aggregate claimed benefits, while using average entitlement level and number of households for those who do not receive HLU determines the aggregate unclaimed benefits. The last row then presents the

proportion of the total HLU entitlements for which households are eligible that are not claimed by eligible households.

In Table 1, eligibility and non-take-up rate are presented for the entire population using more and less stringent eligibility criteria.[16] In the first column, a household is classified as eligible if 120 percent of the family's income falls short of the needs threshold. This represents the most stringent eligibility rule. In the last column a household is classified as eligible if 80 percent of the household's income falls short of the needs threshold, representing our least stringent measure.

It is possible that incomes in our sample are measured with error. If incomes are underreported, or if we incorrectly assign additional needs to some households during the month of the interview, then the first column will present a more accurate picture of the non-take-up rate.[17] On the other hand, there are factors that would suggest using a less stringent criterion for determining eligibility. Households may receive one-time supplements (*einmalige Leistungen*) to help them purchase expensive items such as a new refrigerator or winter coats, and they may be eligible for these one-time supplements even if they are not eligible for social assistance. Though for the vast majority of cases the aid components coincide, our simulations may underestimate the number of eligible households. Furthermore, we may fail to incorporate all the components that enter the household's needs to their full extent**,** and administrators may be more generous in granting social assistance than our simulations predict.[18] For all these reasons, the lower threshold may more appropriately capture the true extent of non-take-up.

In Table 1 we see that of the 37.3 million households in Germany, between 4.0 and 13.3 percent of the population is eligible for HLU, depending on the eligibility rule. The non-take-up rate among the eligible households is 41.3 percent if the most stringent rule for eligibility is used. As more households become eligible using increasingly less stringent

eligibility rules, the non-take-up rate increases to as much as 82.0 percent of the eligible population. Assuming that our simulations are essentially accurate and households are eligible if their needs exceed their income, then the non-take-up rate of social assistance is 63.1 percent.

Neumann and Hertz (1998) and Riphahn (2000) refer to the proportion of those who do not receive social assistance though they are eligible – and hence are considered needy – as the shadow rate of poverty (*Dunkelziffer der Armut)*. [19] Neumann and Hertz estimate this shadow rate of poverty for 1995 to be 3.4 percent of the population of all individuals. Riphahn estimates a shadow poverty rate of 2.04 percent of all households. Using our preferred scenario in column four of table one, we predict a slightly higher shadow poverty rate among households in Germany of 4.1 percent. Applying our set of different eligibility rules our results range from 1.6 percent to 10.9 percent.[20]

Concerning the information on monthly entitlements, our descriptive results clearly confirm the hypothesis that benefits for non-claimers are drastically lower when compared to benefits for households who actually receive HLU. In our preferred scenario monthly entitlements of successful claimers are about DM 830, while non-claimers forgo on average DM 401. This yields an unclaimed benefits rate of 45.3 percent. Depending on our different eligibility rules, this estimate of "savings" by the authorities ranges from about 30 percent to 66 percent for the scenario with the least stringent eligibility rule.

The graphical presentation in Figure 1 maps the take-up rate against eligible households' average entitlements as a percent of the households' incomes. Looking at the fat line in the middle the graph shows that households who are entitled to benefits that are less than ten percent of their income have a take-up rate of less than 20 percent. As the level of entitlement becomes a larger share of their own income, the take-up rate increases to about 80 percent for those who are entitled to benefits that are twice their income. The graph clearly

confirms that claiming behavior is closely related to the relative size of the benefits to which a household is entitled, regardless of the stringency of the eligibility criterion.

Table 2 summarizes the information presented in the previous table for various demographic groups, using the eligibility rule that adjusted income falls short of simulated needs. Our results suggest that older households are less likely to be eligible for HLU than households with heads that are less than fifty years of age (5.2 or 5.3 percent compared to 7.6 percent). This supports frequently heard claims that older households are faring rather well. At the same time the non-take-up rate among older households is higher than average, indicating that of the below-average proportion of elderly households in need of assistance, a disproportionately large number chooses to leave the entitlements unclaimed. Voluntary poverty among elderly who renounce aid from the government may thus be a concern unless this result is driven by non-pecuniar support from outside the household that is not covered by our data such as free meals or free transportation.

Other results in Table 2 indicate on the one hand that a number of demographics can be associated with a below-average non-take-up rate. Households that are more likely to claim their benefits include households with a female head, single-parent households, and households with children, renters, households whose head is foreign-born, and households whose head is unemployed or not employed.[21] On the other hand we find various household characteristics that can be associated with an above-average non-take-up rate. Households that are less likely to claim benefits include single-adult households, households with several adults with or without children, households living in metropolitan areas or living in the East, as well as households whose head is employed, full time or part-time, or whose head is retired. The unclaimed benefits rate varies in the same direction as the non-take-up rate, e.g. the proportion of outstanding benefits that are saved through non-claiming by some of the

eligible households is higher among elderly households than it is among households with a younger head.

Results from the cross tabulations above largely coincide qualitatively with results presented in the recent study by Neumann and Hertz (1998). However, cross-tabulations may provide a very inaccurate picture of what contributes to higher non-take-up rates by failing to account for interactions between the various characteristics of a household. In the next section we will estimate probit regressions to understand which household characteristics can be associated with low program participation rates when controlling for related household characteristics.

VII. Regression Statistics

Sample means and standard deviations for the household characteristics that are included in the regressions are presented in Table 3 for households according to their eligibility status and their claiming behavior. We include predicted income to control for biases from selecting only the sample of eligible households in our estimation of participation in the social assistance program. We would expect higher predicted incomes to decrease the probability of participation since eligible households with higher incomes, *ceteris paribus*, have lower entitlement levels. The region of residence is included to capture differences across regions in macroeconomic and labor market conditions. The other variables used to determine the probability of program participation are based directly and indirectly on the underlying model that was presented in section three above.

Theory predicts that a number of household characteristics may be used to capture differences in the costs of applying for assistance or the costs associated with stigma. We assume that immigrant households are less likely to participate both because of a higher degree of stigmatization and higher costs from possible language barriers and unfamiliarity

with the system. There is also the possibility that foreign-born households with a non-German head may not claim for fear of being asked to leave Germany. In Germany, dependency on social assistance can be used as a reason to discontinue the residency permit. This is not the case for foreign-born ethnic Germans. We will therefore distinguish between these two types of foreign-born households.

Blank and Ruggles (1996) suggest that the number of children will affect the costs of participation in terms of monetary expenses and of time. Related to the number of children are dummy variables for the composition of the family, indicating whether the households consists of one or more than one adult and whether there are children in either one of these households groups. With additional adults that can serve as child care providers while applying for social assistance, the cost of participation is lower and participation is more likely. However, additional adults can also contribute additional income and hence make participation less likely.

