EUROMOD WORKING PAPER SERIES

EM 9/19

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April 2019

Falling through the social safety net? Analysing non-take-up of minimum income benefit and monetary social assistance in Austria*

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Abstract

Non-take-up of means tested benefits is a wide spread phenomenon in European welfare states. The paper assesses whether the reform that replaced the monetary social assistance benefit by the minimum income benefit in Austria has succeeded in increasing take up rates. We use EU-SILC register data together with the tax-benefit microsimulation model EUROMOD/SORESI. The results show that the reform led to a significant decrease of non-take-up from 53% to 30% in terms of the number of households and from 51% to 30% in terms of expenditure. Estimates of a two-stage Heckman selection model show that pecuniary determinants (higher degree of need), lower applications costs (unemployment, low education, renting one's home) and lower psychological barriers (size of municipality and lone-parenthood) are predictors of taking up the benefit.

JEL: D61, H31, I38

Keywords: Non-take-up, Means-tested benefits, Microsimulation, Social Policy

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* The underlying study was supported by funds of the Oesterreichische Nationalbank (Austrian Central Bank, Anniversary Fund, project number: 16802). We would like to thank Willem Stamatiou for linguistic editing. The results presented here are based on EUROMOD version H1.50 adapted for SORESI. EUROMOD is maintained, developed and managed by the Institute for Social and Economic Research (ISER) at the University of Essex, in collaboration with national teams from the EU member states. We are indebted to the many people who have contributed to the development of EUROMOD. The process of extending and updating EUROMOD is financially supported by the European Union Programme for Employment and Social Innovation 'Easi' (2014-2020). We make use of the Austrian survey of the European Union statistics on income and living conditions (EU-SILC) 2010 and 2016 provided by Statistics Austria. The results and their interpretation are the authors' responsibility.

1 Introduction

The degree to which benefits reach the desired target groups has become a key performance indicator of social protection programmes. International organisations like the OECD and the European Commission call for "well-targeted income-support policies" (OECD 2011, p.40) that are targeted to those in need at the times they need it (European Commission 2013) while the kind and degree of demanded support remains vague. In many European welfare states, means-tested benefits tend to be characterised by a certain extent of access problems and non-take-up of these programmes is a widespread problem (Eurofund 2015; Matsaganis, Ozdemir, and Ward 2014; Warin 2014). Especially in the context of the financial crisis and budget austerity the topic has become increasingly relevant.

Non-take-up may either stem from individual concerns and personal moral beliefs of eligible individuals or from a failure of the welfare system. The latter may be caused by non-transparent and complex schemes, poor information, or institutional barriers, which may in turn also affect individual concerns and beliefs (Eurofund 2015; Kayser and Frick 2000). Low participation rates distort the intended welfare impact of targeted social transfers (Bargain, Immervoll, and Viitamäki 2012) and may prevent the welfare state from successfully combating poverty. Especially for benefits of last resort the consequences of this failure can be severe. Furthermore, 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. In addition, non-take-up may cause greater social and economic costs in the long run as persistent poverty and precarious financial circumstances may lead to health problems and reduce equal opportunities for children in affected households (Eurofund 2015; Hümbelin 2016). From a social policy point of view, non-take-up reduces the capacity to anticipate social outcomes and financial costs of policy reforms. At the same time, the receipt of a certain benefit cannot be considered a reliable indicator for deprived circumstances (Engels 2001; Hernanz, Malherbet, and Pellizzari 2004; Kayser and Frick 2000). However, an alternative interpretation of non-take-up could also describe it as a selection process that encourages those with the most prevalent need for financial support to claim the benefit while it excludes people with less severe needs (Bargain, Immervoll, and Viitamäki 2012).

Compared to other European countries, the Austrian system for benefits of last resort features "rather restricted eligibility and coverage" (ESPN 2015, p.7). The number of recipients is relatively low due to a comparably low unemployment rate and an unemployment assistance as a back-up to unemployment benefit. People are legally entitled to the benefit if they do not have sufficient means for subsistence and housing needs from their own resources, resources of their (nuclear) family, from other prior-ranked entitlements such as social insurance benefits or support through other means. The eligibility of the benefit is conditional on an income and wealth-based means-test as well as on the willingness and availability to work if the beneficiary is of working age and fit for work. The benefit is administered by the nine Federal States while it is financed by general taxes.

In 2010/11, the social assistance benefit was replaced by the minimum income benefit. While the basic characteristics of the benefit remained the same, the aim of the reform was

to combat poverty by introducing nationwide uniform standards and facilitating access to the benefit. The most important changes include an increase of the benefit level to the level of the minimum pension top-up, a limitation of the maintenance obligation to the nuclear family, more transparent and accelerated administrative processes, more legal certainty, increased anonymity as applications can now be made at the district headquarters instead of municipality offices only, a stronger focus on the reintegration of beneficiaries in the labour market and their inclusion in the public health insurance scheme (BMASK - Bundesministerium für Arbeit, Soziales und Konsumentenschutz 2012; Dimmel and Pfeil 2014; Dimmel and Pratscher 2014; Stanzl and Pratscher 2012). Overall, the reduction of access barriers and de-stigmatisation of the benefit was expected to decrease non-take-up.

The current paper offers insights into the target efficiency of the benefits of last resort in Austria. We assess the size and social determinants of non-take-up for monetary social assistance in 2009 and the reformed minimum income benefit in 2015. Using EU-SILC register data together with the tax-benefit microsimulation model EUROMOD/SORESI, we are able to analyse the effects of the reform, excluding a potential measurement error in reported incomes, a main source of bias in research on non-take-up of means-tested benefits (Frick and Groh-Samberg 2007; Hernandez and Pudney 2007; Matsaganis, Levy, and Flevotomou 2010). The quantitative design of the study is complemented by a qualitative in-depth analysis of the take-up gap based on expert interviews.

The paper is organised as follows: after a short literature review on the size and determinants of non-take-up in section 2, section 3 describes the data and method used. Section 4 is dedicated to the empirical results of the analysis and presents estimations on the size and the determinants of non-take-up before and after the reform. Section 5 concludes.

