ECONSTOR
Make Your Publications Visible.

A Service of
ZBW
Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Fuchs, Michael

Working Paper

Social assistance - no, thanks? Empirical amalysis of non-take-up in Austria 2003

EUROMOD Working Paper, No. EM4/07

Provided in Cooperation with:
Institute for Social and Economic Research (ISER), University of Essex

Suggested Citation: Fuchs, Michael (2007) : Social assistance - no, thanks? Empirical amalysis of non-take-up in Austria 2003, EUROMOD Working Paper, No. EM4/07, University of Essex, Institute for Social and Economic Research (ISER), Colchester

This Version is available at:
https://hdl.handle.net/10419/68975

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

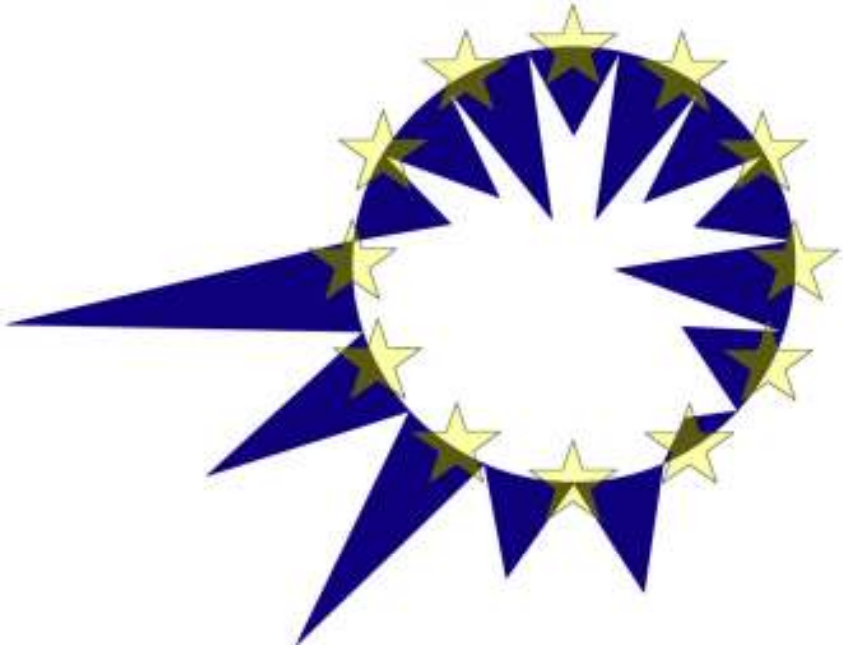
If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

WWW.ECONSTOR.EU

Mitglied der Leibniz-Gemeinschaft

EUROMOD

WORKING PAPER SERIES



EUROMOD Working Paper No. EM4/07

SOCIAL ASSISTANCE – NO, THANKS?
EMPIRICAL ANALYSIS OF NON-TAKE-UP IN AUSTRIA 2003

Michael Fuchs

August 2007

SOCIAL ASSISTANCE – NO, THANKS? EMPIRICAL ANALYSIS OF NON-TAKE-UP IN AUSTRIA 2003*

Michael Fuchs

European Centre for Social Welfare Policy and Research, Vienna

* This paper uses EUROMOD version C7. EUROMOD is continually being improved and updated and the results presented here represent the best available at the time of writing. Any remaining errors, results produced, interpretations or views presented are the author's responsibility. This paper uses data from the Austrian version of the EU-SILC made available by Statistik Austria. Statistik Austria does not bear any responsibility for the analysis or interpretation of the data reported here.

SOCIAL ASSISTANCE – NO, THANKS? EMPIRICAL ANALYSIS OF NON-TAKE-UP IN AUSTRIA 2003

Michael Fuchs[1]

Abstract

Based on the comparison of detailed micro-data (EU-SILC), official figures on recipients and expenditure as well as potential entitlements simulated with the tax/benefit microsimulation model EUROMOD, the paper estimates the size of non-take-up of monetary social assistance benefits in Austria in 2003. To account for likely measurement errors both in the reported income data as well as in the simulation of household needs, participation rates are calculated for various scenarios of the underlying parameters. I find that more than half of all households potentially entitled to the benefit do not claim. The determinants of non-take-up analysed in different regression models controlling for possible endogeneity of independent variables – significant higher participation rates inter alia in case of higher amounts entitled to, a non-employed head, living in Vienna – confirm hypotheses derived from theoretical models of take-up related to pecuniary determinants, information and administration costs as well as psychological costs.

JEL Classification: D31, H31, H53, I38

Keywords: Austria, take-up, social assistance, microsimulation

Corresponding author:

Michael Fuchs

European Centre for Social Welfare Policy and Research

Berggasse 17

A-1090 Wien

AUSTRIA

E-mail: fuchs@euro.centre.org

---

[1] This paper was written as part of the *Accurate Income Measurement for the Assessment of Public Policies* project (AIM-AP), funded as Specific Targeted Research or Innovation Project within the 6th Framework Programme of the European Commission (project no. 028412). I am indebted to all past and current members of the EUROMOD consortium for the construction and development of EUROMOD. I am grateful for advice and comments from Olivier Bargain, Joachim Frick, Olaf Groh-Samberg, Manos Matsaganis, Stephen Pudney, Holly Sutherland and Asghar Zaidi. I also thank Christine Lietz for the close collaboration in implementing EU-SILC 2004 data (provided by Statistics Austria) in EUROMOD. However, any errors and the views expressed in this paper are the author's responsibility. In particular, the paper does not represent the views of the institution to which the author is affiliated.

1 Introduction

The research aim of this paper is twofold: on the one hand it analyses the functioning and relevance of a "last" safety net in Austria by providing up-to-date estimates on the size (both in terms of caseload and benefit amounts) and determinants of non-take-up of social assistance. This gains even more in importance as for Austria it represents the first analysis of this kind based on detailed empirical data.

On the other hand there is also a methodological interest: the results could contribute towards the objective of "promoting and supporting comparative research, methodologies and data generation" by revising poverty and income distribution statistics currently derived from tax/benefit simulation models without correcting for errors in targeting benefits.[2] The assumption that all potentially entitled persons actually receive the benefit biases the analysis of income inequality and related indicators.

The interest in the investigation is also driven by the fact that low participation rates may distort the intended impact of targeted social transfers. Furthermore, the social and financial outcomes of benefit reforms (in Austria, a needs-oriented basic security benefit is foreseen for 2009 which should replace the current monetary social assistance benefits) are much more unclear without information on current non-take-up, notwithstanding that claiming behaviour is influenced by possible reforms, too.

However, likely measurement errors make the analysis difficult. If for several reasons, incomes earned or benefits received reported in the underlying micro-data diverge from the "true" situation and/or the simulation of potential eligibility for social assistance is not error-free, estimates of benefit take-up will be biased, too. Thus, the paper provides some kind of sensitivity analysis by calculating participation rates under various scenarios and assumptions for the underlying parameters.

In combination with possible further research, the results could be used to correct existing modelling for Austria in the tax/benefit microsimulation model EUROMOD, where receipt of social assistance is currently imputed under the assumption of full take-up. On the basis of

[2] Targeting errors do not only include non-take-up (eligible persons do not claim) but also "leakage" (non-eligible persons receiving benefits). Analysis of the latter is not included in this paper.

correlates with socio-demographic variables, a somewhat standardised procedure accounting for target inefficiency could be elaborated.

The paper is organised as follows: after a short literature review on the determinants and consequences of non-take-up, section 2 presents available empirical data on participation rates related to social assistance in the Member States of the European Union. Section 3 provides specific information on social assistance in Austria (both institutional settings and official figures on recipients and expenditure). The methods used in this paper to analyse the size of non-take-up and potential measurement errors are discussed in section 4. Section 5 is dedicated to the empirical results of the analysis: non-take-up estimations derived from the base scenario and from various scenarios used for a sensitivity analysis. Furthermore, the determinants of the "decision" whether to participate or not are investigated in different regression models. Section 6 concludes.