The dummy variables for living in a rural setting or in a metropolitan area as a measure of population density can be expected to pick up several factors.[22] One might argue that the distance to the aid agency is larger in rural areas, thus raising the cost of participating in the program for rural households compared to other households. One might also argue that information is more easily distributed formally and informally in more densely populated areas, and one might argue that the anonymity of living in a larger city reduces stigma. We would therefore expect participation to be higher for households living in a metropolitan setting and lower for households who live in a rural area.

Households with higher educational attainments may have lower time costs of applying and completing the application form and they may be better informed about the program parameters. *Ceteris paribus*, we would expect households with more education to be more likely to participate given their eligibility. The age of the household head is included

because it has proven to be related to a household's distaste for social assistance.[23] We include a dummy variable for households living in East Germany to account for the likely higher stigma cost for families in the East. In the former East Germany people had an obligation to work and a social assistance program that included criminal punishment for those able to work who continue to use social assistance (Neumann and Hertz, 1998).

In our model we will also try to test some hypotheses about take-up behavior. The work by Blank and Ruggles (1996) suggests that most eligibility spells are short and do not lead to participation. We include a dummy variable indicating whether the household has experienced a drop in income of at least twenty percent between the previous year's average monthly income and the income during the month of the interview. This variable allows us to test very broadly the hypothesis that households with low income due to a recent negative shock to the household's income are less likely to claim benefits for which they are eligible. Non-claiming could then be explained by the household's expectation that their eligibility is only temporary or by higher stigma costs for first time eligible households that may lead them to delay the decision.[24] Like Riphahn (2000), we also include whether or not the household rents or owns the apartment or house they live in which might serve as an indicator for the duration of the eligibility spell.

Further included are a number of social control variables. We define as pessimists respondents who strongly disagree with the statement that looking into the future he/she is essentially optimistic. We also include an indicator variable for households whose members feel that their own behavior does not affect the course of their own lives. Both these variables are included to test the hypothesis that households who feel hopeless or powerless are more likely to rely on the government for support than households who feel their own actions can make a difference and who are optimistic[25].

We also include a dummy variable for a household that never attends church or other religious meetings, and another variable indicating that a household has strong ties to its location. Our hypothesis is that stronger ties to the community through religious interaction or other connections lead to higher stigma costs from claiming benefits and open doors to others forms of support that make social assistance less of a necessity. We would expect households with stronger ties to be less likely to take-up benefits.

Finally, we include dummy variables for the head's employment status in our regressions. We expect that compared to household heads who work full time, eligible households with heads that are not employed, unemployed, work part-time, or are retired have lower time costs of claiming benefits and are thus more likely to take up benefits.

Non-Take up behavior: Results from Probit Regressions

The following regression results are based on the eligibility criterion that defines a household as eligible if the household's simulated needs exceed their adjusted income. In Table 4 we present results from several probit regressions for the 429 HLU-eligible households in our sample. Column one, the short list of covariates, estimates the probability of HLU take-up as a function of demographic factors such as age, education, location and family composition. In the following columns we add first our social control variables, then employment status variables and finally - as our full model - both subsets.

The short regression (Column 1) provides evidence that households with higher predicted incomes have significantly and substantially lower probability of participating in the program. *Ceteris paribus,* household income is directly and inversely related to a household's entitlement level. This supports the hypothesis that non-take-up is higher for households with low incomes and high benefits that exceed the costs of claiming (Blank and Ruggles, 1996; Riphahn, 2000). The results also confirms predictions from the threshold

model which stipulate that households with higher incomes may have a lower perception of need and that the rather low entitlements they can expect to receive may do little to alleviate any perceived need (van Oorschot, 1998). Finally, given their higher incomes, these households are more likely to be part of a social group where eligibility for social assistance is low, such that the distaste for assistance and the stigma attached to claiming assistance may be higher (Cowell, 1986).

The number of children has a positive impact on a household's participation. With more dependents that share the hardship associated with the refusal of benefits, declining benefits to avoid stigmatization may be harder. It is also possible that administrators of the program are less disdainful of households with children seeking help than of claiming adults, and that the individual's peer group likewise is more accepting of the welfare receipt by families with children who have fallen on hard times. Thus, this result is consistent with our understanding of stigmatization and attitudes toward welfare receipt while it does not lend support to the hypothesis that more children with possibly more demanding child care needs increase application costs and thus reduce participation.

Households with several adults without children are also significantly more likely to claim benefits than single-adult households. This supports the hypothesis that application costs may be lower for a household with several adults that can share knowledge and arrange their schedules more easily to find the time involved in claiming benefits. It is also possible that compared to the disproportionately older single-adult households, these younger multiple-adults childless households have less of the pronounced attitude of pride and refusal of benefits that Hartmann finds for older households (Hartmann, 1985).

The last point is supported by our finding that the age of the household head affects social assistance take-up: take-up increases with age but at a decreasing rate. Up to age 49,

ceteris paribus, older heads are associated with a higher take-up rate, but for heads age 50 or older, the likelihood of claiming social assistance decreases.

Households living in the Eastern States of Germany are significantly less likely to claim benefits, which supports the hypothesis that stigma in the former East German states with their expectation of labor force participation is high enough to discourage welfare participation. The difference may also be explained by entitlement levels among households in the East that on average make up only three quarters of the average entitlement level of all households, both for claimers and for non-claimers. With lower benefits, participation becomes less likely.[26] Moreover, one should also consider that take-up of means-tested housing assistance (*Wohngeld*) in 1996 was significantly higher among East Germans[27], and as a result of this, it might be easier for East Germans to forgo some additional social assistance.

Population density at the household's residence has the predicted signs. The coefficient on rural is negative but fails to be significant at the ten percent significance level while the metropolitan indicator variable is significant and positive. These results lend substance to the claim that information is more easily distributed in more densely populated areas, and that the anonymity of living in a larger city reduces stigma.

While descriptive statistics indicated that foreign-born households were more likely to claim benefits, we do not find such differences after controlling for other factors. Foreign-born ethnic Germans are not statistically different from native households in their claiming behavior. For foreign-born foreigners the significance level is higher, suggesting a lower welfare participation rate. This confirms the hypotheses of higher application costs due to language barriers, higher stigma costs and possibly fear of losing the residency permit. Both the negative sign and the low level of significance support results found in Bird et al. (1999)

who provide evidence that immigrant household do not appear to enter Germany in order to abuse the social welfare system.