2 Literature review

Empirical evidence from several European countries shows the considerable magnitude as well as the persistence of the problem of non-take-up of means-tested benefits (see Table 1). In general, non-take-up in terms of claimants is higher than in terms of payments, as households are more likely to claim benefits if they are entitled to higher benefit amounts.

A broad body of economic literature (see for example Anderson and Meyer 1997; Blank and Ruggles 1996; Engels 2001; Eurofund 2015; Hernanz, Malherbet, and Pellizzari 2004; Kayser and Frick 2000; Riphahn 2001) provides theoretical models of the determinants of (non-)take-up. A basic hypothesis is that households apply for a certain social transfer if the anticipated benefit exceeds the anticipated costs, similar to a cost-benefit equation. This consideration relates to direct as well as indirect costs of applying, including both objective components like the level of benefit, the expected duration of receipt, information costs (about benefit and eligibility regulations as well as application procedures), administrative costs (e.g. queuing, filling forms, need to report detailed information to the welfare agency, checks on the willingness to accept suitable job offers) and the uncertainty of success (Bruckmeier et al. 2013; Eurofund 2015; Hümbelin 2016) as well as

Table 1: Estimates of non-take-up of social assistance benefits in Europe

Country	Benefit	Year	Claimants	Payments
Austria	Subsistence Support (Hilfe zur Sicherung des Lebensunterhalts - HLU)	2003	49 – 62%	48%
Belgium	Minimum guaranteed income (Leefloon) 18-65	2005	57 – 76%	45%
Bulgaria	Guaranteed minimum income	2007	41 – 68%	-
Czech Republic	Social allowances (Sociální doplatek)	1996	37%	-
	Material need benefit (Sociální dávky hmotné nouze)	2010/11	72%	-
Germany	Subsistence Support (HLU)	2002	67%	57%
	Social assistance (Grundsicherung) for employable, for people 65+ and in cases of permanent earning incapacity	2007	35 – 42%	-
		2007	42 – 50%	-
		2008	34 – 43%	-
Finland	Social assistance (Toimeentulotuki) by families of working age	2003	40 – 50%	-
	Social assistance (Toimeentulotukea)	2010	55%	-
France	Minimum guaranteed income (Revenu Minimum d'Insertion)	2001	35%	-
	Active solidarity minimum income (Revenu de solidarité active)	2010	50 – 64%	-
Hungary	Regular social assistance (Rendszeres szociális segély)	2003	43 – 45%	-
Lithuania	Social assistance (Socialinė pašalpa)	2011	68%	43%
Luxembourg	Minimum guaranteed income (Revenu minimum garanti)	2007	59 – 71%	-
Netherlands	Supplementary minimum income (Aanvullende bijstand)	2003	68%	-
Poland	General social assistance scheme (Pomoc społeczna)	2005	24 – 57%	-
Portugal	Minimum guaranteed income (Rendimento mínimo garantido)	2001	28%	-
Slovakia	Benefit in Material Need (Pomoc v hmotnej núdzi)	2009	79%	-
Sweden	General social assistance (Ekonomiskt bistånd/Socialbidrag)	2001	31%	-
Switzerland	Social Assistance Kanton Bern	2012	26%	-
UK	Income Support (and income-related Employment and Support Allowance)	2009/10	11 – 23%	13%
		2013/14	19 – 23%	-

Source: Bruckmeier et al. 2013; Eurofund 2015; Hümbelin 2016; Matsaganis, Ozdemir, and Ward 2014

subjective motives such as stigmatisation, self-esteem or personal moral beliefs (Frick and Groh-Samberg 2007; Warin 2014).

Although a distinction between different types of non-take up is beyond the scope of the current analysis and available data, it should be mentioned that non-take-up is not only influenced by the actions and decisions of eligible individuals but also by the accuracy of administrative decisions, e.g. errors in evaluation procedures, discretionary decisions based on loosely defined programme rules or responses to individual circumstances (Hümbelin 2016; Matsaganis, Ozdemir, and Ward 2014). This human error in the application process, leading to a rejection of actually eligible people, is defined as secondary non-take-up (Van Oorschot 1991).

Empirical evidence of the covariates of (non-)take-up suggests that participation rates increase with higher degrees of need or deprivation. For households just below the eligibility threshold, the costs of claiming often do not pay off the utility from receiving the benefit (Bargain, Immervoll, and Viitamäki 2012; Bruckmeier and Wiemers 2010; Bruckmeier et al. 2013; Frick and Groh-Samberg 2007; Hümbelin 2016; Wilde and Kubis 2005). Accordingly, administrative costs play an important role for take up (Currie 2004), whereas information costs seem to be of minor interest (Bruckmeier and Wiemers 2010) being relevant rather for cases at the margin of eligibility, e.g. for individuals owning their home or being self-employed (Bargain, Immervoll, and Viitamäki 2012). The literature is inconclusive to what extent stigma and related psychological barriers hamper take up. While some show that it significantly affects non-take-up (Frick and Groh-Samberg 2007; Wilde and Kubis 2005) others report only small impacts (Bruckmeier and Wiemers 2010; Currie 2004). Independent of attitudes and economic structure, Hümbelin (2016) finds an effect of the population density, which he uses as a proxy for (lacking) anonymity. Additionally he points to the fact that households living in areas with right-wing conservative political preferences feature higher rates of non-take-up.

3 Data and method

The presented results are based on the Austrian survey of the European Union statistics on income and living conditions (EU-SILC) 2010 and 2016 (referring to income information for 2009 and 2015) provided by Statistics Austria. 2009 marks the last year in which monetary social assistance was part of the legal framework in all Federal states. The data for 2015 was the latest data available at the time of analysis. In 2012, the collection of the Austrian EU-SILC data has been changed from survey to register data. Data for 2008-2011 originally collected via interviews was reproduced using register data. This allows for a more accurate assessment of non-take-up rates, as measurement errors mostly related to reported income data in surveys do not need to be addressed in the analysis.

