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Accounting for Measurement Errors: the Non-take-up of Social Assistance in Finland – Report for the AIMAP Project*

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Abstract

Using administrative data (Income Distribution Survey) and the national microsimulation model TUJA, we compare eligibility and actual receipt of social assistance of Finnish working age families during the post-recession period and beyond (1996-2003). The use of register data minimizes usual under-reporting and measurement errors on benefit entitlement and income levels; possible errors due to time-period issues and (unknown) discretionary measures by local agencies are carefully investigated and we provide an extensive sensitivity analysis of our non-take-up measures. It turns out that the non-take-up is substantial in our selected sample – about a half – and increase over the period. We estimate the propensity of non-take-up on repeated cross-sections and pooled data for 1996-2003; a set of stable determinants is identified. The increasing trend is possibly explained by a composition effect, a change in take-up attitudes and a change in unobservable eligibility conditions. Using a decomposition method, we favor the first explanation which is mainly motivated by a change in the nature of unemployment.

Key Words : take up, social assistance, microsimulation.

JEL Classification : D31, H31, H53, I38

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1 Introduction

In many countries, social assistance (SA) schemes substantially improve the material well-being of families experiencing poverty. This effect is particularly strong in Nordic countries where such transfers tend to be generous. Even so, the redistributive efficiency of such schemes can be compromised if support payments do not reach their intended recipients. Existing results for a number of OECD countries point to large proportions of entitled households who end up not claiming benefits due to implicit claim costs and informational problems (Hernanz et al., 2004, Currie, 2004). As a result, evaluations of these schemes (and reforms thereof) can substantially overestimate the redistributive impact if they are based on the assumption of full benefit take-up. Although take-up is believed to be less of an issue in Northern Europe, evidence is very limited.

In this paper, we add to the existing literature by studying the Finnish Social Assistance scheme (*Toimeentulotuki*) and its coverage in the post-recession period and at the turn of the decade (1996-2003). We provide new micro-economic evidences that take-up is possibly an issue in this country too. We focus on working age families who are ‘potentially poor’ in the sense that their financial situation and their needs render them eligible to regular social assistance (the terminology is borrowed to Riphan, 2001). The comparison of eligibility and actual receipt at family levels exhibits a level of non-take-up of social assistance around 50%.

We also contribute on methodological grounds. On the one hand, we benefit from the use of the official microsimulation model TUJA piloted by the Governmental Institute for Economic Research (VATT). Theoretical entitlement is based on incomes and other relevant family characteristics using an algorithm that resembles relevant entitlement rules as applied by benefit agencies. On the other hand, we make use of the Income Distribution Survey (IDS), a set of register data completed with a few survey information. The quality of the administrative data allows us to sidestep some of the difficulties faced by researchers using interview-based survey data, and in particular measurement and reporting errors on both benefit receipt and family income. This gives us leisure to focus on other types of measurement errors related to timing of benefit receipt and (unobserved) discretionary decisions by municipalities in charge of granting social assistance. We provide an extensive sensitivity analysis of our non-take-up measures to various assumptions on (unobserved) assessment of family needs.

Thirdly, we estimate a simple probit model of non-take-up on a detailed set of socio-demographic characteristics. The estimation is conducted on pooled years, thereby benefiting from a relatively large sample, and on each year separately, to assess the stability of some determinants of non-take-up behavior. We decompose the probability of non-take-up into factor effect and return effect – an extension of Oaxaca-Blinder to binary decisions – in order to explain the change in non-take-up rate over time. While the number of eligible caseloads seems relatively stable, receipts show a declining pattern, leading to an increase in non-take-up rates. We suggest several possible factors, among which a change in the nature of the potentially poor population, a change in claiming behaviors during the economic recovery and tighter eligibility conditions linked to ‘activation’ policies. We favor the first explanation, a composition effect

characterized by a decrease in the number of long-term unemployed (who typically claim more) and an increase that of self-employed (who typically claim less).

The paper is structured as follows. In Section 2, we review the literature on take-up, describe more specifically the context of Nordic countries and the recent economic circumstances in Finland. Section 3 describes the social assistance rules in Finland. Section 4 presents the data and the selection as well as the assumptions retained in the baseline simulation. In Section 5, we check the robustness of non-take-up measures to variations in the level of acceptable needs as assessed by municipal agencies. Section 6 deals with the estimation of non-take-up decisions according to various empirical strategies and an attempt to explain the recent trend in claiming decisions. Section 7 concludes.

2 Social Assistance and Coverage Issues

2.1 A Brief Review on Non-take-up Issues

Benefits for which household have to applied often suffer from a substantial level of non-take-up, indicating that factors other than household economic situations strongly influence the decision whether or not to apply. This issue is especially serious when transfers are aimed to increase standards of living of low-income families. The OECD report of Hernanz et al. (2004) states that: "Despite [...] methodological differences, and the very few OECD countries for which estimates are available, the available evidence suggests that low take-up of welfare benefits occurs both across countries and programmes. Estimates typically span a range of between 40% and 80% in the case of social assistance and housing programs, and between 60% and 80% for unemployment compensation." As we focus precisely on social assistance, Table 1 gives a flavor of non-take-up levels in poverty-alleviating transfers, as studied in recent studies.¹ First, it turns out that non-take-up rates can be as high as 63% in Germany. Then partial coverage may have important consequences by translating into higher financial poverty. Second, the broad interval of result shows that measurement error is a fundamental difficulty when studying the non-take-up of welfare benefits.

The different studies reported in Table 1 are based on different methodologies but most of them rely on survey data. It is well-known that interview-based surveys are subject to measurement or under-reporting errors on both income (used to assess eligibility) and benefit amounts actually received.² At the same

¹A more comprehensive survey is provided by Hernanz et al. (2004) and de Neubourg et al (2005). A survey and results on the Netherlands are presented by van Oorshot (1991). There is also some literature on the take-up of unemployment benefits, housing benefits and other family benefits (surveyed by Hernanz et al., 2004) as well as in-work transfers (see Brewer, 2003). Currie (2004) provides an interesting discussion and a survey for the US and the UK. Craig (1991) compares the approaches followed by economists and sociologists and regret the lack of collaboration. Sociologist have developed behavioral models of the claiming process, in which agents pass a sequence of steps on the way to obtaining the benefit.

²Some surveys are specifically designed to measure and understand take-up of welfare benefits. Yet, they are costly and rarely done in practice (see Daponte et al., 1999, for a survey evaluating the coverage of Food Stamp programs in the US, see Atkinson, 1989, for a discussion). More problematic, they are often too specific so that results cannot be generalized to the entire population. Other studies explain take-up using econometric models with various techniques to control for the existence of measurement error (Duclos, 1995, McGarry, 1996, among others).

time, most studies based on administrative data are only available for the sample of welfare recipients, thus excluding the eligible non-recipients. Indeed, social security administrations only keep track of individuals who apply for welfare benefits and not of those who are potentially eligible but never get in contact with the administration. In the best case, administrative data include some information about individuals who applied but were refused the benefit.³ It is sometimes possible to combine administrative and survey data to produce estimated take-up rates, but one must be careful in correcting for the different sampling structures.⁴

The present study avoids above shortcomings by using a unique source of administrative data, the Finnish Income Distribution Survey (IDS), which combines register information on both household characteristics (income, demographics) and social assistance receipt. This way, we can devote our attention to other types of measurement errors which might explain biases in take-up assessment. In particular, we focus on two specific difficulties in the following sections. First, allocation rules are sometimes only partially observable due to discretionary decisions at local levels. Second, the reference period of available income data (the year, in our case) differs from that over which eligibility is tested by the administration (the previous month in the general case).