When we add social controls to the analysis (Column 2), we find that age no longer plays a role in determining take-up. Age differences in take-up rates appear to be captured in the variables that measure outlook in life and ties to the community. Of the social control variables, we find that respondents who are pessimistic when looking into the future are more likely to claim benefits. The same is true for households who do not attend church or other religious meetings. We thus find some support for the claim that stronger ties to the community affect the likelihood of claiming benefits.

Controlling for the employment status without social controls also eliminates the age effect (Column 3). Furthermore we find the expected result that when controlling for employment a household's predicted income no longer has an influence on the take-up behavior of the household, and the significant impact of living in a larger city becomes insignificant. Among the employment variables we find that eligible (low-income) households who work part-time cannot be distinguished with respect to program participation from similar eligible households who work full time. We do find, however, that households with unemployed heads and heads that are not employed are significantly more likely to take up social benefits than employed households. Voluntary and involuntary exclusion from the labor market is thus associated with higher reliance on welfare support.

Finally, when adding both social control and employment status variables the results remain essentially the same other than that the effect of a pessimistic attitude toward the future disappears when employment variables are added. Apparently - and not surprisingly - a pessimistic attitude is closely linked to the household's employment status. In all specifications, recent loss of income of more than twenty percent has a negative impact on

participation though the effect is insignificant, as is the positive impact of renting a housing unit. Thus we have only limited evidence of a duration effect and of delayed claiming.

We can use the coefficients from Table 4 to calculate predicted non-take-up rates for various population groups. Using the coefficients we calculate a non-take-up rate of 62.9 percent, slightly lower than the 63.1 percent in Table 1. These predicted probabilities allow us to determine whether controlling for demographics, social factors and employment status alters the non-take-up rates that are available for various population groups from simple descriptive cross-tabulations.

Looking at the predicted non-participation rate we find that the decreasing non-take-up rate for increasing numbers of children in the household that we saw in table 2 becomes more pronounced when we use the regression coefficients to determine the non-take-up rate. Without controls, the non-take-up rate of household with two children is 45.5 percent and that of three or more children 35.5 percent. With controls, the corresponding percentages become 43.3 and 19.8 percent. Having more children very much increases the probability of claiming benefits, *ceteris paribus*, particularly so for more than two children.

Also more pronounced are the effects of location. While descriptive statistics in table 2 suggest very similar non-take-up rates for urban and rural households, we now find that households living in metropolitan areas have a much lower predicted non-take-up rate of 53.5 percent while households in a rural setting have a higher predicted non-take-up rate of 66.6 percent.

On the other hand, we find that the lower non-take-up rate of single-parent households and unemployed households becomes less pronounced. After controlling for the impact of children and other factors, the non-take-up rate of single parents still remains lower than average at 55.7 percent, however, this is much closer to the average than the 28.1 percent found using cross-tabulations. Higher welfare participation of single parents thus appears to

be explained largely by the fact that there are children in the household and probably by differences in the employment status of the household head.

Entitlement Levels: Results from OLS Regressions on Entitlement Level

The entitlement level has a strong impact on the likelihood that a household claims benefits. We run simple linear regressions of the simulated entitlement level for claimers and non-claimers to address the questions whether entitlement levels differ systematically across population groups, and whether the impact differs for claiming and non-claiming households.

Results presented in Table 6 show a number of factors that have an impact on the entitlement level. Among the claiming households, each additional child adds about DM 190 to the household's entitlement level, which is approximately equal to 35 percent of the minimum income for an adult (*Eckregelsatz)*. Entitlement levels increase at the same rate as households needs, suggesting that claiming households are entitled to essentially the full amount of their needs. The effect is much smaller for non-claiming households, suggesting that non-claiming households have other incomes and are entitled to only a share of their overall needs.

Foreign-born foreign households have on average significantly higher entitlement levels if claiming while their forgone benefits from not claiming are not significantly different from those of native households. Foreign-born German households, on the other hand, are entitled to about the average amount of benefits when claiming while forgoing on average significantly lower benefits. This suggests that foreign-born German households are more likely to claim most of the benefits they are entitled to while foreign-born foreign households only claim benefits when the entitlement level is high.

Average unclaimed entitlements are also significantly lower for households living in the East and households with strong ties to their location and significantly higher for

households whose head works part-time or is not employed. Finally we conclude that households who never attend church and claim benefits are entitled to significantly larger benefits. We find this result difficult to explain. However, it is possible that religious organizations increase the stigma level - thus discouraging participation of it members regardless of the entitlement level- but that churches also provide information to their members. Lower application costs make claiming worthwhile at lower entitlement levels. Households that do not attend church are not subject to the same level of stigmatization – and thus have a higher participation rate - but also do not have access to as much information. For these households, then, the higher application costs will keep low-benefit households from applying – thus raising the average entitlement level among claimers.

As with the probit coefficients, we can use the regression coefficients from the Least Squares Regression to find predicted benefits level by claiming status for various population groups. Results are shown in Table 7. For all household we find that the average benefits level for claimers is DM 819 and for non-claimers DM 419. These are similar to the claimed and unclaimed entitlement levels in Table 1. For some of the population groups, predicted claimed and unclaimed benefits are rather different, though. Holding all else constant, the predicted unclaimed benefits for foreign-born German households is only DM 150 on average as compared to a descriptive value of DM 317. For foreign-born foreign households, descriptive statistics appear to overestimate their claimed benefits. Similarly, controlling for confounding factors increases the unclaimed benefits of unemployed heads and the claimed benefits for households with more than two children.

VIII. Concluding comments.

Analyzing the under-consumption of benefits in the German means-tested Social Assistance program we find not only that the non-take-up rate is high among German

households but also that it varies across population groups and that factors such as stigma, application costs and social ties affect households' likelihood of claiming.

Specifically, we calculate a non-take up rate of 63.1 percent for our base case. We also show that this value ranges from 52 to 74 percent if we allow for a ten percent margin of error each way in our determination of eligibility. In light of likely measurement errors in income and omissions or over-estimations in our simulation of a household's needs, such a range provides useful boundaries for the non-take-up rate of social benefits in Germany. If we allow for a 20 percent margin or error, the range of values for the non-take up rate is 41.3 to 82.0 percent, while a 5 percent margin of error leads to a range of 57.7 to 68.4 percent.

Our results further suggest that household characteristics can be associated with significantly different welfare participation rates after controlling for confounding factors in a multivariate regression analysis. The results of multivariate regression analysis suggest that eligible households with children are more likely to claim benefits and increasingly so the more children they have. Single-parent households, households living in a metropolitan area, unemployed households and households who are generally pessimistic about the future or feel powerless at affecting the course of their lives are also significantly more likely to participate. Households in rural areas and households without children, on the other hand, are less likely to participate.