3.1 Simulation of non-take-up

For the quantitative analysis of non-take-up the tax-benefit microsimulation model EUROMOD/SORESI is used. It contains the Austrian part of the EU-wide model EURO-

MOD (Sutherland and Figari 2013) with specific adaptations to the tax-benefit system in Austria (Fuchs and Gasior 2014). The areas of policies covered include social security contributions, income tax and cash transfers. For the current study the model has been expanded to cover the detailed policy regulations for monetary social assistance in 2009 and minimum income benefit in 2015 for all nine Federal States while the standard model includes the rules for Vienna only. Details on regulations are summarized in Table A2 and Table A3 in the Appendix.

The simulation of the benefit starts with the assessment of the income needs of all households by calculating the theoretical eligibility. Income needs are assessed on the basis of socio-demographic characteristics of each household member by taking the region-specific legal regulations and administrative rules of the programme into account. The basic monetary need of each household member is increased by additional special needs related to age, disability status, presence of children in the household as well as needs for housing and heating. Housing costs are assessed by the actual housing costs observed in the data up to the household-specific maximum amount stipulated by each Federal State.

In a second step the actual income situation of households is assessed. Social insurance contributions and income taxes are deducted from gross household incomes consisting of employment income, self-employment income, other market incomes and public pensions as reported in EU-SILC. Cash transfers are added to the simulated net market incomes. For a better effigy of reality, monetary transfers are directly taken from the data with the exception of family allowance and child tax credit. This avoids an increase in the scope for errors as the simulation of other cash transfers would add the problem of non-take-up of prior-ranked benefits (Bargain, Immervoll, and Viitamäki 2012).

According to specific means-test regulations in the respective Federal States, the household disposable income is adjusted for deductible incomes (e.g. transfers like family allowance, child tax credit, care benefit, etc.) as well as deductible expenditure in the form of maintenance payments. If the household's adjusted disposable income is below the calculated total household need, the household is considered eligible for minimum income benefit or monetary social assistance in terms of the means-test related to incomes.

In practice, the eligibility for the benefits is not only based on the income situation but also on the wealth possessed by a household. Unfortunately, the underlying EU-SILC micro-data does not contain any correspondent information. Thus, non-take-up rates are estimated by using a proxy for the wealth test: households are regarded as non-eligible if their incomes from interests, dividends, capital investments and property exceed the stipulated thresholds in the Federal States (see Table A2 and Table A3) when assuming a certain interest rate.[1]

The size of non-take-up is estimated by comparing proportions of households that fulfill the entitlement criteria in the simulation model with proportions of actual benefit-receiving households. Non-take-up is hence defined as

$$\text{Non-take-up} = 1 - \frac{\text{Number of households receiving benefit}}{\text{Number of households simulated eligible}} \tag{1}$$

[1]Based on empirical data (Statistik Austria 2015; Statistik Austria 2018) an interest rate of 4% in 2009 and 1% in 2015 is assumed.

Accordingly, the fiscal impact of non-take-up can be assessed by relating actual benefit expenditure to simulated expenditure. Due to under-coverage of benefit receipt in the EU-SILC data[2] which would lead to an overestimation of non-take-up rates, the reference figures for actual recipients and expenditures are taken from administrative statistics.

The reliability of the simulation depends on the availability of all parameter information required in the claiming process in the underlying micro-data. Given that the regulations are quite complex, household needs and income as well as wealth tests cannot be simulated in all details. A number of potential sources of error inherent to the available data need to be considered. Households in EU-SILC data are not perfectly congruent with the specification of benefit units defined by the legal framework, thus about 10% of the respective benefit units (Frick and Groh-Samberg 2007) are not covered by the analysis. Furthermore, the information on citizenship and residential status in the data does not allow a clear assignment of eligibility. Therefore, all persons in the data set are assumed to be eligible in regard to their legal status[3]. Temporary eligibility for the benefit cannot be assessed as there is no information on monthly income and calculations have to be based on average monthly values for all income sources. Additionally, information on actual housing and heating costs can be error prone as a consequence of the data collecting process via interview, while further deductible expenditures and potential maintenance entitlements against persons outside the household are not captured in the underlying data at all. Still, the parameters of the benefits of last resort as well as the characteristics of the potentially eligible households are depicted as detailed as possible in the simulation model. In addition, major data shortcomings (households instead of benefit units, yearly instead of monthly incomes) rather point to an underestimation of non-take-up rates.

In order to test the robustness of the simulated results several validity and sensitivity checks are performed. To provide a robustness test for the wealth condition two additional scenarios, one without a wealth test and one where home ownership is considered as a proxy are evaluated. Additionally, beta error rates, defined as the share of households who report the receipt of the benefits of last resort in the survey of those simulated as non-eligible, are calculated. The sensitivity of the simulation model is evaluated by increasing or decreasing the modelled needs by 5-15%.

3.2 Regression model

In the second part of the analysis, drivers of non-take-up are assessed. Due to a potentially non-random selection processes (e.g. of non-employed) into eligibility to the benefit, a limitation of the regression analysis to the group of eligible households might introduce a bias to resulting coefficients. To account for this possible endogeneity bias a two-stage

[2]Even in the EU-SILC register data for 2009 and 2015 information on the social assistance benefit and the minimum income benefit is not provided from registers but still from the declarations of the survey respondent. According to Statistics Austria (Heuberger 2018) the under-coverage in the SILC-data is mainly due to an under-representation of the target group in the sample and due to non-reporting because of stigma. In addition, specific classification errors in terms of different social assistance type benefits may occur by respondents.

[3]As the share of third-country nationals among simulated eligible households is almost equal to the share among actual recipients, it can be assumed that this type of error is negligible.

Heckman selection model is employed (Heckman 1976).