2 Short literature review

2.1 Determinants of non take-up

The economic literature (see for example Anderson/Meyer 1997, Blank/Ruggles 1996, Engels 2001, Hernanz et al. 2004, Kayser/Frick 2001, Riphahn 2001) provides theoretical models of the determinants of (non-)take-up. They stress the direct and indirect costs of applying which include both objective barriers and subjective motives. For descriptive purposes they can be subsumed under four categories (not exhaustive):

1. Pecuniary determinants in the sense of a rational cost-benefit equation: the focus of this category is on the level of benefits and the expected duration of receipt. A renouncement to claim will take place if the expected benefit amount is too low and/or the expected duration of the benefit spell is too short to offset costs (claiming is costly in terms of time and effort, e.g. queuing, filling forms, need to report detailed information about incomes, assets and family characteristics to the welfare agency, checks on the willingness to accept suitable job offers, etc.). On the other hand, the (almost) moneyless will hardly be able to "decide" not to claim.[3]

[3] The fact that households who are entitled to higher benefit levels have substantially higher participation rates is also shown by Dahan/Nisan (2007) in a quasi-natural experiment: compared to the control group, households who expanded by two members over time and as a result are eligible for a higher benefit level show increased take-up rates.

2. Information costs about benefit regulations and application procedures: collecting, understanding and completing application procedures imply costs. Entitled persons may abstain from taking-up if the expected benefit is low, or if the procedures are too complex or disorganised. This includes different degrees of lack of information (up to being not aware of the benefit at all or the eligibility for it), des-information and wanting access to help. However, it is partly assumed that "today's" potential social assistance clients (e.g. lone parents, long-term unemployed) are in principle better informed about their rights. In particular, individuals already depending on welfare are more familiar with application procedures and the welfare bureaucracy and thus, more likely to claim. Nevertheless, there seems to be still ignorance on specific regulations, e.g., entitlement to (supplementary) benefits in extension of low employment or unemployment incomes.

3. Administrative costs related to the duration of the administrative process and to uncertainties about the application outcome: frequently it takes time till an application is submitted and processed. If the expected eligibility spell is short or there are concrete expectations about future incomes (e.g., expectation to take up a new job relatively quickly), potential claimants may be induced not to participate.[4] Thus, state aid is refused as the current distress is perceived as only temporary or can be overcome on one's own account. Regarding entitlement uncertainty it is assumed that a higher probability for acceptance of the welfare application (e.g., in the case of families with children, etc.) will lead to higher take-up.

4. Social and psychological costs: these "indirect" costs include the overall perception of state aid as degrading. In addition, the targeting of benefits to specific groups may expose them to stigmatisation. There might also be a general fear to encounter the administrative process or fear of failure in the light of expected social behaviour. The acting of welfare officials towards claimants may also be perceived as humiliating, particularly if the administration acts as a fraud controller, too.

The relative weight of the factors depends on the specific programme and may vary also from country to country and individual to individual. Some of them might also be classified under more than one category.

---

[4] In Austria, a special obstacle in that sense might be the principal obligation to pay back social assistance benefits received if income is earned at a later stage.

However, one has to bear in mind that non-take-up is not only influenced by "decisions" of eligible persons but also by administrative decisions (e.g., errors in evaluation procedures, discretionary decisions based on loose programme rules, etc.) which might lead to the rejection of applications by eligible persons (Hernanz et al. 2004, 8), termed as "primary" vs. "secondary" non-take-up (Van Oorshot 1991).

2.2 Problematic outcomes of non-take-up

The outcomes of high benefit non-take-up can be considered as problematic in several respects (see for example Engels 2001, Hernanz et al. 2004, Kayser/Frick 2001):

The welfare goals of benefit programmes are not entirely reached; there is a failure in the provision of a safety net for those in need (as the targeted benefits often do not reach the target group) and in reducing poverty. All in all this questions the target precision and the effectiveness of the instruments of the welfare state.

Non-participation causes unjustified disparities among eligible clients. This becomes a serious problem if the "decision" is at least partly involuntary, i.e. if some households are discouraged from claiming because of objective or subjective barriers (e.g., if only the better informed claim and thus, possibly not those who would benefit most; if the rejection is based on the perception of social assistance as incapacitating help and not as support to self-help).

Finally, non-take-up reduces the capacity to anticipate both social outcomes and financial costs of policy reforms and leads to interpretation problems: the receipt of social assistance cannot be considered as a reliable indicator for deprived circumstances, if it mirrors only the observable part. It is also unclear whether an increasing number of participants is due to increasing needs or simply due to higher take-up.

2.3 Policies to improve take-up

Following the theoretical models, non-take-up suggests that the anticipated benefit falls short of perceived claiming costs. If such costs are the consequences of intransparent and complex schemes, poor information, etc., they imply a failure in the design or implementation of the program (Kayser/Frick 2001). As information and administration barriers often play an important part, a few relatively small measures could be very effective. In general, these could consist in providing the required information for potential beneficiaries about existence and

application procedures, simplifying the application process and making it more comprehensible as well as arranging the screening of applications more transparent and objective (Engels 2001, Hernanz et al. 2004).

In addition, urgent calls for reforms in the Austrian context seem to be (see also Dimmel 2003 and section 3):

- Uniform standards (basic needs, special needs, housing and heating allowances, etc.),
- uniform charging of incomes and assets,
- precise definition of benefits with unconditional entitlement by law, systematic separation from discretionary benefits to determine authorities sufficiently,
- abolishment of the regress towards the recipient (prevents not only from participating but is also a disincentive to take up employment when the benefit has been claimed),
- establishment of one-stop shops, e.g., individuals who apply for unemployment benefits at the offices of the labour market service should be informed about social assistance at the same time and should be able to apply for this, too.

As a replacement for current monetary social assistance benefits a needs-oriented basic security benefit is planned in Austria for 2009. At least part of the requirements listed above (uniform standards, one-stop shops, etc.) will be put into effect.

2.4 Empirical data on non-take-up

In particular when compared to universal transfers (e.g., child benefits), means-tested programmes are always characterised by a certain extent of access problems. However, precise empirical data on non-take-up is limited – partly due to the high-quality requirements for this kind of analysis. Most of the information on participation rates is taken from empirical research as only a few official administrations (e.g., the Department for Work and Pensions in the United Kingdom since 1997) regularly make available respective data.

Evidence for four European countries suggests that overall non-take-up rates of social assistance can be considerably high. The estimates show figures between 20% and 60%.[5] [6] Relatively lower non-take-up seems to be the case in the United Kingdom and in France, relatively

[5] Throughout the paper, non-take-up is always defined in % of all potentially eligible (=100%).

[6] Housing benefits and insurance-based unemployment benefits seem to be less at risk for non-take-up (Hernanz et al. 2004, 10).

higher non-take-up in Germany – with a similar system to Austria before the so-called "Hartz IV"-reform – and the Netherlands (Hernanz et al. 2004, 10).

Although the comparability of the results is restricted by differences in analytical approaches, underlying data, calculations of potential entitlements, etc. and last but not least by differences in the detailed programme regulations, non-take-up of social assistance can be considered as a widespread problem.

Table 1: Non-take-up of social assistance (in % potentially eligible) in EU-countries

Country	Name of programme	Estimated non-take-up	Time period
United Kingdom	Income Support	30-50%	1996
United Kingdom (official estimates DWP)	Income Support	13-23%	2000/01
France	Minimum Income (RMI, API)	35-48%	1994-1996
Germany	Income Support (HLU)	63%	1993/1996
Netherlands (Rotterdam and Nijmegen)	Special Social Assistance	53-63%	1990

S: Hernanz et al. 2004, 11ff

For Austria only rough estimates are available so far, e.g., based on the comparison of the number of households with disposable incomes below the 60% poverty line and additional non-monetary deprivations according to ECHP-data and the number of households actually receiving social assistance according to official statistics. Assuming that at least a major part of these households would be entitled to social assistance, leads to estimations of up to 70% of eligible households who do not claim (Dimmel 2000, 7f).

3 Social assistance in Austria

3.1 Institutional settings

In Austria monetary social transfers are dominated by social-insurance related benefits (e.g., old-age pensions, unemployment benefits, sickness benefit, etc.) with a share of 53% in 2003. Pensions for civil servants follow with another 19%. Universal benefits (e.g., child benefits) account for 15%, continuation of payments to sick workers for 5%. Means-tested benefits make up for 4% of all monetary social transfers (residual: other benefits) (BMSG 2006, 29).

(In 2003), apart from social assistance, important means-tested benefits consisted of pension top-up, unemployment assistance, housing benefits and family bonuses of the Länder. Social

assistance is chosen for analysis because of its importance concerning non-take-up, the data situation and the possibilities to simulate.