Though our proxies are clearly not perfect, we find considerable evidence for the negative impact of stigma costs and high application costs on participation. Households with higher incomes, households living in the East and foreigners are likely to face higher stigma costs while households living in the anonymity of a large city and those without religious affiliation are likely to face lower stigma costs. All these proxies for stigma confirm a significant effect of stigma costs on non-participation in the social assistance program. Several characteristics can also be associated with higher application costs. Households

living in a large city, households with a better educated head, and households with several adults should face lower application costs while foreign households are likely to find claiming more costly because of language barriers. The coefficients on these variables confirm the hypothesis that higher application costs lead to lower participation rates. Several characteristics serve as proxies for both stigma and application costs, making it difficult to separate those two influences. However, our results suggest that measures to reduce stigmatization and application costs through, for example, simplifying application procedures, more anonymity for claimers through fewer visit to the aid agency, or better provision of information can be expected to reduce non-take-up of social benefits and thus help alleviate poverty in Germany.

With respect to the unpaid entitlements our results are qualitatively similar to those for the non-take-up rate. Not only is the fiscal savings rate rather substantial with 45.3 percent of all outstanding benefits, but also does it vary across population groups. The fiscal savings rate ranges between 36.4 and 55.6 percent if we allow for a ten percent margin of error. With a twenty percent margin of error, the rates vary from 30.2 percent to 66.6 percent, while a 5 percent margin of error leads to a "savings" range of 40.5 to 49.5 percent. As expected, the unclaimed benefits rate is substantially lower than the non-take-up rate since households are more likely not to claim if their entitlements are low. Policies to increase participation will increase program costs, but not proportionately.

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Table 1: Social Assistance (HLU) Take-Up and Monthly Entitlement Levels by Take-Up Status in Germany 1996

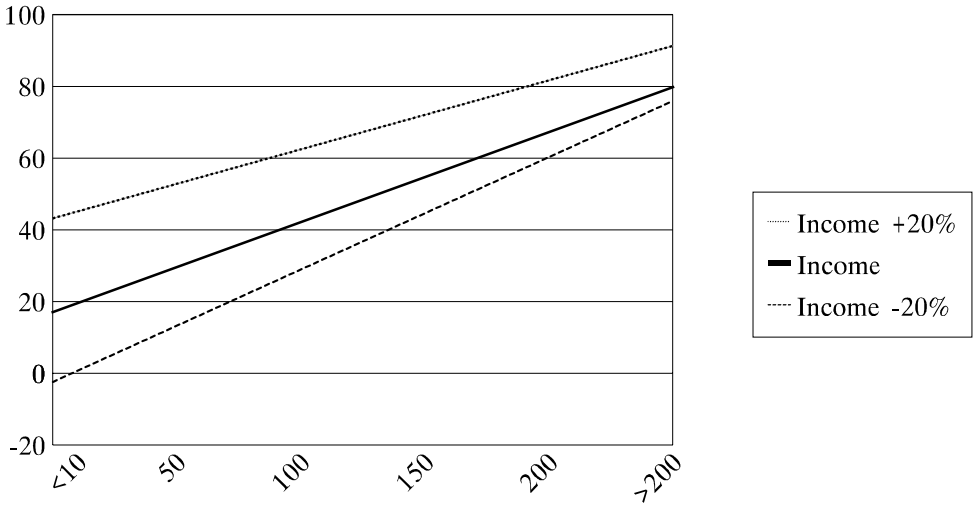
	Criteria for Eligibility: *Household Need* $HN_i > (1 \pm x)$ * *Adjusted Household Income* HY_i						
	x = .20	x = .10	x = .05	x = .00	x = -.05	x = -.10	x = -.20
Eligibility (in 1,000 Households; percent in parenthesis)							
Total Number of Households (*1000)	37,287	37,287	37,287	37,287	37,287	37,287	37,287
· Not eligible for HLU	35,783 (96.0)	35,428 (95.0)	35,195 (94.4)	34,868 (93.5)	34,463 (92.4)	33,870 (91.0)	32,343 (86.7)
· Eligible for HLU	1,504 (4.0)	1,859 (5.0)	2,092 (5.6)	2,420 (6.5)	2,824 (7.6)	3,417 (9.0)	4,944 (13.3)
· HLU receipt	892 (2.4)	892 (2.4)	892 (2.4)	892 (2.4)	892 (2.4)	892 (2.4)	892 (2.4)
· No HLU receipt	612 (1.6)	967 (2.6)	1,200 (3.2)	1,528 (4.1)	1,932 (5.2)	2,525 (6.8)	4,052 (10.9)
Non-take-up rate of HLU[a]	*41.3*	*52.4*	*57.7*	*63.1*	*68.4*	*73.9*	*82.0*
Entitlement Level (in DM / Month; Stdev. in parenthesis)							
· Eligible for HLU	619 (1084)	595 (1084)	585 (1073)	560 (1084)	551 (1078)	529 (1055)	518 (1008)
· HLU receipt	732 (1085)	792 (1075)	819 (1071)	830 (1126)	880 (1121)	902 (1152	959 (1236)
· No HLU receipt	459 (960)	416 (894)	413 (861)	401 (842)	399 (823)	398 (795)	421 (771)
Total Claimed Benefits (*1000 DM)	652,944	706,464	730,548	740,360	784,960	804,584	855,428
Total Unclaimed Benefits (*1,000 DM)	280,908	402,272	495,600	614,256	770,868	1,004,950	1,705,892
Unclaimed Benefits Rate[b]	*30.2*	*36.4*	*40.5*	*45.3*	*49.5*	*55.6*	*66.6*

[a] Number of households not receiving HLU (non-claimers) out of all eligible households (the so-called *Dunkelziffer*).

[b] Estimated total benefits for non-claimers out of estimated total benefits for all eligible households.

Source: SOEP 1996, Authors' calculations, weighted.

Fig. 1: Take-up rates by Entitlement
- in % of all eligible households -



Source: GSOEP 1996; own calculations.