In a first step the selection equation explaining eligibility is calculated. Here, all households of the dataset are included. Those simulated as eligible for monetary social assistance or minimum income benefit take the value 1, those who are not the value 0. The explanatory variables of the selection model include the activity status of the household head (employed, unemployed, inactive or retired) as the participation in the labour market is considered an important factor in terms of eligibility. Accordingly, home ownership and personal characteristics like the number of children below the age of 18, age specified in a quadratic term as well as the highest education achieved by the household head are included in the selection model.

In a second step only households considered eligible are kept for the analysis explaining (non-)take-up. The dependent variable takes the value 1 if an eligible household does not receive the benefit, i.e. non-take-up, and 0 otherwise. The activity status, education as well as home ownership used in the selection equation are included in the list of explanatory variables again. Other household characteristics controlled for in the regression are the composition of the household, the country of birth and the sex of the household head as well as the size of the municipality. The poverty gap is used as a measure of the degree of neediness of a household. It is specified as follows:

$$\text{poverty gap} = \frac{(\text{simulated needs} - \text{allowable incomes})}{\text{simulated needs}} * 100 \tag{2}$$

and takes a positive value for all eligible households as their simulated needs per definition exceed their allowable income. The maximum value of the variable is 1 in case a household has no allowable income. To produce consistent coefficients the estimated probability of not being eligible is included as a regressor, hence, endogenizing the potential selection bias.

To check for plausibility, expert interviews discussing the empirical results were conducted in the last step of the analysis.

4 Results

4.1 Actual recipients and expenditure

In 2009 - before the abolition of the monetary social assistance - 174,000 persons, i.e. 2.1% of the total population, in 102,000 households received the benefit of last resort. The expenditure amounted to EUR 407 million which equals 0.14% of GDP (Pratscher 2011). By 2015 the number of recipients of minimum income benefit increased to 284,000 persons, or 3.3% of the total population, in 168,000 households. The total expenditure in 2015 amounted to EUR 765 million, i.e. 0.22% of GDP (Pratscher 2016). Thus, since the last years of monetary social assistance in 2009/10, a steady increase in recipients and expenditure can be observed, see Figure 1 for further details.

An over-proportionally share of benefit recipients are living in Vienna with 58% in 2009 and 56% in 2015. Around 70% of the benefiting households do not receive the full

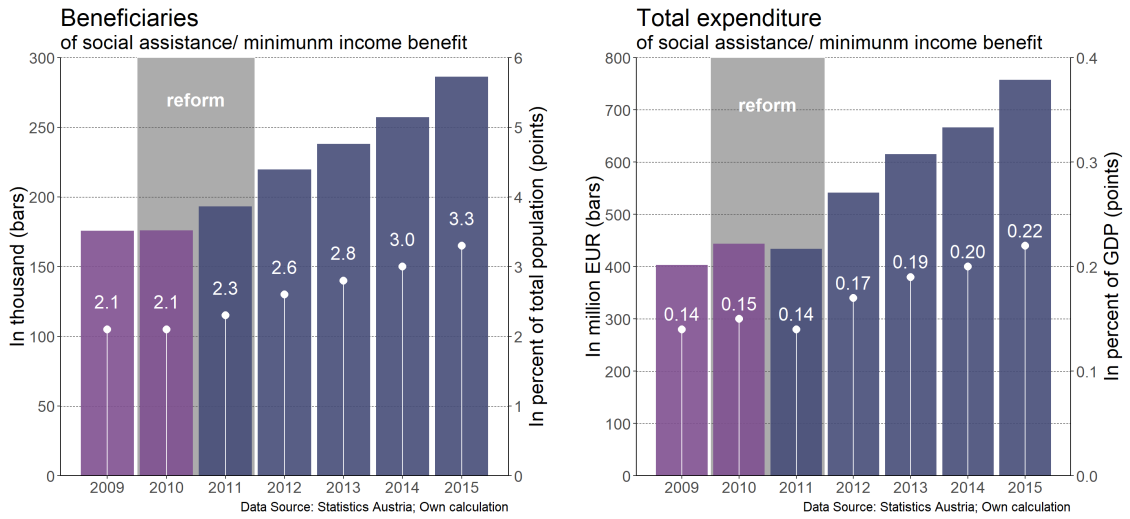

Figure 1: Recipients and expenditure of monetary social assistance/ minimum income benefit in Austria, 2009-2015

benefit amount but the benefit serves as a top-up between their income from other sources like unemployment benefits, maintenance payments or employment income and the defined minimum income standard (Statistik Austria 2019). This is due to the relatively high share of precarious employment related to low earnings as well as low prior-ranked unemployment benefits in the case of unemployment.

The increase in the amount and number of recipients may hint towards an increase in take up. However, there are several other factors likely to have an impact, in particular general economic and labour market developments, like increases in unemployment rates or precarious employment. Additionally, the increase in the average benefit level rendered more people being eligible for the minimum income benefit.

4.2 Non-take-up rates

Our analysis clearly indicates a substantial impact of the reform improving the target efficiency of the benefit of last resort. Comparing the situation in 2009 and 2015 estimated non-take-up rates dropped considerably, namely from 53% to 30% in terms of caseload and from 51% to again 30% in terms of expenditure. Thus, for 2009 it is estimated that 114,000 households eligible for monetary social assistance did not claim and abstained from EUR 423 million. Those numbers decreased to 73,000 households and EUR 328 million for minimum income benefit in 2015. The reform led to a significant increase in participation rates confirmed both by the 95%-confidence interval for the number of non-take-up households and by the sensitivity analysis where the simulated needs have been adjusted by +/-5 (see Table 2).

However, the policy implementation still leaves space for further improvements. A full take up of the minimum income benefit would reduce both the risk of poverty and the Gini coefficient by 0.7 percentage points in 2015.