The benefit is financed by the Länder (9 different regulations) as a subsidiary second safety net for those in need. The target group consists of people who are not able to rely on own resources (work, income, assets), resources of their family (maintenance obligation) or other entitlements (social insurance benefits, etc.) in order to obtain sufficient means for a humane living.

Social assistance consists of cash benefits as well as benefits in kind (in the case of need for long-term care or medical attendance). The programme under investigation is the cash benefit in the "open" social assistance, i.e. "Hilfe zur Sicherung des Lebensunterhalts (HLU)", including permanent ("Dauerleistungen") and temporary ("Geldaushilfen") monetary transfers plus housing and heating supplements.[7] People have to apply for the benefit, the public authorities verify the eligibility criteria. Part of the relevant criteria for 2003 is listed below (source: laws on social assistance, inquiry to the offices of the governments of the Länder):

- Residence: legal residence in the province concerned
- Citizenship: coequal to Austrians are EEA-citizens, foreigners with equal treatment resulting from state-treaties; foreigners if reciprocity with their home country is realised in actual practices; approved refugees. For other foreigners (in particular asylum seekers) as a rule help is only granted on the basis of civil law (discretionary decisions), if this is deemed to be necessary in the light of their personal, familial or economic situation to prevent from social hardship.[8] However, there are exceptions, for example in Upper Austria (only the legality of the residence is checked) and Tyrol (entitlement also in case of "consolidated" residence).
- Incomes test: as a rule all incomes are taken into account, however in some Länder certain exemptions exist, e.g. family benefit ("Familienbeihilfe"), care benefit, income of apprentices, appropriate amount of employment income of elderly or disabled per-

[7] In the remaining parts of the paper the exclusive focus is on HLU, for reasons of simplicity indicated as "social assistance".

[8] Today this group should be covered by the basic security for foreigners in need ("Grundsicherung für hilfsbedürftige Fremde") introduced in 2004. In addition, the due date for the opening of social assistance also to non-EU-citizens required by the European Union was January 2006.

sons (discretionary decision). In addition, beyond the duty for replacement of granted benefits by persons with maintenance obligations (as a rule, parents for their children, adult children for their parents, spouses), there is an obligation to pay back benefits received by the recipient him/herself if income is earned at a later stage of life ("Regress").

- Assets test: as a rule all assets are taken into account, too. However, in some Länder there are certain exemptions, e.g. small privately owned homes or freehold flats needed for accommodation, if a liquidation would constitute social hardship; small cash amounts (partly discretionary decisions).

Eligible are "needs units", as a rule the nuclear family (maintenance obligation). Income and assets tests are basically applied on a month-by-month basis. The needs – differing according to each province and the support status – are composed of basic needs topped by special needs regulated in some of the Länder (as a rule for people in pension age, disabled; in Vienna in practice also for families with children). Possible additional discretionary amounts are explicitly mentioned in the laws of many Länder: "In the individual case, standard rates are to be increased as far as this is deemed to be necessary in the light of the specific personal or familial circumstances of the client, in particular concerning age, sickness, disability and special needs".

Table 2: Standard rates HLU according to province and support status (2003)

Province	Standard rates	Singles	Head of household	Add. members of hh. without family benefit	Add. members of hh. with family benefit (i.e., children)
Burgenland	basic needs	400.00	331.00	241.50	118.50
	increased (incl. special needs)	451.50	382.50	283.40	160.40
Kärnten	basic needs	398.00	328.00	240.00	119.00
	increased (incl. special needs)	466.00	398.00	-	-
Niederösterreich	basic needs	467.30	410.30	213.70	126.70
Oberösterreich	basic needs	506.40	460.00	273.80	140.80
	increased (incl. special needs	525.50	479.00	310.40	-
Salzburg	basic needs	394.00	355.00	227.50	106.00
Steiermark	basic needs	472.00	431.00	288.00	146.00
Tirol	basic needs	398.90	341.30	237.40	132.70
Vorarlberg	basic needs	447.70	375.80	239.70	146.10
Wien	basic needs	390.33	380.55	195.47	117.03
	increased (incl. special needs	607.26	670.91	-	-

Burgenland and Wien concede special needs to persons in pension age and persons incapacitated for work (supplements to the standard rate), in addition Wien in practice to families with children (not cited here). Kärnten provides an increased standard rate for persons in pension age and persons incapacitated for work. Oberösterreich defines an increased standard rate for all permanent recipients (related to age, health status, care for children <3 or relatives, etc.). Long-term recipients receive the payments 14 times a year. In addition, e.g. Niederösterreich and Oberösterreich stipulate a standard rate for persons who live with persons not entitled to/ responsible for maintenance in the same household (not cited here).
Q: Pratscher 2005; offices of the governments of the Länder

Overall, there are considerable differences in the amounts of standard rates between the Länder. An interesting example is Vienna, where basic needs are relatively low whereas increased rates incl. special needs are relatively high.

Needs for housing and heating costs are added to the standard rates. According to each province housing costs are incurred up to an "appropriate" amount.[9] A heating allowance is usually granted for the months November till March/April. As a rule the maximum amount for total needs is limited with the rates of the pension top-up in the pension insurance (2003: single 643.54 €, couple 965.53 € 14 times a year).[10] Thus, social assistance usually provides a standard only below the poverty line (2003: 60% of median, 726 € 14 times a year).

[9] As a rule, maximum amounts related to the number of persons in the household are fixed (in the case of increased standard rates the reimbursement of housing costs is usually curtailed by a retained amount which is already covered by the standard rate). However, in some Länder only a limitation for standard rates plus additional costs is fixed; in this case housing costs are usually accepted "up to the amount of actual costs under the consideration of the principles fitness for purpose, parsimony and cost-effectiveness" (discretionary decision).

[10] However, in some Länder rent costs are directly paid to the landlord even beyond this limit.

3.2 Recipients and expenditure (official statistics)

In 2003 103,000 persons (1.3% of the population) in 63,000 households (1.9% of all households) received social assistance. According to Statistics Austria the numbers reflect persons/households which received social assistance at least once in 2003. The total expenditures in 2003 amounted to 235 million € (0.1% of GDP) (cf. AK 2006, 77; Pratscher 2005, 339; Statistik Austria 2005, 40/309; Statistik Austria 2006, 11).

There is a high concentration of recipients in Vienna: 68% of all persons (70,000) and 69% of all households (43,000) were located in the capital. From 1995 (63,000) the total number of recipients increased by 40,000 or 65%. However, the number of permanent recipients ("Daueruntersstützte") increased only by 24% (from 32,000 to 39,000) in the same period (Pratscher 2006, 1152).[11]

The figures suggest a changed structure among recipients, namely an increased share of people in working age (unemployed, "working poor"). This is also confirmed by the authorities in Vienna who report an increasing extent of clients whose low income from other sources is topped up by social assistance. Reasons mentioned are the rise in atypical employments (part-time, marginal occupation [„geringfügige Beschäftigung"], temporary employment, etc.) and corresponding low earnings as well as in the case of unemployment, the resulting low prior-ranked unemployment benefits (Pratscher 2006, 1144). The (moderate) increase in terms of exclusive social assistance recipients is partly referred to the tightening of access conditions to unemployment benefits in 2001 (Dall/Saupe 2003).

However, the number of recipients is still relatively low compared to other countries. Possible reasons are the traditionally low unemployment rate in the international context (in 2003 4.3% in terms of international counting [1995: 3.7%], 7.0% in terms of national counting [1995: 6.6%]; Statistik Austria 2005; Statistik Austria 1998) and the granting of unemployment assistance ("Notstandshilfe") after the expiration of the unemployment benefit ("Arbeits-

[11] However, the definition of permanent recipients is not uniform across the Länder: in Vienna this includes persons who receive a supplement to the normal rates because of inability to work or having reached the pensionable age, in the other Länder persons with a continuous receipt of at least three months (Pratscher 2006, 1143).

losengeld"), whereas in some European countries there is a direct fall back to social assistance.

4 Data and methods

4.1 Available data and eligibility simulation

For the analysis of non-take-up, complex statistical procedures are required. The most difficult task is to identify all those with potential entitlement. Eligibility can only be determined by imputations based on information on socio-demographic characteristics and incomes/assets of different household members as well as specific legal regulations and administrative rules of the welfare programme.