Table 2: Social Assistance Take-Up Rates and Average Monthly Entitlement Levels by Take-Up Status for Eligible Households by Household Characteristics (1996)

Characteristic	Eligible Household[a]	Non-Take-Up Rate[b]	Claimed Benefits (DM / Month)	Unclaimed Benefits (DM / Month)	Unclaimed Benefits Rate[c]
All Households	6.5	63.1	830	401	45.3
Household Head[d] with age ≥ 70	5.3	77.5	731	408	65.7
Household Head with age ≥ 60	5.3	77.5	705	335	62.1
Household Head with age ≥ 50	5.2	65.6	711	369	49.8
Household Head with age < 50	7.6	61.6	893	422	43.1
Female Head of Household	9.3	58.0	831	396	39.7
One Child	11.8	55.0	892	488	40.1
Two Children	7.0	45.5	1,106	580	30.4
More Than Two Children	16.5	35.5	1,093	786	28.5
Single Parent Household	38.8	28.1	929	517	17.8
Several Adults with Child(ren)	6.5	66.8	1,122	588	51.4
Several Adults without Children	2.8	73.9	912	481	59.8
Living in a Metropolitan Area	6.7	66.4	974	309	38.5
Living in a Rural Area	6.7	64.8	789	453	51.4
Living in a Rented Apartment/House	8.9	59.4	851	383	39.7
Living in the Eastern States	7.3	66.9	669	309	48.2
Foreign Born Ethnic German Head	10.4	54.5	887	317	29.9
Foreign Born Foreign Head	14.5	52.1	1099	360	26.2
Head Works Full Time	2.2	80.7	670	441	62.8
Head Works Part Time	10.6	84.1	827	508	76.6
Head is Unemployed	25.5	38.6	781	362	22.6
Head is not Employed	26.3	42.9	1024	502	26.9
Head is Retired	6.1	80.2	528	305	70.1

[a] In percent of population.
[b] Number of households not receiving HLU (non-claimers) out of all eligible households.
[c] Estimated total benefits for non-claimers out of estimated total benefits for all eligible households.
[d] The head of the household is defined as the member of the household that is the main income earner. If no main income earner can be found, we maintain the designation as head from the GSOEP.

Source: SOEP 1996, Authors' calculations, weighted.

Table 3: Summary Statistic by Eligibility and Claiming Status

Characteristic	Not Eligible	Eligible		
		Total	Non-Claimers	Claimers
Needs Income HNi (DM)	1734 (1717)	1682 (1791)	1619 (1755)	1790 (1824)
Adjusted Household Income (DM)	3794 (5465)	1278 (1919)	1315 (1661)	1213 (2242)
Foreign-Born Ethnic German Head (%)	0.041 (0.473)	0.069 (0.602)	0.060 (0.580)	0.085 (0.634)
Foreign-Born Foreign Head (%)	0.072 (0.618)	0.177 (0.908)	0.146 (0.867)	0.230 (0.956)
Total Number of Kids Age <17	0.382 (1.852)	0.683 (2.536)	0.492 (2.267)	1.009 (2.737)
Single Parent (%)	0.018 (0.319)	0.167 (0.886)	0.074 (0.643)	0.325 (1.063)
Several Adults without Children (%)	0.413 (1.174)	0.174 (0.900)	0.203 (0.986)	0.123 (0.746)
Several Adults with Child(ren) (%)	0.205 (0.963)	0.207 (0.963)	0.219 (1.014)	0.186 (0.884)
Age of Household Head (Years)	49.6 (41.5)	44.8 (45.6)	45.7 (50.1)	43.2 (37.8)
No secondary education (%)	0.167 (0.888)	0.436 (1.179)	0.452 (1.220)	0.409 (1.116)
Post secondary education (%)	0.294 (1.086)	0.093 (0.691)	0.096 (0.723)	0.088 (0.643)
Northern States of West Germany (%)	0.202 (0.957)	0.194 (0.940)	0.196 (0.974)	0.190 (0.890)
East Germany (%)	0.181 (0.918)	0.206 (0.961)	0.218 (1.013)	0.185 (0.881)
Western States of West Germany (%)	0.349 (1.137)	0.331 (1.119)	0.337 (1.159)	0.320 (1.059)
Metropolitan area (%)	0.190 (0.936)	0.198 (0.948)	0.208 (0.996)	0.181 (0.874)
Rural area (%)	0.384 (1.160)	0.396 (1.163)	0.406 (1.204)	0.377 (1.101)
Renting housing unit (%)	0.610 (1.163)	0.856 (0.835)	0.805 (0.971)	0.943 (0.528)
Income loss since last year >= 20% (%)	0.183 (0.923)	0.128 (0.794)	0.176 (0.935)	0.044 (0.468)
Pessimist (%)	0.060 (0.568)	0.112 (0.750)	0.049 (0.531)	0.220 (0.941)
Believes own behavior does not affect course of own life (%)	0.016 (0.301)	0.115 (0.759)	0.027 (0.394)	0.267 (1.004)
Has strong ties to location (%)	0.786 (0.978)	0.668 (1.120)	0.725 (1.095)	0.570 (1.124)
Does never attend church or religious meetings (%)	0.522 (1.191)	0.561 (1.180)	0.510 (1.226)	0.647 (1.085)
Head works Part Time (%)	0.056 (0.547)	0.095 (0.696)	0.126 (0.815)	0.041 (0.448)
Head is Unemployed (%)	0.044 (0.490)	0.218 (0.982)	0.134 (0.834)	0.363 (1.092)
Head is Not Employed (%)	0.046 (0.501)	0.238 (1.012)	0.162 (0.903)	0.369 (1.095)
Head is Retired (%)	0.282 (1.073)	0.264 (1.049)	0.336 (1.158)	0.142 (0.793)

Source: SOEP 1996, Authors' calculations

Table 4: Social Assistance Take-up Probit Regressions with HLU=1,0
(standard error in parenthesis)