Table 2: Overview non-take-up rates 2009 (monetary social assistance) and 2015 (minimum income benefit)

	2009 Monetary Social Assistance		2015 Minimum Income Benefit	
	Caseload in 1,000	Expenditure in million	Caseload in 1,000	Expenditure in million
External	102	407	168	765
Simulated	216	830	241	1,093
Non-take-up	114	423	73	328
Non-take-up %	53%	51%	30%	30%
CI (95%)	48 – 57%		23 – 37%	
Needs +/- 5%	49 – 58%	45 – 56%	22 – 38%	23 – 36%

Source: Authors' calculations based on EUROMOD/SORESI; Pratscher2011; Pratscher2016

While beta errors amount to 30-40%, disposable incomes of respective households are comparably high. This indicates that the proxy of using households instead of benefit units constitutes a certain measurement error but also suggests that non-take-up rates are rather underestimated.

When using an alternative wealth test specification with home ownership as a proxy, non-take-up rates increase by about 5 percentage points in 2009 and 10 percentage points in 2015. If no wealth test is applied non-take-up increases by about 10 and 20 percentage points (see Table A1). While this sensitivity analysis per se cannot test the validity of the chosen proxy for the wealth test it shows at least that it reduces the number of households simulated as eligible to a significant extent.

4.3 Drivers of (non-)take-up

The first part of the Heckman selection model explains eligibility for the benefit including all households of the dataset, see Table 3. As expected, households with an unemployed, inactive or retired household head as well as households with a low educated head are more likely to be eligible for monetary social assistance or minimum income benefit, due to subsequent lower incomes. For age we find an effect on eligibility only in 2009 with young and old household heads being more likely to become eligible for the benefit of last resort. The number of children in a household has explanatory power with a positive relationship to eligibility only in the regression for 2015. Households with many children have higher needs to be met and the additional burden is not fully covered by family related benefits and allowances. As expected, households owning their home are less likely to be eligible, as they are in many cases better off and do not pass the wealth test.

In the second step of the Heckman selection model, households simulated not to be eligible are excluded from the regression and (non-)take-up of the remaining sample is assessed on the basis of the eligibility selection.

The relative poverty gap is used as a proxy for material urgency. The results support the hypothesis of pecuniary determinants: the higher the potential benefit amount the

Table 3: Regression output of the Heckman Selection model

	2009	2015
	Dependent variable:	
Selection equation	Eligibility	
Intercept	0.003(0.263)	-1.519*** (0.290)
Employment status (ref: Employed)		
Unemployed	1.049*** (0.113)	1.220*** (0.101)
Inactive	0.983*** (0.104)	1.231*** (0.106)
Retired	0.432*** (0.114)	0.363*** (0.127)
Education	-0.208*** (0.037)	-0.103*** (0.036)
Age	-0.056*** (0.010)	0.006 (0.012)
Age^2	0.001*** (0.0001)	-0.0001 (0.0001)
Children in household	0.051 (0.038)	0.105*** (0.040)
Home ownership	-0.763*** (0.069)	-0.896*** (0.082)
	Dependent variable:	
Output equation	Non-take-up	
Employment status (ref: Employed)		
Unemployed	−0.407*** (0.111)	−0.236 (0.362)
Inactive	−0.309*** (0.111)	−0.176 (0.367)
Retired	−0.058 (0.067)	−0.016 (0.090)
Household type (ref: Single)		
Lone parent	−0.135** (0.064)	−0.042 (0.092)
Couple without children	0.053 (0.051)	−0.043 (0.070)
Couple with children	−0.029 (0.067)	0.083 (0.090)
Poverty gap	−0.002*** (0.001)	−0.0004 (0.001)
Education	0.076*** (0.029)	0.071* (0.038)
Country of birth (ref: Austria)		
Other EU country	0.045 (0.050)	0.036 (0.071)
Third country	−0.058 (0.049)	−0.030 (0.061)
Home ownership	0.175** (0.087)	0.127 (0.288)
Male	−0.017 (0.038)	0.022 (0.052)
Municipality size	−0.012 (0.013)	−0.034* (0.020)
Constant	1.290*** (0.206)	0.854 (0.703)
Observations	6,183 (344)	5,996 (301)
R^2	0.224	0.119
Adjusted R^2	0.191	0.076
ρ	−0.597	−0.070
Inverse Mills Ratio	−0.198* (0.116)	−0.028 (0.363)

Note: *p<0.1; **p<0.05; ***p<0.01

more likely is the participation in 2009. This is in line with the finding that non-take-up in terms of claimants is higher than in terms of expenditure in 2009, while they are equally high in 2015. If only small amounts are to be claimed application costs might exceed the benefit.

The employment status yields significant coefficients in 2009, where households with an unemployed or inactive head have a higher likelihood to claim benefits than households with an employed head. This finding meets the hypothesis that those households are likely to have a higher degree of needs. Additionally, as they are in most cases already receiving welfare benefits, they may be better informed about their entitlements which reduces their information costs. Also, the self-assessment related to later earnings potential may be rather pessimistic. On the other side, working poor, i.e. households with an employed household head with low income, often abstain from claiming for top-up benefits as they might not be aware of the entitlement (Schenk 2018).

In both years lower educated heads are more likely to take up the benefit. This might also be related to the anticipated duration of needing financial support. Similar to employed persons, the financial need of highly educated households often represents a short-term financial crises which can be bridged by other means like family resources. In addition, claiming the monetary social assistance or minimum income benefit might be less compatible with their self-perception and the potential requirement of liquidating wealth may also be an obstacle (Schenk 2018; Kargl 2019).

As a further proxy for application costs the migration background defined as the country of birth is included in the regression. Overall, the explanatory power of the migrant status is rather weak with non-EU migrants being more likely to participate than EU migrants or Austrian natives. Due to the more frequent lack of alternative resources, migrants from third countries might be more dependent on the benefits, which seems to outweigh potential information deficits (Stanzl 2018).

As expected households owning their home are less likely to take up the benefit in 2009. Potentially they are afraid that their property might be secured in the land register or even must be liquidated before being able to receive the benefit.

Social and psychological costs are approximated by the size of municipality. We find a significant positive effect of this variable on take up in 2015. Above all it supports the hypothesis that the anonymity of living in a big municipality reduces stigma. In addition, social assistance receipt is more common, and information might be more easily accessed (Kargl 2019).