As administrative statistics only provide data on actual recipients, usually only representative surveys can be used as data source. This could be either general-purpose surveys, such as household budget or income surveys, or surveys specifically designed to measure take-up. However, the second possibility is costly and rarely done in practice (Hernanz et al. 2004, 14).

For this paper I use cross-section data from the second wave of the EU-SILC for Austria (2004 with income data for 2003) issued by Statistics Austria.[12] The data is (in total) representative for the Austrian population in private households, the sample size comprises 4,521 households. The core of the data is the collection of detailed data on income both at the household and the individual level (I use also the additional variables with the original non-aggregated income information from the survey provided with special permission by Statistics Austria).

A major problem in terms of modelling of participation rates is the fact that the data contains no information on assets. In addition it is likely that the self-reported information on incomes is subject to measurement or misreporting errors. In particular data on self-employment and capital income are often unreliable. Furthermore, the data is not fully representative for low-income groups (see also Appendix 1). For analysing specific subgroups of the population, also the relatively small sample size seems to be a concern.

[12] The first wave in 2003 contained only cross-sectional data, whereas the second wave in 2004 started also a rotating panel.

Another problem relates to the different time horizons of reported incomes in the survey and of eligibility checks by the administration: apart from social transfers only annual income is available in the data but social assistance is assessed on a monthly basis. Using annual income can rule out eligibility although the household might be entitled during some months of the year (e.g. income variation within the year due to temporary unemployment).

There might also be slight discrepancies between the definition of incomes contained in the survey and the one used by the administrations to verify eligibility. However, this is only a small concern as very detailed income data is used (for a further discussion of these methodological issues see Engels 2001, Hernanz et al. 2004, Jäntti 2007, Van Kerm 2007).

As the granting of social assistance is related to "needs units" and not to individuals, I use the household as the unit of observation.[13] The simulation of needs for each household is carried out in several steps based on the detailed regulations for each of the 9 Länder. In the first instance basic needs of all household members are calculated separately. Individual basic needs are increased by additional special needs (related to age, disability status, presence of children in the household, etc.). The sum of the individual needs of all members gives the income need of the complete household. To this sum, the appropriate need for housing and heating is added. Housing costs are assessed up to the household-specific maximum amount stipulated by each province or up to the actual rent costs observed in the data (which is the lower).

The income measure taken for the comparison with the total household needs is disposable household income (excluding social assistance) adjusted for certain deductible expenditures not counting for the means-test according to each province (e.g. transfers like family benefit, care benefit, allowable deductions in case of employment, etc.).[14] Prior-ranked entitlements (e.g., unemployment benefits, housing benefits, family bonuses of the Länder) are either simulated, too, or taken directly from the underlying data and hence considered in the income measure.

---

[13] Households are only a proxy for „needs units". The benefit unit may be different from the household, e.g., in (few) cases of multi-family households or persons who live with other persons not entitled to/ responsible for maintenance in the same household. A problem remains the potential entitlement to maintenance against other persons outside the household, as information on their existence (and economic situation) is not available in the data (Engels 2001, 16). Only effective maintenance payments are included.

[14] In the model this is covered by detailed means-test income lists for each of the Länder.

If the household's adjusted income is below the overall household's needs, the household is considered eligible.

Eligibility rule: income needs (basic, special) + needs for housing costs > allowable incomes.

From the calculations also the amount of benefit entitlement is available. Aggregating the entitlements over all eligible households results in total social assistance expenditure that all potentially eligible households are entitled to (for a further description of analytical steps see Engels 2001, 14ff; Kayser/Frick 2001 and Appendix 2).

To estimate non-take-up rates, the resulted figures have to be put into relation to the number of actually receiving households and to actual expenditures. This information can be derived either from official statistics or from benefit receipt reported in the survey data. Additional problems on this side of the calculation might be that official statistics do not always provide 100% accurate figures. There are also various reasons for misreporting of programme participation in the survey, e.g., respondents may omit reporting because of stigma (voluntary) or mix various forms of transfers (involuntary) (Hernanz et al. 2004, 16f).

4.2 Possible measurement errors and their impact

The analysis has to be content with the data available. Thus, the complexity of the regulations does not allow to exactly consider all components and determinants of household's needs and allowable incomes. This might result in two forms of error in the analysis:

a) Simulation of non-eligible households as eligible (over-estimation of non-take-up)
b) Simulation of eligible households as non-eligible (under-estimation of non-take-up)

Related to the simulation of needs and to the identification of the household's means counting for the means-test there might be several measurement errors. Based on the methodological descriptions in section 4.1, Table 3 summarises the type of errors and their possible impact on the estimation of participation rates in social assistance benefits in Austria:

Table 3: Possible measurement errors: reliability test of simulated benefit entitlements

Possible simulation errors	
Error source	*impact*
Incompatible timing of income (yearly) and needs assessment (monthly)[15]	-
No information on assets in the data: no consideration for means-test	+
Needs units approximated by households	+/-
Simulation of benefits for non EEA-citizens in all Länder, as their concrete entitlement (related to citizenship) cannot be checked on the basis of available data (possible equalisation with Austrians or help on the basis of civil law: discretionary decisions)[16]	+
Incorrectly assigned additional needs as entitlement is tied to certain criteria, which is not 1:1 observable in the data, e.g. related to disability status	+/-
Discretionary decisions by officials, e.g. on specific additional needs in the individual case (e.g., for elderly, disabled, families with children)	-
Interaction with other simulated benefits with non-take-up in reality (e.g., family bonuses Länder)	-
Possible additional errors in the survey data	
Error source	*impact*
Measurement error, mainly under-reporting/over-reporting of incomes (see Appendix 1)	+/-
Other factors related to sample and weighting: take-up estimates sensitive to observations from lower end of the income distribution	-

+: leads to over-estimation of non- take-up: error-type a); -: leads to under-estimation of non-take-up: error-type b); -/+: both directions possible

The errors listed in the table affect the denominator in the non-take-up analyses, i.e. the number of potentially eligible. However, also the numerator, i.e. the number of actually receiving households and actual expenditure is just as important to estimate participation rates correctly. Related to official statistics (reported by the Länder to Statistics Austria), there is some evidence that information about recipients is not 100% accurate. However, it is neither possible to quantify the direction nor the magnitude of this possible error.

Comparing reported receipt of social assistance in the survey data to official statistics suggests a relatively high under-representation in the EU-SILC (46% in terms of receiving households, 31% in terms of effected payments). According to Statistics Austria this is mainly due to under-coverage of this group in the sample but also to non-reporting because of stigma; also miss-classification[17] might play a role.

[15] Also it is not possible to only look at long-term recipients (over the whole year) and exclude short-term recipients from the analysis as the distinction made in the official statistics for Vienna (majority of recipients) does not relate to the duration of receipt but to the receipt of supplements to the standard rates.

[16] Compared to official figures for Vienna, where this data breakdown is available, it seems that this kind of error is not dramatic: share of non-Austrians in simulated recipients 25.8% vs. 22.4% in actual recipients in Vienna.

[17] Overall, some errors related to the correct identification of public transfers were identified and revised via inquiry by telephone (Statistik Austria 2007). However, in the case of social assistance benefits (one variable for permanent and one variable for one-time benefits) a specific classification error may occur related to an addi-

Table 4: Checking micro- and macro information on social assistance receipt: reliability test reported SILC-data related to official statistics

Receiving households (off. statistics: recipients living alone or head of household) at least once 2003	Expenditure, total 2003
A1: Official statistics: 63,000	A1: Official statistics: 235 million €
A2: Dataset: 29,000	A2: Dataset: 72 million €
Coverage (A2 in % A1): 46.0	Coverage (A2 in % A1): 30.6

Source: Pratscher 2005; Statistik Austria 2006; dataset EU-SILC

Thus, it seems to be more appropriate to estimate participation rates by using the actual number of recipients from administrative records compared to the total number of potentially eligible people derived from the survey data. Using information on benefit receipt from the data would lead to an over-estimation of non-take-up.

Summing up, the analysis is subject to several possible errors. The most severe problems seem to be that short-term benefit receipt with entitlement only during some months of the year cannot be simulated (thus, non-take-up should be underestimated) and the approximation of needs units by households. Other major shortcomings are at least partly considered by providing some kind of sensitivity analysis to take into account measurement errors in underlying incomes and simulated needs as well as using proxies for correcting for assets in the means-test.