Table 1: Some Literature on the Non-take-up of Social Assistance

	Country	Data	Years	Program*	Selection	Non-take-up rate
Moffitt (1983)	US	Panel Study of Income Dynamics	1976	AFDC	Single mothers	55%
Bank and Ruggles (1996)	US	Survey of Income and Program Participation	1986-87	AFDC	Single mothers	30% - 38%
Bank (1997)	US	Current Population Survey (CPS) and administrative data	mid 70s to mid 80s	AFDC	families with children	10% - 40%
Kim and Mergoupis (1997)	US	Survey of Income and Program Participation	1976-88-89	AFDC	Working poor	46%
Fry and Stark (1989)	UK	Family Expenditure Survey	1984	Supplementary Benefit (SB)	All	13% - 19%
Pudney et al. (2002)	UK	Family Resource Survey	1997-2000	Income Support (IS)	Pensioners	34% - 35%
Bramley et al. (2000)	UK (Scotland)	Scottish House Condition Survey	1996	Income Support (IS)	All	30-50%
Terracol	France	European Community Household Panel	1994-96	Minimum Income (<i>RMI</i> and <i>APIJ</i>)	All	35% - 48%
Neuman and Hertz (1998)	Germany	German socio-economic Panel	1991	Social Assistance (<i>Hilfe zum Lebensunterhalt</i>)	All	52.3% - 58.7%
Kayser and Fryck (2000)	Germany	German socio-economic Panel	1996	Social Assistance (<i>Hilfe zum Lebensunterhalt</i>)	All	62.9%
Riphahn (2001)	Germany	Income and Expenditure Survey (EVS)	1993	Social Assistance (<i>Hilfe zum Lebensunterhalt</i>)	All	62.3%

Note: AFDC is the Aid to Families with Dependent Children. Supplementary Benefit (SB) is the ancestor of the Income Support (IS) in the UK.

³See Halpern and Hausman (1986) for a study on disability insurance in the US (1972 data) and Rouwendal (2002) for a study about housing benefits in the Netherlands.

⁴Blank (1997) have compared results from administrative records (on actual participants) and from general-purpose survey data (to identify potential recipients).

2.2 The Finnish Context and a First Look at the Coverage of Social Assistance in Finland

Contrary to Germany or the UK, there is little evaluation of the coverage of social assistance in Nordic countries and especially in Finland.⁵ A simple reason is that the large number of recipients in Finland compared to other countries – from 15% to 11% of the households over the period of interest (1996-2003) – conveys the idea of satisfying level of coverage. However, this question has not been investigated fully and receives attention in the present study.

The first important aspect is the interaction of social assistance with other transfers in case of unemployment. As in many countries, Finnish workers who have contributed long enough receive (contributory-base and non-means-tested) unemployment benefits for a limited period of time.⁶ Unemployment assistance, introduced in 1994, covers those who are not entitled or have exhausted their rights; it is non-contributory, means-tested (except for unemployed aged 55 or more) and time unlimited. For long-term unemployed, unemployment assistance is low,⁷ and hence typically topped-up by social assistance, a last resort form of economic assistance available when family's income is not enough to manage on a daily basis.⁸

Also, it is worth recalling that the deep recession experienced by Finland in the early 90s (Figure 1) has caused the loss of nearly half a million jobs and left deep scars. The strong growth period of the second half of the 90s has contributed to a reduction in unemployment, but pre-recession levels have not been restored. Youth unemployment, in particular, has decreased slowly and remained around 20%, that is, 4 (9) percentage points above Sweden (Norway). Long-term unemployment is officially defined as the proportion of unemployed workers out of work for 12 months or more. Interestingly, a significant decrease in the proportion of long-term unemployment occurs in our period of interest. Later, we shall exploit this information in relation with levels of social assistance receipts. Long-term unemployment is nonetheless persistent, stabilizing slightly below 25% of total unemployment after 2002.

Anticipating slightly on the next Sections, we present in Table 2 the proportion of Finnish families receiving or entitled to SA in the selected sample of working age families (students and pensioners are

⁵An exception is Virjo (2000, in Finnish) who uses a mail survey of a representative 1995 population sample (N=1859). Also, Gustafsson (2002) studies non-take-up in Sweden in 1985 and 1997.

⁶Precisely, the system is made of a mandatory scheme, giving right to a basic allowance for those who have worked 43 weeks during the last 24 months with a minimum of 18 hours a week, completed by a voluntary income-related scheme. The entitlement duration is 500 days (longer for elderly unemployed just as in Sweden and Denmark). The basic allowance is a bit less than 23 euro/day and the proportional allowance adds 42% of the difference between the daily wage and the basic allowance. Young people aged 17 who have not finished their training course or the ones aged from 18 to 25 who refused employment schemes or training are excluded from the system. Specific measures are set for older unemployed.

⁷It amounts to the basic unemployment allowance, with smaller child supplements, or 60% of it for first time entrant in the labor market, living with parents and not participating to labor policy measures.

⁸Saarela (2004) analyzes the strong link between unemployment duration and propensity to become SA recipient in Finland. Long-term unemployed (typically receiving unemployment assistance) are more likely to become social assistance recipients and to spend longer periods on social assistance than short-term unemployed (recipients of unemployment insurance, typically larger than unemployment assistance).

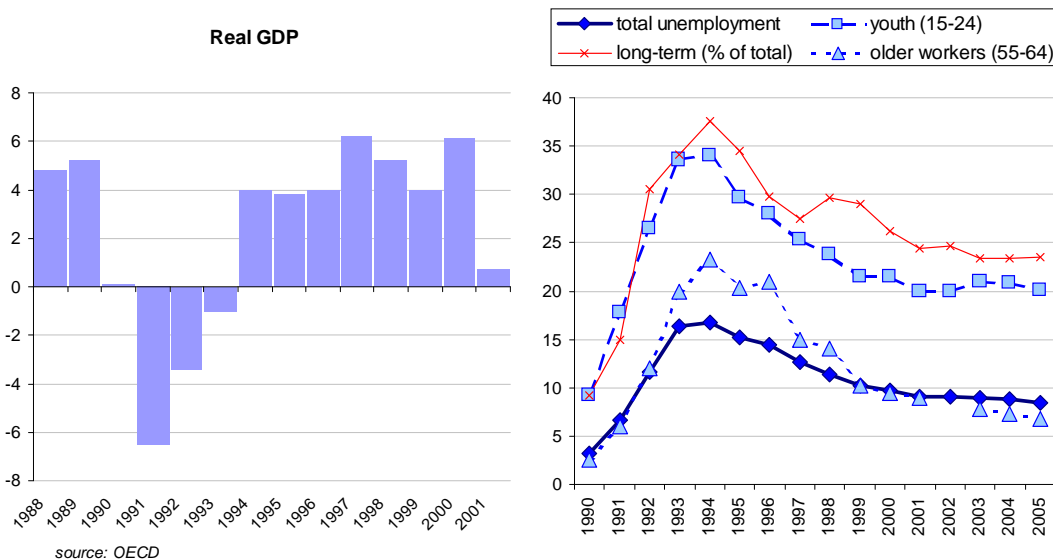


Figure 1: Growth and Unemployment in Finland

excluded). While the number of recipients has dramatically increased in the first half of the 90s due to the recession, Table 2 reports a declining trend, from 9% in 1996 to 6% in 2003. Interestingly, the number of recipients, as identified using IDS data, is much lower than that of ‘potentially poor’ families, i.e. those families eligible to SA according to our simulation using the model TUJA. The coverage of potential poverty then appears to stand below 50% in most years (measure 1). The coverage is about 10 percentage point larger (measure 2) when figures include a residual category comprising families entitled to other types of social assistance (preventive SA, SA for rehabilitating work, short-term SA, etc.) and families which escape from our eligibility assessment for the main SA scheme (beta-error). Even if most countries would dream of poverty rates as low as in Finland, our calculations reveal that partial coverage of potential poverty may lead to higher actual poverty. Precisely, for year 1998, official statistics (Statistic Finland, 2001, Riihelä, 2001) give a headcount ratio of 4% (half-median line, OECD scale) while a rate of only 3% would be achieved in case of full-coverage.⁹

3 Social Assistance in Finland

3.1 General Features

We focus in this study on the main or regular SA scheme in Finland, aimed at supporting living expenses of low-income families. It is paid on a monthly basis, according to an income test on the previous month

⁹In turn, tax-benefit microsimulation models used for policy analysis typically underestimate poverty, precisely because they ignore the possible non-take-up of social transfers. The European microsimulation model EUROMOD, for instance, gives a poverty rate of 3% for Finland by assuming 100% take-up of social benefits (cf. Mantovnai and Sutherland, 2003). There is scope for taking account of non-take-up in these models (Hancock et al., 2003).