Characteristic	Short List	Added Social Controls	Added Employment	Full Model
	(1)	(2)	(3)	(4)
Intercept	-0.121 (.625)	0.022 (.656)	1.226* (.727)	-1.097 (.763)
Predicted Income (*1000)	-0.614** (.164)	-0.584** (.164)	-0.236 (.208)	-0.239 (.209)
Foreign-Born Ethnic German Head	0.083 (.232)	0.091 (.240)	0.075 (.236)	0.106 (.244)
Foreign-Born Foreign Head	-0.226 (.184)	-0.157 (.188)	-0.161 (.194)	-0.086 (.199)
Total Number of Kids Age <17	0.541** (.099)	0.521** (.100)	0.381** (.110)	0.378** (.110)
Single Parent	-0.026 (.244)	0.019 (.249)	0.195 (.267)	0.223 (.272)
Several Adults without Child(ren)	1.099** (.312)	1.077** (.320)	0.611* (.364)	0.627* (.367)
Several Adults with Child(ren)	-0.034 (.265)	0.042 (.268)	0.281 (.281)	-0.193 (.285)
Age of head (*10)	0.521** (.265)	0.386 (.274)	0.356 (.287)	0.263 (.294)
[Age of head (*10)]^2	-0.053* (.027)	-0.039 (.028)	-0.031 (.029)	-0.023 (.030)
No secondary education	-0.058 (.166)	-0.052 (.169)	0.084 (.175)	0.073 (.178)
Post secondary education	0.401 (.280)	0.353 (.283)	0.154 (.298)	0.124 (.301)
North	-0.295 (.214)	-0.346 (.221)	-0.232 (.219)	-0.277 (.224)
East	-0.734** (.241)	-0.837** (.249)	-0.510** (.254)	-0.623** (.261)
West	-0.078 (.173)	0.122 (.179)	0.007 (.177)	-0.049 (.182)
Metropolitan area	0.386* (.198)	0.411** (.201)	0.266 (.205)	0.298 (.208)
Rural area	-0.217 (.162)	-0.197 (.165)	-0.190 (.165)	-0.166 (.168)
Renting housing unit	0.028 (.314)	-0.080 (.323)	0.211 (.333)	0.117 (.342)
Income loss since last year >= 20%	-0.302 (.256)	-0.327 (.262)	-0.356 (.260)	-0.364 (.265)
Pessimist	--- ---	0.473** (.234)	--- ---	0.383 (.240)
Believes own behavior does not affect course of own life	--- ---	0.431 (.282)	--- ---	0.436 (.285)
Has strong ties to location	--- ---	-0.164 (.141)	--- ---	-0.104 (.144)
Does never attend church or religious meetings	--- ---	0.335** (.149)	--- ---	0.323** (.151)
Head works Part Time	--- ---	--- ---	0.037 (.263)	-0.049 (.265)
Head is Unemployed	--- ---	--- ---	0.627** (.228)	0.545** (.234)
Head is Not Employed	--- ---	--- ---	0.727** (.232)	0.681** (.235)
Head is Retired	--- ---	--- ---	-0.012 (.303)	0.051 (.311)
Log likelihood (n = 429)	253.9	243.4	243.7	236.0

* statistically significant at the 10 % significance level
** statistically significant at the 5% significance level

The omitted categories point to a single-adult, native household with secondary education, living in a smaller town in the South of Germany in an apartment or house that he/she owns. He/she also works full time, has little attachment to the community, does attend church or other religious gatherings, is generally optimistic and believes that her actions to a certain degree affect the course of her life.

Source: SOEP 1996, Authors' calculations

Table 5: Estimated Probability of *Non-Take-Up* of Social Assistance

Situation (always all else average)	Predicted Probability of Non-take-up (%)
All Households With Average Characteristics	62.9
Foreign-Born Ethnic German Head	63.1
Foreign-Born Foreign Head	62.3
No Children in the Household	72.2
One Child in the Household	58.3
Two Children in the Household	43.3
Several Children in the Household	19.8
Single-Parent Household	55.7
Living in Metropolitan Area	53.6
Living in Rural Area	66.6
Head is Unemployed	46.1
Head Believes Own Behavior Does Not Affect Course of Own Life	47.7
Pessimist	49.6

The percentages in the table represent fitted values from the probit regression of table 4. Averages are weighted averages.

Source: SOEP 1996, Authors' calculations

Table 6: Ordinary Least Squares Regression of the Entitlement Level for Households That are Eligible to Receive Social Assistance Benefits

Characteristic	Households Claiming Benefits		Households not Claiming Benefits	
	Coeff.	Std.Err.	Coeff.	Std.Err.
Intercept	438.82	402.95	519.50**	261.61
Predicted Income (*1000)	-186.9	120.31	23.29	65.59
Foreign-Born Ethnic German Head	47.81	132.24	-179.65**	90.43
Foreign-Born Foreign Head	277.31**	105.93	8.73	68.07
Total Number of Kids Age <17	190.02**	58.59	67.90*	38.38
Single Parent	73.51	139.23	133.10	96.10
Several Adults without Child(ren)	400.24*	212.11	106.96	119.75
Several Adults with Child(ren)	328.51**	143.91	122.82	103.04
Age of head (*10)	144.71	174.29	-91.24	93.34
[Age of head (*10)]^2	-12.43	17.72	10.21	9.30
No secondary education	-165.23*	93.14	-20.89	60.10
Post secondary education	188.20	178.60	79.35	92.40
North	209.70*	118.07	25.90	76.70
East	-79.26	148.76	-151.24*	80.00
West	136.14	95.89	56.70	60.35
Metropolitan area	113.18	100.42	-66.20	77.12
Rural area	-54.21	97.05	88.48*	54.54
Renting housing unit	-139.17	222.52	-93.09	95.47
Income loss since last year >= 20%	40.01	176.75	-18.00	73.33
Pessimist	92.75	116.97	-52.29	94.02
Believes own behavior does not affect course of own life	83.43	126.76	6.37	114.15
Has strong ties to location	-26.27	76.17	-102.89**	50.31
Does never attend church or religious meetings	184.56**	87.25	12.33	49.09
Head works Part Time	49.36	169.37	157.52**	76.74
Head is Unemployed	-110.65	137.62	48.44	76.30
Head is Not Employed	233.94*	140.18	156.41**	79.02
Head is Retired	-71.36	180.32	5.21	98.61
R^2 (n=429)	0.3843		0.2254	
Adjusted R^2	0.2754		0.1371	

* statistically significant at the 10 % significance level

** statistically significant at the 5% significance level

Source: SOEP 1996, Authors' calculations

Table 7: Estimated Benefits Level for Eligible Claimers and Non-Claimers

Household Characteristic	Benefits (DM/month) [a]	
	Claimers	Non-Claimers
All Households With Average Characteristics	819	419
Foreign-Born Ethnic German Head	815	150
Foreign-Born Foreign Head	755	426
No Children in the Household	627	385
One Child in the Household	818	453
Two Children in the Household	1008	521
Several Children in the Household	1350	643
Single-Parent Household	868	542
Living in Metropolitan Area, all else average	912	366
Living in Rural Area, all else average	786	471
Head is unemployed	749	461
Head Believes Own Behavior Does Not Affect Course of Own Life	880	425
Pessimist	892	369

[a] The values in the table represent predicted values from the ordinary least squares regression presented in table 6. Averages are weighted averages.