5 Empirical results

5.1 Overall non-take-up rates: base scenario

Non-take-up is defined as the ratio between the number of households who are not receiving the benefit and the total number of those who are potentially eligible. For 2003, in the base scenario 144,000 households are simulated as eligible for social assistance with an entitlement to 452 Mio. EUR. Thus, the non-take-up in terms of caseload would comprise of 81,000 households or 56%[18] and in terms of expenditure 217 Mio. € or 48%. This provides first evidence that participation is higher if bigger amounts are to claim.[19]

---

tional variable in the dataset on "other public monetary transfers to combat social exclusion", which covers small additional benefits provided by the municipalities, e.g., special heating allowances.

[18] If the simulated figures are related to reported benefit receipt in SILC (under-reporting), the non-take-up would amount to more than 80%.

[19] Yearly average entitlements of claiming households amount to EUR 3,730 (235 million/ 63,000), while in the base scenario non-applicants abstain from EUR 2,679 per year (217 million/ 81,000) on average.

The distributional impact of this targeting error can be illustrated by comparing two sets of income distributions:

a) the currently available distribution according to EU-SILC where no account for non-take-up is taken, and
b) the distribution based on full take-up (of all simulated means-tested benefits[20], not only social assistance) in the simulation model.

Using a retained poverty line (848 EUR per month according to the original SILC-data), under the assumption of full take-up the at-risk-for-poverty rate would drop by almost 3 percentage points, the Gini by 2 percentage points. Thus, accounting for low participation rates in tax/benefit models seems to have a non-negligible effect on standard indicators for poverty and income distribution.

Table 5: Poverty rates and Gini coefficient according to EU-SILC and under assumption of full-take-up in EUROMOD, 2003

	Poverty rate (poverty line SILC: 848 EUR/month)	Gini
EU-SILC	12.8	0.258
Simulation EUROMOD 100 % take-up	10.0	0.238

5.2 Overall non-take-up rates: sensitivity analysis

To account for possible measurement errors is of great importance since they may distort the simulation of entitled households. A first kind of sensitivity analysis is provided if we look at the so-called Beta-error rate. It is defined as the share of households not calculated as eligible in the simulation model among all households with reported benefit receipt in the survey data.[21] In the base scenario it amounts to 32.4% (unweighted: 11 out of 34 households). Ini-

[20] See also Appendix 2.

[21] Benefit receipt might simply be reported incorrectly (e.g., miss-classification of transfers by respondents). However, there are in fact several possible reasons that entitlement for "true" benefit receivers is not simulated. In this case Beta-errors can be subsumed under error-type b) in section 4.2: simulation of eligible households as non-eligible, which can be split up in actual participating and actual non-participating households. In principle, these reasons are similar to those mentioned in table 3 but their relative weight might be different with the most important reason being that eligibility assessment in the model is based only on annual income (no consideration of short-term recipients with income fluctuation during the year). Further reasons are: benefit units proxied by households (no consideration of multi-family households); disabled, etc., entitled to higher benefits not identified in the dataset (different measurement); no consideration of possible higher discretionary benefits (e.g., for eld-

tially this suggests a simulation of eligible households as non-eligible and hence an underestimation of non-take-up.[22]

To further check the simulation plausibility in the light of the Beta-error, we can look at poverty rates and median disposable income for each group of interest.[23] Persons living in households simulated as potentially eligible to social assistance feature a much lower disposable income and hence a much higher poverty rate than persons living in households for which receipt of social assistance is reported in SILC. The difference is even more pronounced compared to persons living in households with Beta-error. This group disposes of relatively high incomes which suggests that at least a certain part can be explained by reporting errors.[24]

Table 6: Poverty rates and median disposable income of persons living in households with Beta-error compared to other groups; according to SILC

Group	Poverty rate	Median disposable income/month (yearly/12) in €
All	12.8	1,414
Reported SA receipt SILC	43.7	892
Simulated SA receipt EUROMOD	92.7	518
Reported SA receipt SILC but not simulated as entitled EUROMOD (Beta-error)	15.4	975

In contrast to the Beta-error, the (remaining) possible simulation errors (see section 4.2) are not directly observable. They may offset each other on average or the may not. The only way to achieve sense of this type of errors is to estimate participation rates (as well as Beta-error rates) under several scenarios with multiple measurements of the resources that determine

erly, disabled, families with children); (general) measurement error in the survey: report of too high incomes; simulation of other benefits with non-take-up in the model, in reality take-up of social assistance, etc.

[22] Simulated non-eligibility of these households presume that entitlement conditions are modelled too restrictive. A general easing of entitlement conditions in the model would increase the number of households (not only of Beta-error-households) simulated as potentially eligible. Even "making" only Beta-error-households eligible would increase non-take-up, as I estimate participation rates by using the actual number of recipients from administrative records compared to the total number of potentially eligible people derived from the survey data, and hence only the denominator in the calculation (potentially eligible households) would be increased.

[23] As poverty line the 60%-median of 848 EUR per month according to the original SILC-data is used. To clearly see the difference, for all groups poverty rates and median disposable income are derived from the original survey data.

[24] A non-negligible extent of reporting errors is also confirmed by a comparison of Finnish survey and register data: a substantial discrepancy in households that report they have received housing allowance in the survey and those for whom registers suggest they have, was found (Jäntti 2007).

entitlement, i.e. reported incomes as well as needs determining the potential eligibility of households (on this method see also Hernandez/Pudney 2006, Kayser/Frick 2001):

a) to adjust for possible measurement errors in the incomes in the survey, original income (from employment, self-employment, etc.) and reported benefit income (unemployment benefits, sickness benefit, pensions, etc.) are increased/decreased by 5 and 15 percent;
b) to adjust for possible measurement errors in the simulated needs, eligibility is assigned to households whose allowable incomes fall short of simulated needs increased/ decreased by 5 and 15 percent.[25]

As additional robustness check, estimated non-take-up rates are corrected for the non-consideration of assets in the means-test, using two sorts of proxies:

a) no entitlement if incomes from interests, dividends, capital investments and other income from assets exceed 100 EUR per year;[26]
b) no entitlement in the case of a privately owned home or freehold flat.

Changes in needs affect both non-take-up estimations and Beta-error rates slightly more than changes in incomes. However, relatively large effects on participation rates (more than 5 percentage points) can only be observed in the case of an extensive variation (+/- 15%) of the underlying parameters. Also, changes in Beta-error occur only in the line of the 15%-variation. Thus, none of the households with Beta-error is situated slightly above the simulated thresholds for eligibility.

The introduction of proxies for assets which would impede the possibility to pass the means-test would reduce non-take-up rates by up to 10 percentage points (in the case of home own-

[25] Unfortunately this kind of sensitivity analysis can only be carried out "stepwise". It is not possible to analyse a varying random error as there is no module that supports such an analysis in EUROMOD. Thus, every single change in the underlying parameters (incomes, needs) would demand a new simulation run.

[26] If an interest rate of 3% is assumed per year, this corresponds to assets of at least 3,000 EUR which is similar to the amount of exemption stipulated for couples in Vienna. However, this kind of reported income is generally substantially downward-biased in surveys, but maybe lesser in the low-income area.

ers). However, as small privately owned homes or freehold flats are usually excluded from the means-test, the reduction is likely to be over-estimated.

Table 7: Checks measurement error incomes/needs; robustness check using proxies for assets

	Non-Take-up of SA in % potentially eligible households in simulation	Non-Take-up of SA in % potential benefits entitled to in simulation	Beta error (simulated non-eligible hh in % of hh with reported SA in data)
base scenario	56.3	48.0	32.4
checks measurement error incomes/needs			
incomes –5%	60.4	50.2	32.4
incomes –15%	69.6	56.7	32.4
incomes +5%	54.0	45.1	32.4
incomes +15%	43.8	36.2	38.2
needs +5%	61.1	52.5	32.4
needs +15%	69.7	59.9	29.4
needs –5%	54.3	42.8	32.4
needs –15%	40.6	30.4	38.2
robustness check: proxies assets			
not eligible if capital income > 100 EUR	49.4	38.8	32.4
not eligible if home owner	45.8	33.1	35.3

If the estimates related to non-eligibility in the case of capital income above the specified threshold one the one hand and the increase of households needs by 5% compared to the base scenario on the other hand are used as plausible simulation boundaries, the estimated range of households with non-take-up lies between 49% and 61%.[27] If the same limits are applied to the expenditure level, the non-take-up is located between 39% and 53%.