Table 2: Coverage of Social Assistance (selected sample)

Proportion of families	1996	1997	1998	1999	2000	2001	2002	2003
(A) Potentially poor (SA eligible)	18%	16%	17%	15%	15%	16%	15%	15%
(B) SA recipients	9%	8%	8%	7%	7%	7%	6%	6%
(C) "Other" SA	4%	4%	4%	3%	3%	3%	3%	3%
coverage (1)	49%	52%	47%	48%	45%	43%	40%	41%
coverage (2)	58%	63%	57%	57%	54%	51%	49%	49%

Note: figures represent the proportion of total selected families (selection: working or potentially working families). Potentially poor families are those eligible to SA according to the microsimulation model TUJA. Among those, we report the number of families actually receiving SA (according to IDS data). "Other" SA are families covered by other type of SA (temporary, preventive, rehabilitating work). Coverage (1) is B/A, coverage (2) is (B+C)/(A+C).

income, and must be applied for each month. This last aspect may reinforce stigma and transaction costs. The official unit of receipt is the family, defined as single individual, single parent or couple with children under 18. Children over 17, grand-parents, other relatives or cohabitants form families of their own, possibly with their own partners and children. Several payments per household are thus theoretically possible and our simulations are indeed carried out at the family level.

By law, all private persons may be eligible to SA, except students, military and children below 18, who must be supported by their parents. SA rules described below are decided at the State level but in practice, the benefit is granted at local level by municipalities. This has two important implications for our study. First, a certain degree of discretion exists on the level of SA that can be distributed, depending on individual circumstances and their appreciation by municipal officials. Typically, municipalities are provided with a budget to top-up theoretical amounts of SA – as centrally defined – to help families with larger needs. This point is discussed in detail below. Second, a broader range of SA instruments complete the main/regular SA. Precisely, municipalities can grant one-time supplements, SA for special living situations, SA for rehabilitating work (premium grants or travel allowances) and preventive SA. These benefits are mainly motivational, i.e. aimed to "promote the social security of individuals and families, support their efforts to manage in life and to prevent their exclusion and long-term dependence on social assistance" (Ministry of Social Affairs and Health, general brochure on social assistance). In particular, preventive social assistance is granted to support an applicant's activating efforts, to ensure housing security and to alleviate sudden problems arising out of heavy debts. These forms of assistance are by nature much shorter in time.

However, the data at hand do not allow to differentiate between regular SA and other/specific forms of SA. As noted by Riphon (2001), an estimation of non-take-up behaviors could be biased if both groups were to be found in the group of eligible but non-claiming families. This is very unlikely, however. On the one hand, if families receiving special SA are not potentially poor, they do not enter our sample of interest. On the other hand, if they are eligible to the main SA scheme, it is very unlikely that they do not claim it since they are already in touch with the social administration.

3.2 Regular Social Assistance

We describe the basic rules to determine eligibility to regular social assistance at the family level. According to the legislation, social assistance is computed monthly as the difference between accepted needs (expenditures) and total family means, according to the simple formula:

$$SA = \text{Max}[0; (M + AC + HC_{sa}) - (Y + HB + FB)]. \quad (1)$$

Needs are composed of a basic amount M completed with some additional costs AC , the total of which is known as "living allowance", and accepted housing costs HC_{sa} . At an aggregate level, 70% of expenses on social assistance concern the living allowance. The income assessment accounts for net incomes Y , housing benefits HB and family benefits FB .

Defining Means

On the income side, Y corresponds to the sum of individual incomes of all family members after taxes and contributions. This includes earned income, replacement income (pensions and unemployment benefits) and capital incomes. Housing benefits HB depend on accepted housing costs, which correspond to actual costs HC up to a maximum level $C(Z)$.¹⁰ This ceiling is function of a set Z of household characteristics (age of the dwelling, flat size, municipal group, number of persons in the dwelling). Housing benefits are paid in practice to the whole household; separate rent agreements within one household are extremely rare. Whatever the number of rent agreement, however, the rule for SA income assessment is that total HB is allocated to each family according to its relative size within the household. The other family benefits FB include universal child benefits and child maintenance benefit but exclude some minor benefits.

Defining Needs

The basic amount M , function of family composition, is designed to cover the costs of living. There are two levels of basic amount, depending on the region: 375 euro for a single individual (resp. 359) living in the first (resp. second) regional group and 85% of it for the recipient of a couple (2003 figures). Increments for the presence of other family members are calculated as a percentage of the basic amount: 85% for the other spouse in a couple, 73% for a child of 18 or over, 70% for a child between 10 and 17 year, 63% for a child under 10. These figures are withdrawn by 5 percentage points for the second child and by 10 for any additional child from the third. Accepted additional costs AC consist of work related expenses (e.g. childcare fee), health care expenses and expenses due to particular situations. They are conditional

¹⁰In rented dwellings, actual housing costs HC include the rent and separate heating plus water charges. Heating costs (resp. water charges) are covered up to a fixed limit which depends on the size (resp. the number of persons in the household). Any other charges included in the rent (e.g. electricity, washing machine, parking) are deducted before calculating the benefit. In owner-occupied flats, housing costs HC are defined as fixed monthly amounts per square meter and include the maintenance charge and additional heating and water charges (up to a limit). 55% of the annual repayment on mortgage loan is included in the housing costs (80% in case of state-subsidized loans).

on a separate judgment of the family economic situation by municipalities in charge of granting social assistance and can represent a substantial extension of the basic amount.

The accepted housing costs covered by social assistance, HC_{sa} , are equal to at least those accepted in the computation of housing benefits – with the exception of 7% which is at the charge of families themselves since 1997 (the "own share") – plus part of the difference between the ceiling C and the actual costs HC , so that:

$$HC_{sa} = 0.93 \min[HC, C(Z)] + \alpha \max[0, (HC - C(Z))]. \quad (2)$$

The proportion α of the actual housing costs which is covered by social assistance – but not by housing benefits – is unknown, subject to the discretion of municipalities. For SA computations, accepted housing costs are allocated to each family proportionally to its size within the household.

4 Selected Data and Eligibility Simulations

4.1 Registered data and Selection

Finnish data are provided by the Income Distribution Survey (IDS) which contains information on incomes, direct taxes, benefits and socio-economic characteristics of the Finnish households. Most of the information (income, capital, socio-demographic characteristics) has been collected from administrative registers. Some auxiliary information is gathered through interviews conducted by Statistics Finland on the same households. This is notably the case for types and duration of occupations over the year (wage earner, unemployed, pensioner, student, military, other) and for housing costs. The impact of the potential errors of these two types of information are discussed below.

IDS is a repeated two-year panel, with half of the sample in a given year also present in the following year (but no longer). We have used the six waves from 1996 (25,328 observations) to 2003 (29,070 observations). Each year's sample is a weighted representative sample of the population of that year. Sample size for a given year corresponds to around 0.5% of the population. The measurement period for all income items is annual. Demographic information such as marital status is recorder as at the end of the year.

Information on actual receipt (yearly SA amount and number of months of receipt per family) is based on registers and does not suffer from under-reporting and measurement errors as in interview-based surveys. Compared to official statistics, as collected by municipalities, IDS provides reasonably good figures (a description and robustness check of IDS is provided by Törmälehto, 2001). Average received amounts are very similar while slight differences appear in the number of recipients (hence in total expenses) which is underestimated by 10 – 20% by IDS depending on the year. This reflects essentially the exclusion of some categories (people in hospital, nursing homes, prison, homeless) in IDS data, which are typically in the lower income group and SA receivers. We do not correct for this bias on low-income families since both eligibility and receipt of SA are evaluated using on the basis of IDS information in what follows.