We also control for household composition and find that in the specification for 2009 participation among lone parents is significantly higher than for single adults. Besides less perceived stigma and a higher acceptance probability by officials due to the special family situation also lower application costs (expected longer eligibility spell related to child care obligations) and higher maintenance responsibilities (Schenk 2018) might support the decision of lone-parents to take up.

5 Discussion and conclusion

The main aim of this paper was to investigate the functioning and relevance of the safety net of last resort in Austria by providing estimates on the size and determinants of non-take-up of monetary social assistance in 2009 and after a policy reform in 2010/11 of minimum income benefit in 2015. Using EU-SILC register data as underlying micro data for the tax-benefit microsimulation model EUROMOD/SORESI we were able to analyse the effects of the reform, relatively independent from a potential underlying measurement error in reported incomes.

Non-take-up in 2009 amounted to 53% in terms of caseload and 51% in terms of expenditure. In 2015 after the policy reform, estimated non-take-up rates dropped to 30% for both the number of households and expenditure. Applying several sensitivity analyses and taking confidence intervals into account, the results clearly indicate that the reform has led to a significant increase in participation rates. Embedded policy measures like the higher degree of anonymity within the claiming process, the provision of health insurance in form of an electronic insurance card, binding minimum standards within minimum income benefit, the abolition of the regress outside the core family, new regulations related to the liquidation of wealth as well as the general coverage of the benefit reform in the media and in public discussions led to an improved access to the benefit (Kargl 2019; Pfeil 2018; Schenk 2018; Stanzl 2018).

However, the distributional impact of the targeting problem is still substantial: In 2015 both the at-risk-of-poverty rate and the Gini-coefficient would drop by 0.7 percentage points under the assumption of full take up of the minimum income benefit.

The determinants of (non-)take-up have been assessed in a Heckman selection model. Estimates show an influence of pecuniary determinants - households with a higher poverty gap are more likely to receive the benefit. This is also confirmed by the result that non-take-up rates are partly higher in terms of caseload than in terms of expenditure suggesting that participation is higher if higher amounts are to be claimed. Also, personal characteristics such as being unemployed, low educated, or renting one's home, hence characteristics related to lower application costs are drivers of take up. The same is true for characteristics related to lower psychological barriers like living in larger communities or being a lone parent.

Prevalent measurement errors related to simulated needs and available data, however, might bias some of the estimation results. Examples are the lack of data on wealth for the related means-test, on the precise legal status of a person related to the residence status and on potential maintenance entitlements against persons outside the household as well as measurement errors related to sampling and weighting factors or in terms of under- or over-reporting of actual rents and heating costs. However, the results of several sensitivity analyses (beta error, different proxies for the wealth test, increase and decrease of simulated needs) and additional remaining major data issues (approximation of benefit units by households; incompatible timing of reported incomes: yearly instead of monthly as applied in the administrative processes ruling out temporary eligibility) rather point to an underestimation of non-take-up.

In addition to our trend analysis, future research could possibly draw on the longitudinal feature of the EU-SILC dataset. Longitudinal analyses allow for testing the dynamic nature of eligibility and (non-)take-up, as a potential later transition from non-participation to claiming can be traced. Individual preferences and barriers as well as the degree of need might change significantly over the years. A non-take-up decision in one year (t-1) affects the degree of need in the following years (t, t+1, ...) and this relationship is likely to be non-linear because of potentially resulting extreme poverty in the long-run (Frick and Groh-Samberg 2007). Thus, analyses on the individual continuation of non-take-up would be of interest.

However, most panel data are problematic for (non-take-up) simulations. EU-SILC data only provides a rotating panel of four years which limits both time horizon and sample size. 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 representativity of the sample (Engels 2001).

Possible improvements in all these directions remain a topic for future work, partly also for data providers.

References

Anderson, Patricia M. and Bruce D. Meyer (1997). "Unemployment Insurance Take-Up Rates and the After-Tax Value of Benefits". In: *Quarterly Journal of Economics, 112(3), 913-937.*

Armutskonferenz (2012). *Monitoring 'Bedarfsorientierte Mindestsicherung': Analyse und Vergleich der Länderbestimmungen zur Bedarfsorientierten Mindestsicherung 2012.* Wien: Die Armutskonferenz.

Bargain, Olivier, Herwig Immervoll, and Heikki Viitamäki (2012). "No claim, no pain. Measuring the non-take-up of social assistance using register data". In: *The Journal of Economic Inequality* 10.3, pp. 375–395.

Blank, Rebecca M and Patricia Ruggles (1996). "When do women use aid to families with dependent children and food stamps?" In: *Journal of Human Resources* 31.1, pp. 57–89.

BMASK - Bundesministerium für Arbeit, Soziales und Konsumentenschutz (2012). *1. Bericht des Arbeitskreises Bedarfsorientierte Mindestsicherung.* Wien: BMASK.

Bruckmeier, Kerstin and Jürgen Wiemers (2010). *A New Targeting-A New Take-Up? Non-Take-Up of Social Assistance in Germany after Social Policy Reforms.* IAB Discussion Paper No. 10/2011.

Bruckmeier, Kerstin et al. (2013). *Simulationsrechnungen zum Ausmaß der Nicht- Inanspruchnahme von Leistungen der Grundsicherung: Studie im Auftrag des Bundesministeriums für Arbeit und Soziales zur Abgrenzung und Struktur von Referenzgruppen für die Ermittlung von Regelbedarfen auf Basis der Einkommens-und Verbrauchsstichprobe 2008.* IAB-Forschungsbericht.

Currie, Janet (2004). *The take up of social benefits.* National Bureau of Economic Research.

Dimmel, Nikolaus and Walter Pfeil (2014). "Armutsbekämpfung durch Transferleistungen". In: *Handbuch Armut in Österreich.* Studienverlag Innsbruck.

Dimmel, Nikolaus and Kurt Pratscher (2014). "Bedarfsorientierte Mindestsicherung (BMS) – eine Zwischenbilanz". In: *Handbuch Armut in Österreich.* Studienverlag Innsbruck.