The sensitivity analysis provides upper and lower boundaries for the estimation by using different scenarios which tighten or ease the conditions that determine entitlement in the model. Although it is still difficult to judge when the result is "correct", particularly when taking also into account that I fail to simulate short-term recipients with income variations during the year, the sensitivity analyses suggest that more than half of households eligible to social assistance did not claim in 2003.

[27] This range is very close to the range that would result from using the 95%-confidence interval for the non-take-up-rate in the base scenario: 49-62%. If "Beta-Error"-households are "made" eligible, the non-take-up-rate would amount to 59%.

5.3 Determinants of non-take-up

The theoretical models of take-up suggest that the expectations related to benefit level and eligibility spells as well as perceived application and psychological costs influence the participation decision (see section 2.1). The probability to participate can also be translated into a function of household characteristics which correlate with the (non-)take-up:

household *i* takes up at time *t* if expected utility derived from receipt of social assistance exceeds utility from non-participation minus claiming costs (Kayser/Frick 2001).

As the direct observation of most of these explaining factors is constrained by the availability of respective information in the data, following Kayser/Frick (2001) different proxies have to be employed:

The "relative poverty gap" proxies pecuniary determinants, i.e. the level of benefit or in other words the material urgency of the respective household. It is calculated as the simulated amount of social assistance a given household is eligible for, controlling for own incomes as percentage of simulated total needs.

There are also other proxies for benefit level and expected duration of benefit receipt which illustrate the household's expectations towards the future, too, hence affecting also direct application costs: in that sense information and administrative costs may be lower, e.g., for those with less education, for unemployed, households with children, etc. because they are more likely in need of assistance for longer periods of time and higher amounts (Dahan/Nisan 2007, 23). A particular group less likely to participate might be households with migration background as, e.g., these households face more language barriers and in addition those without Austrian citizenship may face more uncertainty of claiming (partly only benefits based on civil law are available).

Social and psychological costs depend on distaste for welfare by household members themselves as well as on perceived stigmatisation (by persons in the neighbourhood as well as government officials). This may differ across age groups (older persons might have a stronger distaste for social assistance) as well as across community size (larger towns provide more anonymity) and across family types (perceiving less stigma by administrators if the benefit is also to meet children's needs, etc.).

In the official statistics on recipients only breakdowns by sex and province are available. In addition I want to account for interactions between the various characteristics of a household correlated with the participation decision in multiple regression analyses. Thus, for the analysis data based exclusively on the survey (households with reported benefit receipt and simulated potentially eligible) is used. However, the under-representation of households with social assistance in the SILC-data remains a certain problem.

Comparing resulting coefficients across different regression models provides information about the robustness of estimates and controls for possible endogeneity of variables, in particular employment status (for a discussion see Kayser/Frick 2001). Thus, the analysis of association with non-take-up is carried out with variation in

- covariates: probit model including and excluding labour market attachment variables
- methods: probit model vs. Heckman selection.[28] [29]

The probit model calculates the probability of non-take-up related to individual and household characteristics. The focus and thus the sample is limited to the take-up decision of those with simulated eligibility in the base scenario. The dependent dummy-variable depends on whether receipt of households in SILC is reported (0) or not (1=non-take-up). As the benefit is granted on the household level, the regression is carried out on that level, too. Among independent variables the individual characteristics are taken from the head of the household defined as the main earner. Because of the small sample size I use not more than 4 categories per variable and do not consider variables which show neither a significant impact (at least at the 10%-level) nor feature a coefficient > +/-0.5:

---

[28] As in the probit model only households simulated as eligible for social assistance are included in the sample for predicting participation (take-up analysis conditional upon eligibility), an effective selection on income occurs. Thus, bias in the coefficients might be generated, e.g., if some households choose not to earn sufficient income by refusal to work with the "goal" of living off social assistance (i.e., to become eligible). Households concerned select themselves into the observed population group and are hence over-represented in the data. This can lead to a systematic over-estimatation of the impact of non-employment on participation (Kayser/Frick 2001).

[29] Due to the small sample size it is not possible to vary also the underlying population, e.g., including and excluding pensioners, etc.

The results support the hypothesis of pecuniary determinants: higher entitlements measured by the poverty gap have a significant positive effect on take-up. Also not surprisingly, households with an unemployed or inactive head are significantly more likely to participate. Claiming costs pay off in the light of an increased perception of need (longer periods of time and higher amounts). To make ends meet these households may even have no other choice. In addition, as already depending on welfare they may already be well informed on their entitlements and hence information costs might be low. Also the self-assessment related to later earnings potential may be low and thus the potential obligation to pay back benefits received more unlikely. Other variables used as proxies for applications costs, among them migration background, disability status, and number of unemployment months (however, information available only for 2003), show almost no impact.

On the side of proxies for social and psychological costs the dummy variable for living in Vienna shows the expected significant positive impact on take-up. This supports the hypothesis that the anonymity of living in a big town reduces stigma. In addition, social assistance receipt is not so unusual and information might be more easily distributed. Furthermore, although it fails to be significant, family composition (lone parents) positively impacts on a household's participation.[30] Also, there seems to be a higher take-up probability with a child below two years of age in the household.[31] Beside lower application costs (expected longer eligibility spell), less perceived stigma when there are children and a higher acceptance probability by officials might support the decision to take-up. Whereas age has no impact, also households with a male head show a somewhat higher (but not significant) probability to participate.

Removing the employment status information from the list of independent variables leads to the expected result that low education becomes significant in terms of participation, providing evidence that it is strongly correlated with labour market differences. Also households only renting their flat now feature a significant higher probability to take-up. Compared to those owning their home or flat, application costs may be lower as they may also be more likely in

[30] Although in reality probably less likely to participate, the perfect matching of couples without children and non-take-up should be due to the small sample size and the under-reporting of receipt in the SILC-data. According to SILC, their average equivalised household income amounts to only 288 EUR per month.

[31] Whereas the overshadowing effect of the household type seems to turn the effect of number of children in the household in the other direction.

need of assistance for longer periods of time (Kayser/Frick 2001).[32] On the other hand, the positive effect on take-up of living in Vienna is less significant when employment status is excluded, suggesting that both variables together have a cumulating effect. The impact of sex of the household head tends towards zero. However, the fact that the majority of coefficients does not change substantially when employment status variables are removed may provide first evidence that the measures are not highly endogenous.

A further approach for dealing with possible biases from selecting on income and the related potential self-selection of non-employed into the eligible group, is estimating eligibility and take-up simultaneously in a Heckman-style selection model. Here the underlying concept of endogeneity refers to the fact that an independent variable in the model (employment status) is potentially a choice variable, correlated with unobservable factors in the error term (Kayser/Frick 2001; Millimet 2001).

The model requires the identification with specific variables. As it is recommended to apply additional selection variables, I use subjective health status and colour television set in the household.

Again the dependent variable is a dummy (1=non-take-up, 0=otherwise, including non-eligible). However, households with Beta-error are excluded from the analysis: looking at the socio-demographic characteristics of these households, there seems to be a tendency for higher incomes, more labour market engagement and higher education. Given that the source of miss-classification of these households cannot be identified, it is recommendable to remove them from the analysis.

Compared to the probit-model, the Heckman model produces qualitatively the same results in terms of sign and significance of coefficients. The effects for employment status (unemployed, inactive) do not turn less significant. All in all this suggests that endogeneity appears to be only a relatively small issue both within the simple probit-framework and the Heckman Selection.

[32] However, some of the owners simulated as eligible in the base scenario might not have passed a wealth check related to their home or flat.