We restrict our non-take-up measure to the group of working or potentially working families. In particular, students, disabled and pensioners are not selected in our sample of interest. Students are officially not entitled to SA. However, a substantial number of students do receive some SA according to IDS data. Reasons are manifold. Students work part of the year (typically the summer) for low earnings and apply to SA, possibly not declaring student status or benefiting from discretionary decisions from municipalities depending on their circumstances (e.g. when waiting for a student loan). Disabled and pensioners present higher risks of error because (i) the interaction between SA and housing benefits is not as easy to control as with working age families, (ii) they are more often subject to additional payments from municipalities in order to cover larger needs (medical expenses, health care, etc.). In the next sub-section, we devote our attention to the identification of eligible families according to the above rules. We focus on how different aspects of the simulation have been handled, including some necessary adjustments (and additional exclusion of some families likely to introduce important errors).

4.2 Eligibility: Baseline Simulation

Income Assessment

The various sources of income are recorded in administrative data, thus avoiding measurement errors or misreporting of income typical to studies based on interviews. To compute net incomes in Y , taxes and contributions are also taken from register data rather than simulated by TUJA. Benefits HB and FB are also taken from register data instead of being simulated. This way, we reduce the risk of approximation when using microsimulation programs. Levels of benefits may also be affected by non-take-up, especially in the case of housing benefits, as analyzed by Jäntti (2006).¹¹

Timing Issue on Incomes

The main difficulty concerning incomes is the lack of calendar information, similar to that discussed by Riphan (2001) for Germany. Precisely, there is not information on which month the benefit is received and what the monthly family income was for that specific month, so that it is not possible to assess exactly eligibility for each month of the year. To compensate the potential mismatch, we are using information on the number of months in each possible status (months in part-time or full-time employment, unemployment, etc) and individual amounts for various income sources (earnings, unemployment benefit, etc.). This information allows to reconstruct monthly income in each status and hence an accurate level of social assistance for each month of the year.¹²

¹¹Note that we do not estimate the simultaneous take-up of several benefits (e.g. HB and SA). This would present far too many difficulties in the present context. For the UK, Hancock et al (2004) have explicitly modeled take-up for each of the different combinations of benefit receipt. The take-up of housing benefits in Finland is studied by Jantti (2006). Note finally that in 1998, SA and HB policy rules have changed, HB becoming slightly more generous to the expense of SA, which is reduced as recipients are in charge of 7% of housing costs (see the text).

¹²A valuable exercise would consist in comparing results with and without the correction for the number of months, in

Yet, as aforementioned, month status information is not from administrative sources but based on complementary survey and hence subject to possible error. Some adjustment have been performed in case of inconsistency, by comparing for each individual the different status months (e.g. wage earner and unemployed) to the corresponding levels of incomes (e.g. wage and unemployment benefits).

Note that reconstructing the timing of income flows over the year, however, is more complicated in the case of many-person families, since there is no information on how to match status months of the different adults. Families where more than one adult changes status over the year – representing less than 5% of the selected sample – are subject to higher risk of error and withdrawn from the selection.¹³

Family Definition, SA recipient and Change in Family Composition

While there is no family classification in the original data, families are identified in our simulation according to the aforementioned definition. Using IDS information on the reference person (head of household) and his/her relation to other household members, we identify the main family as the reference person and his/her possible spouse and children under 18. In accordance to the rules, other families are grown-up children or other household members, together with possible spouse and children. Getting the “needs units” right is an important condition for accurate measure of eligibility.

As mentioned above, demographic information used to compute SA corresponds to family characteristic at the end of each year. Since SA eligibility is based on information (size, total incomes, number and age of children, etc.) at the family level, demographic changes over the year (birth, divorce, etc.) may affect SA eligibility. Using the rotative panel dimension, we have computed non-take-up rates for each year only for the sub-samples which are repeated the following year, hence controlling for possible changes in household structure over a year. Such changes are rare enough not to affect results in a significant way. The detail of this experiment is available upon request from the authors.

Wealth Test

Most importantly, own house is not included in the wealth test. More generally, it is very rare, in practice, that people have to realize their property when applying for SA. We nonetheless use capital income from tax register to check if potentially poor families are in fact making a living on rent or asset returns. Other valuable belongings (e.g. car) and savings may be accounted for by municipality officials and decrease the probability of eligibility. Information of this type is extremely rare but we believe that these cases should not affect the results substantially.

Assessment of Needs

order to assess the size of errors committed in all microsimulations which use only yearly information to establish results for a ‘representative’ month.

¹³Also, housing benefits, family benefits and capital income are assumed to be spread over the year. Considering the relative stability of receipt of those benefits and income, this approximation is less of an issue than for flows of earned or replacement incomes.

Last but not least, the assessment of needs is certainly the most problematic aspect when imputing SA eligibility in Finland. On the one hand, the basic amount M should not be a source of error, except for the change in family composition that may occur over the year, as previously investigated. On the other hand, additional costs AC and accepted housing costs HC_{sa} are unobservable.

Additional costs are subject to discretionary decisions of municipalities. Our baseline simulation account for a very limited set of costs, notably childcare costs – corresponding to a municipal child care payment – and some of the health care costs.¹⁴ However, total additional costs must still be underestimated, as proved by comparisons of observed and simulated aggregates. Many other aspects may be covered by municipalities and not recorded in the data, either due to their nature (extra costs in particular situations) or their timing (costs from previous months, e.g. unpaid rent). As aforementioned, the scope of preventative social assistance may also be large.

Accepted housing costs are defined by formula (2). The ceiling C is perfectly determined by official rules and register information on household characteristics. However, actual housing costs HC are not provided in the register data and originates from the complementary survey, thereby subject to underestimation.¹⁵ In addition, the coefficient α is also set by municipalities.¹⁶

In our baseline, we have attempted to calibrated previous unknowns so that average simulated amounts come closer to observed SA amounts for those families which are both eligible and recipient. Additional costs are then set uniformly as 20% of the basic (family-specific) amount and α is set to 1. Figure 2 shows that simulated and observed SA amounts are close on average – the increasing pattern is similar, characterizing regular increases to cope with inflation – but there is still potential for slight increases in needs. In the next section, we present a sensitivity analysis of our non-take-up measure to levels of both additional costs and accepted housing costs.

¹⁴These costs are available in the register data for the whole year and must be assumed constant over twelve months. This imputation rule is again source of error even if of less gravity.

¹⁵Indeed, a minority of households declare no or small housing costs while receiving housing benefits. This inconsistency is corrected by setting their level of actual cost to the minimum possible level that would lead to the amount of HB as observed in register data, using the housing benefit definition:

$$HB = 0.8[\min(HC, C(Z)) - G(Z')]$$

where $G(Z)$, the share of housing cost at the charge of the household (own share), is a deterministic function of household characteristics Z' (household income/month, municipal group, number of persons in the dwelling). Then, it is possible to determine HC if $HC < C$; otherwise, we only know that HC is lower bounded by C and we set it at this value. Consequently, we understate true costs and, subsequently, accepted housing costs for SA. Indeed, the first r.h.s. term of (2) is correct but the second is set to zero while probably positive.

¹⁶In (2), if the ceiling constraint is not binding, HC_{sa} is simply 93% of the actual costs. If it is binding, then HC_{sa} is 93% of C , which is perfectly defined by the rules, plus the increment $\alpha(HC - C)$ which depend on the unknown fraction α . Among households with positive amounts of housing costs, 1,714,200 are in the first case while only 655,600 are in the second case. Indeed, the ceiling C correspond to imputed rents and is then generally larger than actual costs for all the dwelling owners (especially if the loan is repaid and only operation costs, e.g. electricity, heating, are to be paid). When looking at those receiving housing benefits, a majority of whom (90%) live in a rented dwelling, things are reversed since imputed rents are usually smaller than market rent values. Then, in this group, 118,600 households are in the first case while 240,900 are in the second. The uncertainty on α thus concern around two third of the cases we are interested in.