Engels, Dietrich (2001). *Nicht-Inanspruchnahme zustehender Sozialhilfe-Leistungen.* Köln: ISG.

ESPN (2015). *Minimum Income Schemes in Europe. A Study of National Policies.*

Eurofund (2015). *Access to social benefits: Reducing non-take-up.* Publications office of the European Union.

European Commission (2013). *Social Investment Package. Key Facts and Figure.* Publications office of the European Union, Brussels.

Frick, Joachim and Olaf Groh-Samberg (2007). "To claim or not to claim: estimating non-take-up of social assistance in Germany and the role of measurement error". In: *DIW Discussion Papers No. 734/2007.*

Fuchs, Michael and Katrin Gasior (2014). *Social Reform Microsimulation (SORESI).* Policy Brief 4/2014. Vienna: European Centre.

Heckman, James J (1976). "The common structure of statistical models of truncation, sample selection and limited dependent variables and a simple estimator for such models". In: *Annals of Economic and Social Measurement, Volume 5, number 4.* NBER, pp. 475–492.

Hernandez, Monica and Stephen Pudney (2007). "Measurement error in models of welfare participation". In: *Journal of Public Economics* 91.1-2, pp. 327–341.

Hernanz, Virginia, Franck Malherbet, and Michele Pellizzari (2004). "Take-Up of welfare benefits in OECD countries". In: *OECD Social, Employment and Migration Working Papers No. 17.*

Heuberger, Richard (2018). *E-Mail on social assistance and minimum income benefit variables in SILC.* 9.7.2018.

Hümbelin, Oliver (2016). "Nichtbezug von Sozialhilfe: Regionale Unterschiede und die Bedeutung von sozialen Normen". In: *University of Bern Social Sciences Working Paper No. 21/2016.*

Kammer and für Arbeiter und Angestellte Wien (2009). *Sozialstaat Österreich. Sozialleistungen im Überblick. Lexikon der Ansprüche und Leistungen.*

— (2015). *Sozialstaat Österreich. Sozialleistungen im Überblick. Lexikon der Ansprüche und Leistungen.*

Kargl, Martina (2019). *Expert Interview.* 11.1.2019.

Kayser, Hilke and Joachim R Frick (2000). "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), 27-58.*

Matsaganis, M, E Ozdemir, and T Ward (2014). "The coverage rate of social benefits". In: *Social Situation Observatory. Income Distribution and Living Conditions Research note 9/2013.*

Matsaganis, Manos, Horacio Levy, and Maria Flevotomou (2010). "Non-take up of social benefits in Greece and Spain". In: *Social Policy & Administration* 44.7, pp. 827–844.

Mundt, Alexis and Wolfgang Amann (2015). *Leistbares Wohnen–Bestandsaufnahme von monetären Leistungen für untere Einkommensgruppen zur Deckung des Wohnbedarfs.* Studie im Auftrag des BMASK-Bundesministerium für Arbeit, Soziales und Konsumentenschutz (Wien: IIBW).

OECD (2011). "Divided We Stand. Why Inequality Keeps Rising. An overview of growing income inequalities in OECD countries: main findings". In: *Paris: OECD Publishing.*

Pfeil, Walter (2018). *Expert Interview by Phone.* 17.12.2018.

Pratscher, Kurt (2011). "Sozialhilfe, Behindertenhilfe und Pflegegeld der Bundesländer im Jahr 2009 und in der Entwicklung seit 1999". In: *Statistische Nachrichten 12/2011, 1216-1230.*

— (2016). "Bedarfsorientierte Mindestsicherung der Bundesländer im Jahr 2015." In: *Statistische Nachrichten 11/2016, 846-858.*

Riphahn, Regina T (2001). "Rational poverty or poor rationality? The take-up of social assistance benefits". In: *Review of income and wealth* 47.3, pp. 379–398.

Schenk, Martin (2018). *Expert Interview.* 20.12.2018.

Stanzl, Peter (2018). *Expert Interview.* 3.12.2018.

Stanzl, Peter and Kurt Pratscher (2012). "Bedarfsorientierte Mindestsicherung – was nun? Bestandsaufnahme und Ausblick". In: *Österreichisches Komitee für Soziale Arbeit (Eds.), Evaluierung zur Umsetzung der Bedarfsorientierten Mindestsicherung. Dokumentation der Jahreskonferenz 2012 (pp. 15-34). Linz.*

Statistik Austria (2015). *Statistisches Jahrbuch Österreichs*. Verlag Österreich GmbH.

— (2018). *Statistisches Jahrbuch Österreichs*. Verlag Österreich GmbH.

— (2019). *Sozialhilfebezieherinnen und -bezieher 2000-2010; Sozialhilfeausgaben und -einnahmen 2000-2010; Ergebnisse im Überblick: Mindestsicherung.* URL: `www.statistik.at`.

Sutherland, Holly and Francesco Figari (2013). "EUROMOD: The European Union Tax-Benefit Microsimulation Model". In: *International Journal of Microsimulation, 6(1), 4-26.*

Van Oorschot, Wim (1991). "Non-take-up of social security benefits in Europe". In: *Journal of European social policy* 1.1, pp. 15–30.

Warin, Philippe (2014). "What is the non take-up of social benefits". In: *Books and ideas, 9 June.*

Wilde, Joachim and Alexander Kubis (2005). "Nichtinanspruchnahme von Sozialhilfe. Eine empirische Analyse des Unerwarteten/Non-take-up Behavior of Social Assistance in Germany. An Empirical Investigation of Unexpected Reactions". In: *Jahrbücher für Nationalökonomie und Statistik* 225.3, pp. 91–117.