Table 8: Determinants of (non-)take-up according to different regression models

	Probit	Probit reduced	Heckman	Heckman: selection eligibility
relative poverty gap	-0.012*	-0.010*	-0.011*	
age	-0.083	-0.075	-0.065	-0.027*
age2	0.001	0.001	0.000	0.000*
type of hh (ref. single adult)				
lone parent	-0.526	-0.434	-0.512	-0.024
adults w/o children	*7.270*	*6.494*	*7.799*	-0.366***
adults with children	-0.339	-0.001	-0.135	-0.445***
no. of children <18	0.233	0.215	0.141	0.200***
child <2 (ref. no)	-0.917	-0.955	-0.709	-0.204
male (ref. female)	-0.539	-0.050	-0.509	-0.045
home owner (ref. no)	0.809	1.191*	0.884	-0.379***
migration background (ref. no)	0.121	0.016	0.054	0.047
Vienna (ref. not Vienna)	-0.930**	-0.701*	-0.862*	0.031
education (ref. middle vocational)				
max. compulsory	-0.748	-0.762*	-0.769*	0.236**
high school diploma	0.428	0.256	0.514	-0.000
university	-0.254	0.034	-0.241	0.340**
no. of unemployment months (2003)	0.042	-0.015	0.033	0.018
head of hh disabled (ref. no)	0.239	0.103	0.228	-0.207*
employment status (ref. employed)				
unemployed	-1.425**		-1.576**	0.665***
not working	-1.751***		-1.811***	0.547***
pensioner	-0.292		-0.172	-0.137
subjective health status (ref. middle)				
good				-0.095
bad				0.272*
colour television set in hh (ref. no for financial reasons)				-0.453***
constant	5.794***	4.179***	5.981***	-1.200***
observations	146/178	146/178	4,510	4,510
pseudo R2	0.34/0.39	0.21/0.27		
Probit model (Heckman: with sample selection): Prob > chi2	0.003	0.073	0.044	

Heckman: excluding households with Beta-error (unweighted n=11);
* significant at 10%-level; ** significant at 5%-level; *** significant at 1%-level; italic: perfect matching: keeping variable and perfectly predicted observations has no effect on the likelihood or estimates of the remaining coefficients; difference only in pseudo R2 and no. of observations: left: keeping variable, right: excluding variable;
positive sign coefficients: higher prob. non-take-up (Heckman selection: eligibility); negative sign: higher prob. take-up (Heckman selection: non-eligibility);
relative poverty gap: for a given hh = (simulated needs – allowable incomes)/simulated needs*100; for eligible households always >0 (simulated needs > allowable incomes) and <= 100 (in cases of no allowable incomes at all);
age2: age also enters as a quadratic term to account better for households with an older head;
home owner: dummy variable: any type of home-ownership included (house or flat);
migration background: dummy variable indicating any type of migration background;
Vienna: dummy variable: further breakdown according to Länder not possible due to small sample size;
education: highest education achieved

It can be resumed that related to the decision to participate, distinct differences across population groups exist. The analysis showed significant impacts of proxies for pecuniary determinants (poverty gap), application costs (non-employment) and psychological costs (living in Vienna). If the labour market status variable is removed from the analysis, a significantly

higher take-up can also be observed in case of low education as well as renting (instead of owning the home or flat).

These relationships with socio-demographic characteristics are more or less confirmed by related analyses for Germany (Kayser/Frick 2001) which disposed of a similar social assistance system to Austria before the "Hartz-IV" reform. However, for Germany it was not found that households with lower educational attainment are more likely to participate.

6 Conclusion

One of the aims of this paper was to analyse the functioning and relevance of the second safety net of social assistance. For Austria it is the first time that an analysis on non-take-up is carried out based on detailed empirical data. Although certain restrictions in the data-availability and in specific simulation possibilities have to be considered, the analysis showed significant results which are in line with similar research provided for other European countries, in particular for Germany.

Calculating participation rates under various scenarios (using proxies for assets to be taken into account in the means-test, assuming possible measurement errors by varying both underlying incomes and simulated needs), the size of non-take-up in terms of caseload ranges from 49% to 61% of all potentially eligible households, in terms of expenditure from 39% to 53% of all potentially owing expenditure. This provides first evidence that participation is higher in case of higher available benefit levels.

To investigate the determinants of non-take-up, multiple regression analyses are applied. Different models (probit model including/ excluding covariate employment status; probit model vs. Heckman selection) are adopted to control for possible endogeneity of independent variables, in particular employment status. Under these different arrangements, several proxies for hypotheses based on theoretical models of take-up (rational cost-benefit equation; claim if information, administration and psychological costs are relatively low or offset by expected benefit) show a stable significant effect: participation rates are higher in case of a higher "poverty-gap"[33], i.e. higher benefit levels, in case of a non-employed head of household and if the household is situated in Vienna. If the employment status variable is excluded in the pro-

[33] Simulated amount of social assistance a given household is eligible for controlling for own incomes as percentage of simulated total needs.

bit-model, also low education and renting a flat (instead of owning a home or flat) turns significant in terms of higher take-up.

The second purpose of this paper related to the methodological interest, i.e. how far is it possible to account for non-take-up and measurement errors in micro-databases and tax/benefit microsimulation models? The distributional impact of targeting errors is not negligible: for Austria the poverty rate (60%-median) derived from the original SILC-data amounts to 12.8% and the Gini to 0.258, whereas under the assumption of full-take-up (of all simulated means-tested benefits, not only social assistance) this decreases to 10.0% and 0.238.

A possible first step to introduce (low) participation rates and hence a certain form of behavioural modelling into the tax/benefit model EUROMOD could be based on results from this paper and related papers for Germany and Finland (within the AIM-AP project). Corrections for households with non-take-up could be applied on a reduced set of common variables for which correlation with non-participation is found, as the probability of claiming can be estimated as a function of household characteristics. It has to be ensured that the projected number of claimants is close to the actual figure provided by administrative sources. However, it has to be kept in mind that there will be no uniform adjustment possible that works for all countries and all benefits (or even social assistance programmes).

Prevalent measurement errors (data and simulation errors), which do not allow a perfect simulation of eligibility, make take-up modelling relatively difficult. However, it is not straightforward to identify models for potential measurement errors. A basic knowledge about the nature of the measurement error, e.g., related to reported incomes, would be needed: there maybe a mixture of error-types (systematic under-reporters, randomly inaccurate reporters, etc.). Furthermore, there is the question what kind of measurement error should be corrected in which detail, e.g., using different factors for random errors (different algorithms for self-employment income, employment income, investment income, etc.) and detailed correction procedures (correcting with different factors per decile, etc.). Finally, one should not forget that also differences in the behaviour of programme administrators are important in the context, e.g. in the case of discretionary decisions.[34]

[34] An essential part of these methodological conclusions is based on a draft note by Stephen Pudney.

Possible extensions in this direction remain a topic for future work. Improvements could also result from multiple measurements of (reported) incomes and benefit receipt, e.g., by comparing survey data with register data (if this should become possible in the future in Austria). As a smaller step, information that might allow estimates for short-term benefit entitlement, e.g., particular covariates which might help to identify which households are likely to have experienced substantial variation of incomes within the year, could be very helpful (cf. Jäntti 2007).

Furthermore, future research could possibly also draw on the longitudinal features of datasets, as ambitious modelling based on cross-section data is limited. Overall, take-up should be viewed as a dynamic process, e.g., becoming aware of being eligible followed by later transition from non-participation to claiming. Thus, analyses on the individual continuation of non-take-up and on reliable trends in overall rates over time would be very useful. In addition, new benefit reforms are likely to change also participation decisions which points the research interest to the reaction of individuals towards institutional changes (Kayser/Frick 2001; Riphahn 2001, 20).

However, most panels are problematic for (non-take-up) simulations. In the case of Austria, the available ECHP-data features an even smaller sample size than the EU-SILC and is affected by a substantial panel drop-out in particular related to low income groups. The EU-SILC provides only a rotating panel.[35] In addition, already after a few waves a certain sensitising of respondents for socio-economic problems can be presumed, which makes at least non-claiming due to lack of information relatively implausible and hence distorts the representativeness of the sample (Engels 2001, 13).

[35] So far the waves 2004 and 2005 are available, the first wave in 2003 was only cross-sectional.

References

AK (Chamber for blue-collar and white collar workers) (2006): Wirtschafts- und Sozialstatistisches Taschenbuch, Vienna.

Anderson P.M., Meyer B.D. (1997): Unemployment Insurance Take-up Rates and the After-Tax Value of Benefits, in: Quarterly Journal of Economics 112(3), 913-937.

Blank R.M., Ruggles P. (1996): When do Women Use Aid to Families with Dependent Children and Food Stamps? The Dynamics of Eligibility versus Participation, in: Journal of Human Resources 31(1): 57-89.

BMSG (Federal Ministry for Social Security, Generations and Consumer Protection) (2006): Sozialschutz in Österreich, Vienna.