Source: SOEP 1996, Authors' calculations

Appendix Table:

Table A1: Ordinary Least Squares Instrumenting Regression for Adjusted Family Income (Standard error in parenthesis)

Variable	ß	Std. Err.
Intercept	785.99	226.55
Foreign-Born Ethnic German Head	-43.27	107.64
Foreign-Born Foreign Head	-144.47	79.04
Total Number of Kids Age <17	390.99	43.20
Single Parent	-516.97	154.09
Several Adults without Children	1499.76	62.33
Several Adults with Child(ren)	818.23	94.17
Age of Head	873.57	92.32
Age of Head ^{2}	-77.82	9.29
No secondary education	-302.62	66.21
Post secondary education	557.57	61.70
Living in North	-138.45	76.80
Living in East	-676.16	68.68
Living in West	-139.11	62.85
Living in metropolitan area	-785.53	54.82
Living in rural area	148.95	72.16
Renting housing unit	-158.74	52.82
Father without secondary education	-167.24	62.27
Father with post secondary education	136.32	66.13
Mother without secondary education	-113.99	55.74
Mother with post secondary education	50.13	116.93
ISCO: Science	1203.20	124.53
Management	2148.51	172.78
Office	629.00	121.56
Trade	987.07	170.31
Service	297.05	146.11
Agriculture	182.73	332.21
Manufacturing	434.12	108.73
Industry: Agriculture	-135.07	332.17
Energy	284.94	216.99
Chemistry	679.46	166.26
Plastics	452.96	328.68
Stone	-53.17	364.52
Metal	531.87	113.69
Wood	404.33	200.84
Textile	284.82	283.71
Food	-100.28	212.04
Construction	382.23	127.09
Trade	54.19	145.45
Transportation	145.67	144.83
Banking	556.49	182.00
Other service	158.48	122.28
Non-profit	-315.64	218.98
Public Sector	274.61	131.98
Adjusted R^2 (N=6567)	0.374	

Source: SOEP 1996, Authors' calculations

Endnotes

[1] See van Oorschot (1998), Hartmann (1985), and Moffitt (1983) for a more detailed discussion of the social and economic implications of a low take-up of social benefits.

[2] Data presented by the Federal Bureau of Statistics, for example, show that the receipt of social assistance was noticeably higher in 1997 among single parents, children, single adults, foreigners, and women than in the entire population (*Statistisches Bundesamt*, 1999). Neumann and Hertz (1998) show that in 1995 a relatively high proportion of children, women, foreigners, and larger families remain poor in the sense of not claiming benefits though having incomes below what the social assistance guidelines deem necessary.

[3] An obvious shortcoming of this approach is that it cannot provide reasons for why certain characteristics are associated with a higher probability of claiming benefits. Much of our understanding about the reasons for not claiming benefits for which one is eligible comes from sociological studies based on surveys of eligible individuals. Craig (1991) and van Oorschot (1991, 1998) provide detailed discussion of the threshold models. In a nutshell, these studies model the claiming process as a process of crossing thresholds. Not passing a threshold would lead to non-take up of the benefits. For example, if a household does not perceive the benefits as useful in meeting their perceived needs, they will not claim. Some studies also investigate the strength of the thresholds and allow for trade-offs, interconnections and the sudden impact of triggers. For example, a strong negative attitude toward benefits in general can keep a household from being aware of the existence of the benefits, but the break-up of the family can trigger changes in the attitudes toward benefits. More recent work has added to the client-based threshold models features at the administrative level and at the scheme level that help explain non-claiming (van Oorschot, 1998). At the administrative level, giving insufficient information and advice, the use of complex forms, and handling of the claims in a way that is perceived as humiliating, for example, all contribute to higher rates of non-take up. At the scheme level, such features as vague entitlement criteria, means-testing, and whether or not the benefits supplement other income contribute to non-take up.

[4] In the context of sociologists' threshold models the level of entitlements will affect several of the thresholds. Households with a higher level of entitlement and consequently lower own income, *ceteris paribus*, are more likely to perceive the need for assistance, to perceive themselves as eligible for benefits, and to obtain more utility from receiving the benefits. Furthermore, because they perceive themselves more in need of assistance, they are more informed about the available benefits and more likely to apply for support (van Oorschot, 1991,1998). Another possible explanation is that the distaste for social welfare and hence the stigma effect is influenced by the proportion of households in one's peer group that receives welfare. Households near the cut-off will probably be in a peer group with more households who are not eligible for welfare such that the stigma effect can be expected to be larger for these households (Craig, 1991).

[5] Results for the instrumenting regression can be found in table A1 in the appendix. Another approach for dealing with the correlation and the biases from selecting on income is estimating eligibility and take-up simultaneously in a bivariate probit estimation. When doing so in our empirical work we find that a bivariate probit produces the same results in terms of sign and significance as our instrumenting-approach. We would argue that using an instrument for income is the better approach because it controls more directly for the selection process.

[6] There are some other means-tested programs. Certain forms of old-age pensions are available to people in circumstances of special need, and *Wohngeld* (housing subsidies) are based on annual family income, actual housing costs and the number of household members. Although less important now than in years past, the system of *Lastenausgleich* (equalizing the burdens of WWII) has an explicit means-testing aspect, and some of the special programs designed to help East Germans after unification have been means-tested as well. On the whole, however, these programs are not very large compared to the SA system.

[7] The remaining 17.5 percent of the SA system's expenditures for non-institutionalized clients are made up by *Hilfe in besonderen Lebenslagen* (HBL). Under HBL, income assistance is provided for people in certain circumstances where some expenditure is considered necessary, but the expenditure is too high for the household's current income (see Bundesministerium für Arbeit und Sozialordnung, 1990, pp. 452ff). Thus, pregnant mothers may receive HBL assistance to obtain pre-natal care; disabled citizens may receive one-time

help that allows integration into a certain workplace; if the main bread-winner of a household dies, temporary assistance may be given to some other household member to keep the household intact until new sources of income are found; temporarily homeless persons may be assisted with cash until some housing arrangement can be found; and persons with addictions or severe mental illness may be given one-time help to access temporary crisis services.

[8] Some HLU goes to people in institutions, where the payments are made directly to the institution and not to the individual. Since we explicitly exclude institutionalized people from our data, for our purposes HLU is basically a cash assistance system.

[9] The German Social Assistance Program and provisions laid out in the German civil law also make it mandatory for parents to help their adult children and for adult children to support their parents before claiming social assistance benefits. Parents may not be required to support their adult child in case of pregnancy or when raising an own child up to the age of 6 years. For the most part, these provisions are not incorporated in our simulation to its full extent for lack of detail in the data. Some of the support is part of our analysis if it comes in the form private transfers from outside the household which should be included in our income measure.

[10] The German Social Assistance Program defines as the relevant unit for determining needs the immediate family. It is – strictly speaking – the situation of the family or needs community (the so-called *Bedarfsgemeinschaft*) that determines eligibility and benefits levels. With the understanding that this needs community generally coincides with the household as defined by the GSOEP, our unit of observation throughout the empirical work will be the household.