Figure 2: Simulated and Observed Average Amounts of Social Assistance among Take-up Families

4.3 Results and Descriptive Statistics

Figure 3 describes the balance between eligible and recipient families in our selected sample during the economic recovery (second half of the 90s) and the early 2000s. Over the period, non-take-up appears to increase gradually, at least from 1997 to 2002, from around 50% to around 60%. These levels of non-take-up are comparable to what is measured for countries like Germany (cf. Neumann and Hertz, 1998, Kayser and Fryck, 2000, Riphon, 2001). For Finland in 1995, and with a fairly different type of data, Virjo (2000) finds a non-take-up group of 100,000 households, close to the 120,000 families found in our calculations for the year 1996. The corresponding non-take-up rate is 60%, close to the order found here.¹⁷

The increasing trend is explained by a relative stable population of eligible families together with a declining number of recipients. In the last section, we suggest some tentative explanations of for this pattern.

Table 3 displays the descriptive statistics of the pooled sample (years 1996 to 2003) and allows to make first comments on the characteristics of the different groups in our selection of working age families. It appears that eligible families, claiming or not, are more often singles and have less children than non-eligible families. Non-take-up families are characterised by being more frequently owner of their dwelling, being self-employed and having financial capital (and debts too!). Take-up families are in large majority recipient of unemployment assistance – twice more often than non-claimant – and characterized by longer unemployment spells, lower education and (slightly) lower income levels. In spite of this, the

¹⁷The author present two speculations as to the reason of non-take-up: (i) non-take-up families would have received small amount (but 60% of the group is actually found eligible for more than 168 euro/month in Virjo's calculation), (ii) a stigma effect, which has received some support in the Finnish research and policy groups. We thank Ilkka Virjo for numerous comments and advices for the present study.

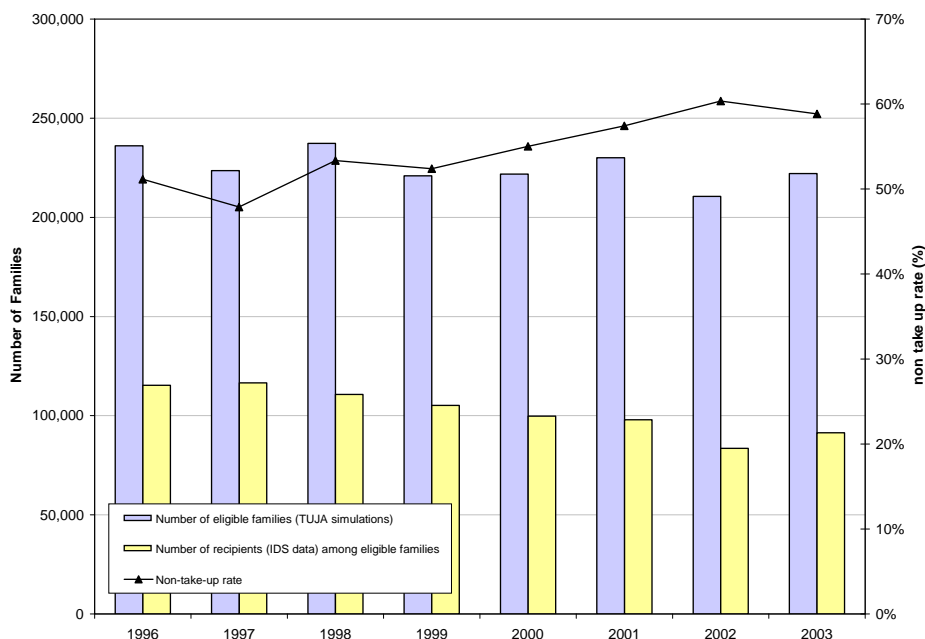


Figure 3: Trend in Non-take-up (selected sample)

average monthly amounts of entitlement, as simulated by TUJA, are fairly comparable in the two groups. In contrast, yearly amounts are 2,520 euro for the claimants and 2,320 for non-claimants, reflecting longer (potential) SA spells among claiming families.

5 Sensitivity Analysis of Non-take-up Measures

5.1 Beta Error

In this section, we check the robustness of the non-take-up measures to alternative assumptions on the need assessment, namely on the levels of additional costs (as a proportion of the total living allowance $AC + M$) and accepted housing costs HC_{sa} . An important point in this robustness analysis is the focus on the number of recipients which are not eligible according to the simulations. Figure 4 and Table 4 give some indication on the nature of this group.¹⁸

On the one hand, a large part of this "error" simply comes from the fact that recipients belong to the non-simulated categories (temporary SA, preventive SA, SA for rehabilitative work, etc.). Typically, families belonging to that group are characterized by much shorter spell of SA and Figure 4 confirms that

¹⁸We would like to thank Steve Pudney and Markus Jantti for enriching discussions on this issue. In particular, they have pointed out that variations in distributed amounts across region could indicate different levels of generosity and help identifying the relative weight of additional costs in the total living allowance. They also stressed that the incentive of administrations to grant SA are an important aspect for future studies. We discuss this point further in the conclusion.

Table 3: Descriptive Statistics

Variables	neither eligible nor recipient	take-up family	non-take- up family
single	0.47	0.80	0.78
age of head	40	37	36
presence of children 0-2	0.09	0.11	0.08
presence of children 3-5	0.09	0.09	0.09
presence of children 6-11	0.17	0.13	0.14
presence of children 12-17	0.17	0.09	0.11
own home	0.65	0.13	0.51
average gross income (euro/year)	30,813	6,908	7,863
with financial capital	0.18	0.05	0.15
with debt	0.08	0.04	0.09
living in Helsinki	0.29	0.24	0.26
head is farmer or self-employed	0.11	0.03	0.23
family receives unemployment benefit	0.19	0.24	0.22
family receives unemployment assistance	0.13	0.71	0.34
head: no. month as unemployed	1	7	3
head: no. month as salary earner	9	3	5
head holds primary education	0.22	0.39	0.29
head holds lower secondary education	0.41	0.44	0.47
head holds upper secondary education	0.18	0.09	0.13
head holds tertiary education	0.20	0.08	0.11
average SA amount (observed) (euro/month)		271	
average SA amount (simulated) (euro/month)		234	230

Sources: simulated data using the microsimulation model TUJA; administrative data from IDS.

62% of them indeed receive SA for 3 months or less over the year. On the other hand, some of the error is due to mistakes committed when imputing eligibility. Therefore, we also check the sensitivity of the beta error to various assumptions on additional costs and accepted housing costs. To focus on the true beta error in the assessment of regular SA, we focus hereafter on families receiving SA for more than 3 months, thereby avoiding much of the other/specific SA group.

Importantly, the families in the beta error group are qualitatively very different from potentially poor families. Table 4 shows that, when compared to eligible recipients, they are more frequently couples with children, thereby characterized by potentially larger needs (and risk of error in need assessments). At the same time, they are on average three times richer than take-up families. The conjunction of both characteristics may make them stand close to eligibility thresholds and easier to ‘miss’ in the eligibility assessment. In any cases, they are less at risk of poverty than families identified as eligible to regular SA, and hence out of our group of interest.

5.2 Sensitivity Analysis

The following sensitivity analysis is conducted by checking non-take-up rates for -5% , $+5\%$ and $+15\%$ variations in family-specific additional costs and accepted housing costs respectively. In principle, as explained above, needs tend to be underestimated; however, we also include possible negative variation (-5%) to check the symmetry around our baseline simulation. Results are presented in Table 5, respectively

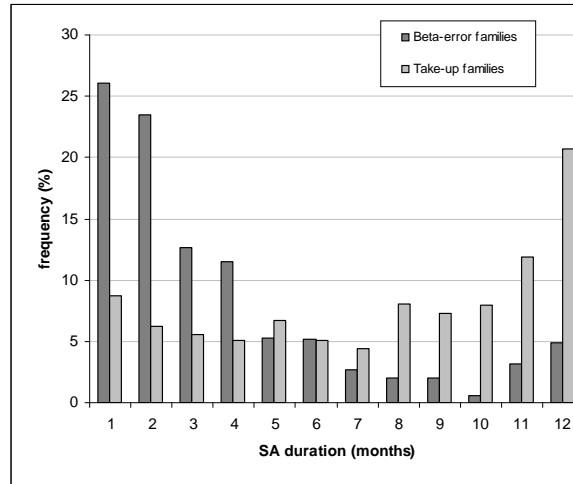


Figure 4: Frequency of Receipt: Beta Error vs Take-up families

Table 4: Family Types: Beta Error vs Take-up Families

Variables	take-up family	beta-error family
Needs		
single	80%	56%
presence of children 0-2	11%	12%
presence of children 3-5	9%	12%
presence of children 6-11	13%	20%
presence of children 12-17	9%	18%
Means		
average gross income (euro/year)	6,908	18,312
SA amounts		
average observed amount (euro/year)	2013	971

Sources: administrative data from IDS

for the whole selected sample and for long-term unemployed, specifically defined as family where the head has been employed at most two months over the year.¹⁹

Long-term unemployed are characterized by a larger propensity to claim SA: their non-take-up rate is 49% versus 59% for the whole selected sample. When including all taking-up families which are not eligible (beta-error group) into the eligible group, we mechanically decrease the non-take-up rate: this measure represents a lower bound of the non-take-up rate (last line of Table 5), which is around 8 percentage points lower than the baseline for the whole selection.