Dahan M., Nisan U. (2007): The Effect of Benefits Level on Take-Up Rates: Evidence from a Natural Experiment, CESifo Working Paper No. 1885.

Dall E., Saupe B. (2003): Die Schnittstelle zwischen Sozialhilfe und Arbeitsmarkt, Vienna.

Dimmel N. (2000): Normgeltungsvermutungen und gradualisierte Rechtsanwendung. Am Beispiel der Nichtinanspruchnahme wohlfahrtsstaatlicher Leistungen, Vienna.

Dimmel N. (2003): Bedarfsorientierte Grundsicherung und Sozialhilfe, in: Talos E. (ed.): Bedarfsorientierte Grundsicherung, Vienna.

Engels D. (2001): Nicht-Inanspruchnahme zustehender Sozialhilfe-Leistungen, Köln.

Hernandez M., Pudney St. (2006): Measurement error in models of welfare participation, ISER Working Paper 29.

Hernanz V., Malherbet F., Pellizzari M. (2004): Take-up of Welfare Benefits in OECD Countries: A Review of the Evidence, OECD Social, Employment and Migration Working Papers No. 17.

Jäntti M. (2007): The non-take-up of social transfers and measurement error: Housing allowances in Finland, Turku.

Kayser H., Frick J.R. (2001): Take it or Leave it: (Non-)Take-Up Behavior of Social Assistance in Germany, in: Schmoller's Jahrbuch – Journal of Applied Social Science Studies, 121 (1), pp. 27-58.

Millimet D. (2001): Endogeneity versus sample selection bias, http://www.stata.com/support/faqs/stat/bias.html.

Pratscher K. (2005): Sozial(hilfe)leistungen der Bundesländer 2003 und im Jahrzehnt 1994-2003, in: Statistische Nachrichten 4, 336-348.

Pratscher K. (2006): Sozial(hilfe)leistungen der Bundesländer 2004 und im Jahrzehnt 1995-2004, in Statistische Nachrichten 12, 1141-1155.

Riphahn R.T. (2001): Rational Poverty or Poor Rationality? The Take-up of Social Assistance Benefits, Mainz.

Statistik Austria (1998): Statistisches Jahrbuch Österreichs 1998, Vienna.

Statistik Austria (2005): Statistisches Jahrbuch Österreichs 2006, Vienna.

Statistik Austria (2006): Sozial(hilfe)leistungen der Bundesländer 2004, Vienna.

Statistik Austria (2007): Standard-Dokumentation Metainformationen (Definitionen, Erläuterungen, Methoden, Qualität) zu EU-SILC 2004, Vienna.

Van Kerm Ph. (2007): Extreme incomes and the estimation of poverty and inequality indicators from EU-SILC, IRISS Working Paper Series 01.

Van Oorshot W. (1991): Non-Take-Up of Social Security Benefits in Europe, in: Journal of European Social Policy, Vol. 1(1), 15-30.

Appendix 1: Measurement error related to reported incomes in EU-SILC 2004

Compared to the wage-tax statistics for 2003 total net employment income shows a relatively appropriate coverage in EU-SILC 2004. However, incomes below the median are higher and above the median lower than in the wage-tax statistics (thus indicating a more equal distribution). The main reason is the generally poor coverage of very low und very high incomes in surveys. In addition according to Statistics Austria (2007, 24) the over-estimation of incomes in the lower deciles suggests an under-coverage of low-paid and/or temporary employment types, which are partly not recalled by the respondents at the time of the interview anymore.

Table A1: Yearly net incomes of employees in EU-SILC 2004 vs. wage-income statistics 2003

Deciles	Wage-income statistics 2003	EU-SILC 2004
10%	2,591	5,560
20%	7,568	10,653
30%	12,822	14,800
40%	17,577	18,300
50%	21,709	21,658
60%	25,535	24,504
70%	29,803	28,000
80%	35,842	33,396
90%	47,299	42,500
No. of persons	3,571,768	3,456,752
Mean	24,772	23,756

S: Statistik Austria 2007, 25

The comparison of reported household incomes in EU-SILC with the sector accounts of the national accounts 2003 results in an under-estimation of total household gross income by 21.4% (excluding incomes from assets [extensive under-reporting]: 10.0%) in EU-SILC, of disposable incomes by 26.3%. Possible explanations for the differences are under-coverage of incomes, in particular from self-employment, and earnings undocumented by tax (Statistik Austria 2007, 25).

However, in an international comparison of EU-SILC datasets (waves 2004) the quality of the Austrian data seems to be relatively high: possibly also due to the relatively low share of self-employed in Austria (proportion of households reporting self-employment incomes about 15%; range from 9% in Belgium to 40% in Denmark), the proportion of households which record an household disposable income below 10% of the mean reaches less than 1% (7 out of 14 old Member States feature a higher share). Expectedly self-employment incomes signal themselves as potentially problematic. It is generally the income component with the widest

range of variation (in Austria the inner 98% of observations span from 0 up to 4.5 times the mean disposable household income which is also comparatively low, e.g., Ireland up to 8 times) (Van Kerm 2007).

Appendix 2: Short description of simulating eligibility for social assistance in EUROMOD

Starting with the gross incomes reported in EU-SILC (employment income, self-employment income, pensions, etc.), simulated social insurance contributions and income tax (according to each income type) are deducted in the model. Subsequently, (potentially) owing cash benefits are added. Transfers based on insurance histories (unemployment benefits, etc.), for which no information is available, cannot be simulated and are hence taken directly from the data.[36] Finally, this results in household disposable income excluding social assistance. On the basis of the exact regulations in each of the Länder, the theoretical entitlement to social assistance (incl. rent and heat allowances) is simulated. By using detailed income lists, exemptions of incomes not counting for the means-test in certain Länder, e.g., family benefit, care benefit, employment income of elderly, can be exactly considered.

[36] Due to the wide heterogeneity of regulations housing benefits are also not simulated but taken directly from the data.

Appendix 3: Basic descriptives of determinants of non-take-up (covariates in the probit-model)

Table A2: Basic descriptives of determinants of non-take-up (covariates in the probit-model)

Variable	Mean	Standard deviation
relative poverty gap in %	38	32
age	46	17
Type of hh		
single adult	0.42	0.49
lone parent	0.16	0.36
adults w/o children	0.18	0.38
adults with children	0.25	0.43
no. of children <18	0.70	0.11
child <2	0.07	0.29
male	0.48	0.50
home owner	0.24	0.43
migration background	0.25	0.44
Vienna	0.33	0.47
Education		
max. compulsory education	0.43	0.49
apprenticeship/ middle vocational	0.35	0.48
high school diploma	0.13	0.33
University	0.10	0.29
no. of unemployment months	2.10	4.30
hh head disabled	0.30	0.46
employment status		
employed	0.48	0.50
unemployed	0.19	0.39
not working	0.14	0.34
pensioner	0.20	0.40

Appendix 4: Standard deviation of regression coefficients

Table A3: Standard deviation of regression coefficients

	Probit	Probit reduced	Heckman	Heckman: selection eligibility
relative poverty gap	0.007	0.006	0.008	
age	0.069	0.058	0.074	0.014
age2	0.001	0.001	0.001	0.000
type of hh (ref. single adult)				
lone parent	0.596	0.525	0.553	0.165
adults w/o children	.	.	*36545.3*	0.103
adults with children	0.809	0.684	0.824	0.171
no. of children <18	0.306	0.276	0.325	0.069
child <2 (ref. no)	0.700	0.608	0.809	0.159
male (ref. female)	0.516	0.414	0.488	0.092
home owner (ref. no)	0.654	0.616	0.594	0.090
migration background (ref. no)	0.452	0.408	0.429	0.104
Vienna (ref. not Vienna)	0.405	0.361	0.450	0.093
education (ref. middle vocational)				
max. compulsory	0.467	0.407	0.428	0.093
high school diploma	0.770	0.611	0.706	0.118
university	0.684	0.650	0.628	0.143
no. of unemployment months	0.056	0.041	0.055	0.016
head of hh disabled (ref. no)	0.782	0.366	0.382	0.118
employment status (ref. employed)				
unemployed	0.575		0.523	0.154
not working	0.623		0.598	0.147
pensioner	0.782		0.739	0.157
subjective health status (ref. middle)				
good				0.115
bad				0.141
internet in hh (ref. no)				0.089
constant	2.063	1.572	1.973	0.338