[11] In detail these weights for 1996 are set up as follows: 0 through 7 years: 0.50; 8 through 14 years: 0.65; 15 through 18 years: 0.90; 19 and over: 0.80.

[12] In detail, these circumstances and their corresponding additional weights are as follows: Aged 65 and over: 20%; Aged less than 65 but severely disabled: 20%; Pregnant women: 20%; Lone parent with 1 child aged less than 7 years: 40%; Lone parent with 2 or 3 children aged less than 16 years: 40%; lone parent with 4 or more children aged less than 16 years: 60%; Aged 15 and over and eligible for integration assistance for the disabled: 40%. In order to define pregnancy we make use of the longitudinal features of the GSOEP data by controlling for motherhood of a newborn child in the following year.

[13] The needs thresholds are changed each year as of the first of July. Since interviews in the SOEP are almost exclusively conducted in the first half of the year, and since the 1995 needs thresholds remained valid until the end of June of 1996, we are using the 1995 needs threshold in our simulations.

[14] To identify the housing costs need of a given household we use the actual housing costs, observed in the SOEP separately for tenants and owner-occupiers. We then apply a top-trimming to these costs given by the average housing costs of main tenants (rent plus costs for heating and warm water) broken down for East- and West-Germany (here also broken down by categories of community size). By this method we reduce the number of households which would otherwise be identified as eligible for HLU, just because they live in very expensive apartments or houses. In fact, a comparison of our (top-trimmed) housing costs with the official statistics on housing costs for households receiving housing assistance (*Wohngeld*) shows a very high degree of accordance and also very well mirrors the actual figures.

[15] In general, the idea is to leave a certain amount of labor income to the employee which is not taken into account when calculating eligibility. This amount varies with the health status of the employed person. Detailed information about deductible expenditures can be obtained from the original statutes of law (BSHG, *Bundes-Sozialhilfe-Gesetz*); information on the algorithm used for our simulation is available from the authors upon request.

[16] In the simulations we make a number of adjustments to better reflect eligibility and take up. Especially, one needs to consider that in principle the receipt of social assistance requires that all income sources above a certain minimum level are used first („*Nachrangigkeitsprinzip der Sozialhilfe*„). Riphahn (2000) highlights the importance of including this provision by showing the impact that ignoring it has on eligibility

and non-take up. For each of the eligibility cut-offs, we rule households ineligible if they have income from interest or dividends that exceeded DM500, or that indicate that someone in the family has income from the rent or lease of real estate. This adjustment is made unless the household reports actual receipt of social assistance. In each scenario, a households that reports actual receipt of assistance will be eligible regardless of our simulations as long as the household would be eligible if we used only 2/3 of their income (this was given for 33 households, only). If they do not become eligible using 2/3 of their income but report receipt of assistance, the household is deleted from the sample, since we must assume wrong information on either income or receipt of social assistance (this was true for 12 households).

[17] For example, we do not know precisely the stage of an expecting mother's pregnancy so that we may incorrectly assign additional needs to an expecting mother who does not qualify at that point in time.

[18] Hartmann (1985, pp. 174-75) discusses various possibilities for granting HLU even if the household's income exceeds the needs threshold. Especially, housing cost could be over-reported to the administrators and one-time support (*einmalige Leistungen*) that help households on an irregular basis to cover more costly expenses may lead to receipt of HLU even as the income exceeds the needs threshold.

[19] Calling this number the rate of poverty (*Armutsrate*) is not unambiguous. Particularly in light of Hartmann's (1985) finding of a great density of households right around the needs threshold the distinction between *non-poor* for households with incomes slightly above the needs threshold and *poor* for those slightly below appears at best arbitrary.

[20] Riphahn's (2000) somewhat lower proportion can at least in part be explained by differences in the data used and in the simulations. Riphahn uses data from the Income and Expenditure Survey (EVS). Though its main strength is its sample size, the EVS has some significant short-comings because it is not as representative a sample as the GSOEP. Particularly, it under-represents the foreign population and probably does so selectively because being a voluntary quota sample probably implies that more assimilated foreign households are more likely to participate. Foreign households tend to be larger and tend to have higher needs and lower income. In the simulations, we would like to point out a couple of differences. First, Riphahn includes fewer of the additions to needs income than we do. To the best of our knowledge, Riphahn does not include additions for pregnant women and families of war veterans that are included in our simulations. Second, social assistance receipt is measured as receipt during at least one month in the previous year while the eligibility restrictions apply to the household's situation at the end of the year. This could lead to imprecisions. Households whose economic situation has improved over the year and may not be considered eligible even if they were in the month(s) during which they received assistance. It is thus likely that Riphahn's base case scenario underestimates both the proportion of eligible households and the proportion of hidden poor households *out of all* households. However, we would like to emphasize that as a proportion *of all eligible* households, our estimated non-take-up rate is almost identical to that found be Riphahn (63.1 percent versus 62.7 percent).

[21] Claiming behavior in case of unemployment is likely to be influenced by characteristics of the local labor market as well. Frick (1985) supports this hypothesis by showing an increase in the positive correlation of unemployment and HLU take-up over the period 1979 to 1982. Additionally, he finds that HLU-density is significantly higher in areas with high unemployment and poor chances of re-integration in the labor market.

[22] We define as *rural* households those that live in towns with fewer than 20,000 inhabitants and as *metropolitan* those households that live in cities with more than 500,000 inhabitants.

[23] See for example Hartmann (1985) who finds in a survey of eligible non-participants that for elderly people an attitude of rejection played a major role in their non-participation.

[24] Blank and Ruggles (1996) find no evidence for delayed claiming. For Aid to Families with Depend Children (AFDC) and food stamps they find that for claiming households participation spells start almost immediately upon becoming eligible.

[25] The operationalization of these variables might be confronted with the problem of endogeneity. However, using a measure from a previous year would result in a case selection for those observations in the

GSOEP that took part in the survey for some consecutive years. Additionally, not all indicators are available for each observation year.

[26] We also find that adjusted incomes in the East are on average similar to those in the rest of Germany (DM 1,555 versus DM 1,569) while they deviate less (DM 778 versus DM 963). Because of the higher density of incomes in the East, we may have more households that are close to the eligibility cut-off but do not qualify. However, when looking at regression results using a less stringent eligibility criterion that should define more of those households as eligible, the coefficient on East remains statistically significant.

[27] Based on GSOEP data, Frick and Lahmann (1997) found 6.5% of all main tenants in West Germany to receive housing assistance, whereas this rate was twice as high in East Germany (13.1%).