Appendix

Table A1: Sensitivity analysis: robustness check wealth test, variations in simulated needs

	Non-take-up caseload in %	Non-take-up expenditure in %	Beta-error rate in % (non-weighted)
		2009	
Scenario incomes from capital and properties as proxy for wealth test	53	51	40
		Robustness check wealth test	
Scenario not eligible if home owner	58	56	42
Scenario without wealth test	65	62	39
		Variations in simulated needs*	
Needs +5%	58	56	39
Needs +15%	63	63	33
Needs -5%	49	45	40
Needs -15%	37	31	48
		2015	
Scenario incomes from capital and properties as proxy for wealth test	30	30	35
		Robustness check wealth test	
Scenario not eligible if home owner	41	40	34
Scenario without wealth test	48	44	32
		Variations in simulated needs*	
Needs +5%	38	36	35
Needs +15%	48	46	27
Needs -5%	22	23	42
Needs -15%	-2	6	50

Note: *based on scenario accounting for incomes from capital and properties in wealth test

Table A2: Monetary social assistance: minimum standards, rent allowances, heating allowances and clothing allowances according to Federal State and support status, 2009 in EUR

	Bgld.	Ktn.	NÖ	OÖ	Sbg.	Stmk.	Tirol	Vbg.	Wien
Single	473.6	506	532.3	569.5	464.5	540	459.9	514.4	454
unfit work	534.5	556.6		590.1					733
old		581.9							733
Head	391.9	379.5	467.5	514.7	418.5	492	393.5	432	352
unfit work	452.8	430.1		536					549.5
Other w/o FBH	285.9	379.5	257.3	333.9	268	329	273.7	275.5	352
unfit work	335.6	430.1		360					549.5
Other with FBH	140.3	151.8	144.3	160.4	155.5	166	152.9	159.8	135
10+ years		202.4							
unfit work	190								
Rent allowance									
1 Person		126.5		115	380				272
2 Persons		151.8	99.3		484				272
3 Persons	reason-	177.1	p.P.	on	637	reason-	reason-	reason-	288
4 Persons	able	202.4	w/o	special	728	able	able	able	288
5 Persons	actual	227.7	FBH	grounds	819	actual	actual	actual	305
6 Persons	costs	227.7	+41.3	more	910	costs	costs	costs	305
7+ Pers.		227.7			910				322
Special payments	2*1	4*0.5	2*1	4*0.5	4*0.5	2*1	4*0.5	2*1	2*1 only if unfit to work
Heating allowance	special payment	177.10/ year	567.5/ year	350/ year	special payment	94.0/ year	extra	special payment	516/ year if fit to work
Clothing allowance	special payment	-	special payment	up to 1.5*MS	special payment	-	extra up to 385/ year	special payment	extra; if fit to work
Total upper limit	min. pension top-up (TU)	SR+ RA+ HA	SR+ RA+ HA	SR+ RA+ HA+ CA	SR+ RA	SR+(RA) +HA+(min. pen. TU)	SR+(RA) +HA+CA	SR+ (RA)	SR+ RA+ HA+ CA
Assets	small cash amounts	7*MS	5*MS	-	10*MS	Ind. case	Ind. case	Ind. case	unfit to work 3.5*MS, others 1*MS

Source: Federal states' laws/decrees on monetary social assistance; inquiries to the offices of the governments of the Federal States; Kammer and für Arbeiter und Angestellte Wien 2009

Note: Except for Vienna all long-term recipients receive the payments 14 times a year (i.e. 2 special payments in addition to monthly payments). FBH: family allowance; MS: minimum standard; RA: rent/housing allowance; HA: heating allowance; CA: clothing allowance

Table A3: Minimum income benefit: minimum standards/incl. basic rent amounts, rent allowances and heating allowances according to Federal State and support status, 2015 in EUR

	Bgld.	Ktn.	NÖ	OÖ	Sbg.	Stmk.	Tirol	Vbg.	Wien
Single+LP 1 unfit work	828/207	828/207 911/207	828/207	903/149	828/207	828/207	621/-	623/-	828/207 828/112
Spouse 1 unfit work 2+ unfit work	621/155	621/155	621/155	636/74	621/155	621/155	466/-	466/-	621/155 621/84 621/56
3rd Adult	414/104	414/104	414/103	442/-	-	414/103	310/-	310/-	
Adult w. FBH	248/62	414/104	-	402/74	-	-	-	181/-	414/103
<18 w. FBH from 4th from 5th	159/-	149/37 124/31	190/48	208/- 180/-	174/-	157/39 190/48	205/-	181/-	224/-
Rent allowance									
1 Person	-	-	-	-	380	399	480	565	309
2 Persons	-	-	-	-	484	544	730	645	309
3 Persons	-	-	-	-	637	622	730	740	324
4 Persons	-	-	-	-	728	699	865	845	324
5 Persons	-	-	-	-	819	777	865+	915	344
6 Persons	-	-	-	-	910	855		990	344
7+ Persons	-	-	-	-	1,001+	932			362
Special payments	-	-	-	-	<18 w. FBH 4*0.5 MS	<18 w. FBH 4*0.5 MS	4*75 € per Person	-	2*1 MS if unfit work
Heating allowance	140/ year	160-230 /year	120/ year	-	150/ year	-	-	150-270/ year	-
Total upper limit	MS incl. BRA + HA	MS incl. BRA + HA	MS incl. BRA + HA	MS incl. BRA	MS incl. BRA + RA + HA	MS incl. BRA +RA	MS + RA	MS + RA + HA	MS incl. BRA + RA
Assets	5*MS p.HH	5*MS p.P.	5*MS p.HH	5*MS p.HH	5*MS p.HH	5*MS p.HH	5*MS p.P.	5*MS p.HH	5*MS p.HH

Source: Federal states' laws and decrees on minimum income benefit offices of the governments of; inquiries to the Federal States; Kammer and für Arbeiter und Angestellte Wien 2015; Armutskonferenz 2012; Mundt and Amann 2015

Note: In Sbg., Styria & Tyrol all stipulated long-term recipients receive special payments;
LP: lone parent; FBH: family allowance; MS: minimum standard; BRA: basic rent amount; RA: rent/housing allowance; HA: heating allowance; p.P.: per Person