Long-term unemployed display a smaller rate of beta-error since these families – more homogenous and poorer on average – are well-targeted by our simulations. The error tends to disappear as AC is increased, which confirms that understatement of needs is the main problem in this group. In the whole selected sample, however, beta error is larger and probably caused by other measurement errors, in particular the lack of monthly information and related timing issue as explained before. Beta error levels do not change much for negative variations in needs, confirming that the bias is probably upward. Results are qualitatively similar with HC_a but with much lower elasticities. For both types of costs, measures of non-take-up do not vary much around the baseline values. This means that following an increasing in need levels, the number of beta-error families becoming eligible is comparable to the number of non-recipient becoming eligible.

Previous results rely on proportional variations of need assessments and mostly on upward variations. For the whole selected sample, we now provides sensitivity measures when additional costs (again as a proportion of the total living allowance $AC + M$) and HC_a vary randomly and both upwardly and downwardly. For this purpose, we bootstrap measures over 100 draws of random errors for each cost. Errors are normally distributed with zero-mean and standard variation equal to 10% of the cost. Figure 5 shows the results. Here too, measures are especially sensitive to changes in additional costs (living allowance), less so to changes in accepted housing costs. Nonetheless, the various simulations provide a fairly narrow confidence interval of $[.58, .60]$ for the non-take-up rate and $[.14, .18]$ for the beta error, centered on the baseline values of .59 and .16 in the case of additional costs. Simulations with variations in incomes are discussed below.

5.3 Introducing Measurement Error on Income

Measurement error is a particularly serious problem in take-up studies. Most of the previous discussions and the robustness analysis have focused on potential measurement errors specific to the Finnish case. Another type of error, frequently met in take-up studies, concerns unreliable measures of incomes in interview-base surveys when evaluating benefit eligibility. This is not an issue in the present study since incomes are taken from register data. However, as a byproduct of the previous analysis, we check

¹⁹Similar experiments are suggested in Kayser and Frick (2000). The present sensitivity analysis is inspired by Groh-Samberg and Frick (2006) and we would like to thank Olaf Groh-Samberg and Joachim Frick for their suggestions.

Table 5: Sensitivity Analysis

	Selected sample		Long term unemployed*	
	non-take-up	beta-error	non-take-up	beta-error
Baseline	0.59	0.16	0.49	0.08
Additional Costs (uniform change)*	-5%	0.580	0.479	0.08
	+5%	0.595	0.494	0.06
	+15%	0.603	0.497	0.04
Housing Costs (uniform change)	-5%	0.586	0.491	0.08
	+5%	0.593	0.492	0.07
	+15%	0.592	0.491	0.07
IDS receipts indicates eligibility (lower bound)	0.51	0	0.47	0

* The change is applied to the total living allowance M+AC. ** Long term unemployed represent 57% of the selected sample

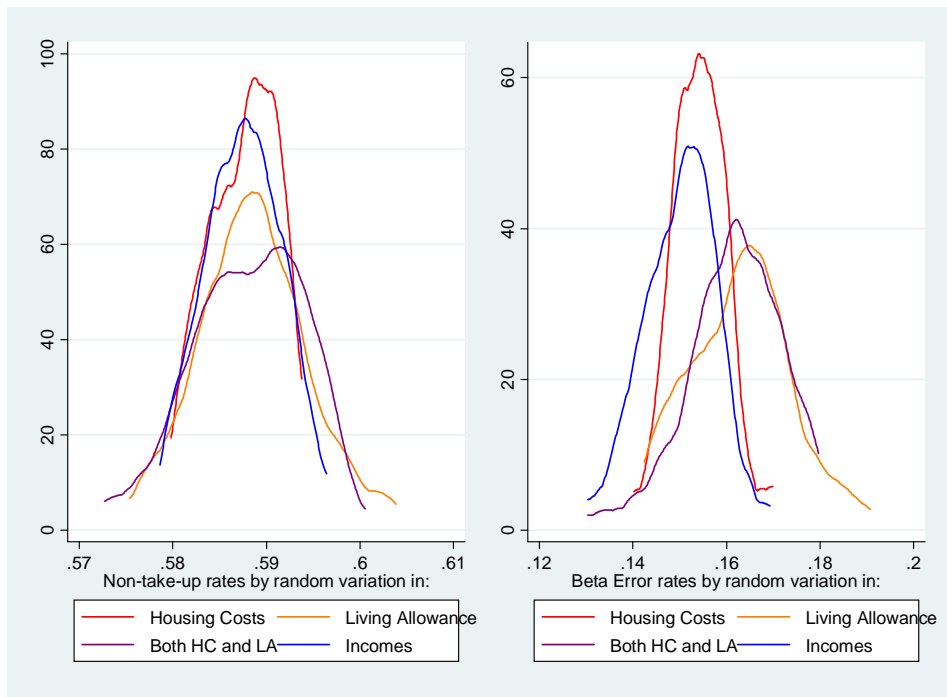


Figure 5: Sensitivity Check to Random Variation in Needs and Means

how non-take-up rate varies when incomes are affected by some measurement error.²⁰ For this purpose, we introduce artificial errors on each source of income (essentially wages and unemployment benefits), assumed normally distributed with zero-mean and standard deviation equal to 10% of each income level.

Results are presented in Figure 5. Interestingly, variations are somewhat similar to those obtained when varying the level of housing costs, which is actually the only monetary variable coming from interviews in our analysis. Most importantly, variations in the non-take-up rate are not extremely large. However, the way we introduce errors is relatively *ad hoc*, especially concerning income levels. In effect, the use of survey data is not only characterized by regular measurement error but also by errors with very specific shapes. This is in particular the case of attrition at both ends of the income distribution, especially influential on studies focused on low-income families.

More interesting would be to use actual errors in the Finnish income distribution. These could be captured by comparing interview-based survey data to the presently used register data. As a matter of fact, such discrepancies have been characterized for Finland by Jäntti (2004), using the match between the IDS register data and interviews conducted on the same households and used for the Finnish part of the European Community Household Panel (ECHP) (see also Nordberg et al., 2001). Jäntti fruitfully uses this comparison to gauge the degree of error committed when using survey data to compute measures of income distribution and poverty. Although the availability of the match between registers and interviews is very restricted, one could nonetheless use Jäntti's estimation to assess the impact of survey-based measurement errors on non-take-up measures. We keep this possibility for future research.

6 Estimation of Non-take-up

In this last section, we focus on the eligible group – the potentially poor – according to our baseline simulation and estimate non-take-up decisions. Estimates are also used to decompose the change in (predicted) non-take-up rates over time between factor effect and coefficient effect. This way, we attempt to discriminate between three possible interpretations of the increasing trend in non-take-up over the 1996-2003 period.

6.1 Model and Specification

Since Moffitt (1983), a few papers have explicitly addressed the simultaneity of labor supply and take-up decisions.²¹ As noted by Brewer (2003), however, the focus has been on improving the accuracy of the labor supply model rather than on learning about non-take-up and stigma costs.²² Most of these studies have focused on the take-up of in-work transfers, especially the British tax credits. In this case, the

²⁰Hancock and Barber (2003) show how measurement error in incomes recorded by a household survey can affect estimates of take-up models.

²¹See Hoynes (1996), Keane and Moffitt (1998), Blundell et al. (2000), Andren (2003), and Brewer et al. (2003) among others, and an interesting survey in Brewer (2003).

²²In other words, the additional information from comparing actual entitlement with theoretical eligibility allows a better fit of the labor supply model but not necessarily a precise identification of the disutility from stigma for welfare analysis.

wage rate of household facing the decision of whether taking-up the benefit is observed by the analyst. Yet, modeling jointly labor supply and take-up of social assistance is an (even) more challenging task since three components must be estimated for non-workers (wage rates, labor supply behaviors and take-up costs), which makes the identification particularly difficult.²³ We focus here on the determinants of take-up behaviors and rely on a simple binary estimation of the non-take-up decision.

It is possible to rationalize the non-take-up decision by a simple structural interpretation. The entitlement level $SA^* = B(Y, X)$ depends on a vector of incomes Y and a vector X of individual/family characteristics (including family composition, age of children, etc.). The hypothesized disutility induced by the claiming decision might be information costs (awareness of scheme, complexity of forms), process costs (time requirements) or outcome costs (stigma). Following Moffitt (1983) or Pudney et al. (2002), this disutility can be represented in cash-equivalent as a cost $e^{Z\beta+\varepsilon}$ – the exponential form guarantees positivity – which depend on a vector Z of characteristics, and a random term ε that may represent unobserved heterogeneity and expectation/optimization error committed by the family.²⁴ Denoting U a well-behaved utility function, the family will not claim the benefit if:

$$U(Y, X) > U(Y + SA^* - e^{Z\beta+\varepsilon}, X)$$

that is, if the claiming cost offsets the benefit; this condition is equivalent to:

$$\ln SA^* < Z\beta + \varepsilon$$

so that the model boils down to a reduced-form equation (the ‘propensity of non-take-up’):

$$N^* = Z\beta - \ln SA^* + \varepsilon.$$

Assuming that ε follows a normal distribution of zero mean and (unknown) variance σ^2 , this propensity is the basis of a standard binary model so that all the parameters can be estimated in a simple way.²⁵ The non-take-up rate can be written as the conditional probability:

$$P(N^* > 0/B^* > 0) = \frac{P(N^* > 0; B^* > 0)}{P(B^* > 0)}$$

approximated by the number of eligible non-recipients divided by the number of eligible families.

In the structural approach, characteristics related to the propensity of not claiming are directly linked to a cost-benefit interpretation, which justifies the presence of the entitlement level SA^* . The only

²³The issue does not occur in a recent series of papers on the take-up of social transfers in the UK since the focus is on pensioners (Pudney, 2001, Pudney et al. 2002, Hancock et al., 2004, 2006).

²⁴With this form, the claiming cost is nothing else than the equivalent variation corresponding to the preference shift induced by the claiming decision. Pudney et al.(2002) specifically attempt to recover the monetary value of stigma or transaction costs to provide adjusted poverty measures.

²⁵Non-parametric or semi-parametric techniques could also be appropriate here in order to relax assumptions about the error terms. See, for example, Pudney (2001).

difficulty may be related to the identification of this term.²⁶ In practice, few studies attempt to estimate a structural model of non-take-up. In what follows, we simply opt for a reduced form – consistent with the above model – where the non-take-up propensity $N^* = Z\beta + \alpha \ln SA^* + \varepsilon$ depends on a list of determinants obtained by specification search and where the marginal effect of $\ln SA^*$ is a priori unknown (not forced to equal unity). This way, estimated coefficients β/σ and α/σ are identified under the usual assumption of a variance equal to one. Computing marginal effects on the probability itself does not cause any difficulty other than simulating new individual probabilities for a marginal change in each of the coefficient and aggregating them.

Now, let us assume that the determinants of non-take-up, as suggested by a costs-benefit analysis, can be classified – somewhat artificially – in five groups:

1. pecuniary determinants (expected amount of the benefit), permanent income (certain groups, e.g. self-employed, may display low instantaneous income but rely on larger permanent income) and expected duration in involuntary unemployment (which could depend on education, age, local unemployment level, etc.)
2. information costs (information about program’s existence and application procedure, maybe less likely in rural areas; receipt of other benefits: individuals who are already receiving welfare are more accustomed with the bureaucracy) and transaction costs²⁷
3. costs due to delays in the administrative process and risk premium associated with uncertainty of outcomes of the claims process
4. needs (old-age or disabled, number of children or presence of young children; possibly large difference between actual family equivalence scales and implicit scales in SA rules),
5. social and psychological costs (people who are more socially active, e.g. self-employed or better educated, may be subject to higher stigma; the degree to which benefit recipients are perceived as being needy also matters, and hence the determinants of needs).²⁸

²⁶If vector Z contains the set of individual/family characteristics X used in the benefit computation $B(Y, X)$ as well as the various incomes Y , then the entitlement level SA^* is only identified thanks to parametric restriction in the specification (use of the log – nicely justified by the positivity of stigma costs) or to possible non-linearity or discontinuity in the function $B(Y, X)$. Non-linearity may come from the use of net-of-contribution and net-of-tax income, which is non-linear function of gross income (and individual characteristics). Discontinuity may result from wealth tests. Some exclusion restrictions may also apply (e.g. presence of child rather than number of children, different age group, etc.). Nonetheless, non-parametrically identification is unlikely to be obtained (see Pudney, 2001, on this issue).

²⁷Most of which is not accounted for by available variables and corresponds to cost of making or renewing claim: effort, time requirement and unpleasantness of the claims, work requirements (public work), number of interactions with agency (reporting), job-search activity by claimants (Moffitt, 1983), etc.

²⁸Other aspects are difficult to introduce through available variables. In particular, the reason for insufficient resources, the degree to which benefit is perceived to be financed by others (tax vs contribution financing; regional/municipal/federal benefit program), the number of benefit recipients in neighborhood, the degree to which benefit recipient is seen as contributing to get off welfare (work, job-search, training).

It comes clear from this classification that some variables serve different types of explanation of non-take-up. Then interpreting some of the coefficients and identifying specific reasons for non-take-up may be particularly difficult (see the discussion in Remler et al., 2001). For instance, higher education could be thought of as positively correlated with non-take-up as it might lower the information cost of applying. On the other hand, it could also increase claiming costs for being related to better labor market expectations and higher permanent income, and hence shorter expected duration of SA receipt and possibly larger stigma effects. Therefore, establishing causality requires much caution. In what follows, we simply introduce variables which could explain (at least) one of the determinants among stigma, needs, application costs and expected benefit duration.

6.2 Estimation Results

Table 6 describes the estimation results for all years and for pooled years for the whole selection; we also show the estimates for pooled years of the sub-group of long-term unemployed (last column), as previously defined. To ease the interpretation, we present marginal effects rather than coefficients.

We first focus on the results for the whole selection. Results are found to be relatively robust to different specifications for most of the covariates. All the coefficients are significant for pooled years in the retained specification, with the exception of the number of children. Interestingly, many of the coefficients remain significant in estimations for specific years. In fact, these coefficients are significant and display the same sign (and fairly close magnitudes) in all or most of the years, characterizing stable determinants of non-take-up behaviors over time. In particular, owning one's dwelling – especially if outright – and having some capital increases the probability of non-take up. The income level of other families within the same household also impacts positively on non-take-up, reflecting intrahousehold transfers as a substitute to social welfare. The activity of the head of family matters: self-employed workers take up less while long-term unemployed, i.e. as proxied by receipt of unemployment assistance, take up significantly more (between 12 and 36 ppt more), other things being equal. In addition to the unemployment assistance dummy, the number of unemployment months is significant. Long-term unemployed are known to depend on social assistance as a replacement or complement to unemployment assistance (see Saarela, 2004).²⁹

Less stable determinants goes as follow. Primary education is associated with higher take-up (the non-take-up rate decreases by between 7 and 18 ppt) for five of the years, as well as being single (between 7 and 17 ppt). The presence of children aged up to 2 significantly increase take-up only for two years and for pooled years. An alternative specification with a crossed term singles×young children shows that single parents have higher take-up rates than singles. Age is significant only in the last three last years and in pooled years; its effect is parabolic, as expected, but it first decreases non-take-up while it

²⁹Note that using the panel dimension could allow to introduce lag variables in the determinants of non-take-up, and in particular SA eligibility and unemployment duration in the previous year. The dynamics of SA claims and the formation of claiming habit is a crucial aspect. Past level of income may also indicate previous living standard and thereby the urgency to apply to SA.

could be expected otherwise (the same counter-intuitive result appears in Riphan, 2001). Note, however, that young (students) and old (pensioners), two groups who typically take-up more, are not present in the selection. The level of SA affects non-take-up behavior positively, as expected in the previous cost-benefit analysis, but with a very small elasticity.³⁰ Regional dummies are significant only for two of the years; however, they are strongly significant in the pooled year sample, which could reflect variability in municipalities' generosity over years. Year dummies are significant and confirm the time pattern discussed in the fourth Section.

Results for the group of long-term unemployed are qualitatively similar and present larger elasticities of the stable determinants, excepted for the role of unemployment assistance and $\log(\text{SA})$. The quality of the estimation (pseudo-R2) is satisfying and it is checked that predicted aggregated probabilities of non-take-up are very close to actual frequencies.

Table 6: Non-take-up: Estimates

Variable	marginal effects									
	1996	1997	1998	1999	2000	2001	2002	2003	Pool (all)	Pool (long-term unemp)
Head: Age	-0.006	-0.006	-0.002	-0.014 *	0.003	-0.017 **	-0.018 ***	-0.012 **	-0.009 ***	-0.017 ***
Head: Age square	0.000	0.000	0.000	0.000	0.000	0.000 **	0.000 ***	0.000 *	0.000 ***	0.000 ***
Head: 1 low education	-0.057	-0.074 *	-0.181 ***	-0.054	-0.068 **	-0.112 ***	-0.137 ***		-0.097 ***	-0.071 ***
1 Child 0-2	-0.020	0.011	-0.079	-0.230 ***	-0.009	-0.147 **	-0.047	-0.003	-0.050 **	-0.041
# Children	-0.015	0.001	-0.019	0.003	-0.024 *	0.013	-0.001	-0.006	-0.007	-0.011
1 Single	-0.108 *	0.027	-0.089	-0.173 ***	-0.099 **	-0.071	-0.083 **	-0.107 **	-0.089 ***	-0.003
1 Male Head (couple)	-0.131 **	-0.042	0.008	-0.096	-0.083	-0.105	-0.079	-0.056	-0.068 ***	-0.013
1 Own home (owner)	0.181 ***	0.244 ***	0.261 ***	0.164 ***	0.144 ***	0.176 ***	0.191 ***	0.189 ***	0.198 ***	0.227 ***
1 Own home (mortgage)	0.127 ***	0.174 ***	0.162 ***	0.165 ***	0.077 **	0.095 **	0.131 ***	0.181 ***	0.149 ***	0.151 ***
Other family's income (euro/year)	0.002	0.005 ***	0.004 ***	0.004 ***	0.007 ***	0.004 ***	0.005 ***	0.003 ***	0.004 ***	0.005 ***
1 Capital	0.147 **	0.156 ***	0.049	0.131 ***	0.151 ***	0.124 ***	0.069 *	0.115 ***	0.125 ***	0.173 ***
1 Self-emp.	0.197 ***	0.190 ***	0.262 ***	0.265 ***	0.172 ***	0.207 ***	0.149 ***	0.203 ***	0.218 ***	0.358 ***
1 Unemp. assist.	-0.364 ***	-0.203 ***	-0.197 ***	-0.214 ***	-0.128 ***	-0.152 ***	-0.185 ***	-0.146 ***	-0.195 ***	-0.157 ***
# Unemp. months	-0.024 ***	-0.015 ***	-0.007	0.000	-0.009 ***	-0.007 **	-0.006	-0.005	-0.007 ***	
log (SA)	-0.034 **	-0.002	-0.045 ***	-0.073 ***	-0.027 **	-0.034 ***	-0.040 ***	-0.055 ***	-0.040 ***	-0.026 ***
Year 1997									0.008	0.030
Year 1998									0.050 **	0.036
Year 1999									0.058 ***	0.041
Year 2000									0.095 ***	0.097 ***
Year 2001									0.088 ***	0.088 ***
Year 2002									0.101 ***	0.092 ***
Year 2003									0.066 ***	0.070 **
Significance of regional dummies	no	no	yes	no	no	no	no	yes	yes	yes
No. observations	863	867	864	819	854	854	867	1004	7032	4143
Pseudo R2	0.28	0.27	0.33	0.36	0.41	0.36	0.41	0.34	0.32	0.37
Non-take-up rate	51.1%	47.9%	53.3%	52.4%	55.0%	57.4%	60.4%	58.8%	54.5%	46.8%
Predicted rate	51.2%	47.6%	53.4%	52.2%	54.9%	57.0%	60.1%	58.8%	54.4%	46.7%

Note: Figures in the upper table represent marginal effects, i.e. changes in the probability of non-take-up following a marginal change in the explanatory variable. Level of significance: *=10%, **=5%, ***=1%. Omitted year is 1996. Regional dummies: LR test at the 10% level. Standard errors (not represented by lack of space) are Huber-White corrected.

³⁰Evaluated by simulation over the whole sample (pooled years), a 10% increase in SA translates into a decrease in non-take-up probability of around 0.5 ppt, to be compared for instance to 2 ppt in Riphan (2001). Depending on the year, the decrease varies between 0.3 and 0.8.

6.3 Decomposing recent Trend

6.3.1 Possible Explanations

Finally, we come back to the non-take-up trend over the period of interest as represented in the fourth Section (Figure 3). We argue that the increase in non-take-up rate between 1997 and 2002 could be the result of (i) a change in the composition of the eligible group, (ii) a change in claiming behaviors in the post-recession period, (iii) tighter (unobservable) eligibility conditions due to activation measures.

The first intuitive set of explanation is related to the nature of unemployment and the composition of the eligible population. We refer here to the trends in unemployment rate and duration of Figure 1. On the one hand, unemployment rates tend to stabilize around 10% after 1999 so that the number of SA eligible families becomes relatively stable. On the other hand, the share of long-term unemployment decreases (from 30% to 23%), as can be seen on the graph. Long-term unemployed have a larger propensity to take-up so that the change in the composition of the unemployed group – long-term unemployed partly replaced by short-term unemployed – would mechanically decrease take-up. This explanation remains to be checked at the level of our selected sample of eligible families.

Second, it is possible that take-up behavior has changed. In particular, the stigma from being on welfare may be larger after an economic recovery than during the recession time.³¹ This would induce people to look for other sources of income than welfare assistance, inducing the development of working poor. A related interpretation is that the transaction costs of taking up welfare, relatively to the cost of job search, may be larger. Change in claiming attitude should translate in significant changes in estimated coefficients.

Finally, an other type of explanation is not related to individual choices and suggest that part of the non-take-up issue is only apparent and reflects in fact non-observable eligibility conditions. In consequence, the apparent increase in non-take-up would be due to stricter eligibility conditions contained in newly enforced activation measures. In fact, the 1998 Social Assistance Act has reaffirmed the right to social assistance and increased primary benefits, thereby contributing to a relieve in the social assistance scheme. It also strengthened work incentives through cuts in benefits and introduced sanctions from 20% to 40% of the benefit in case of non-compliance. The 2001 Act on Rehabilitative Work called upon the municipalities to provide different kinds of activation measures. Participation in rehabilitative work was made compulsory for those under age 25 and in danger of social exclusion. Long term unemployed in that age group are to be offered work or training after three months of unemployment which they may not refuse, or at the risk of losing eligibility to unemployment assistance.

³¹Mood (2004) shows that the number of SA recipient has substantial effects on the propensity of take-up. She studies youth unemployed in Stockholm region during the years 1990-9, that is, during and after the recession in Sweden. Sociological studies show that an important determinant of the stigma level is the perceived normality of the behavior, which in turn is dependent on the number of people exhibiting the behavior. Mood's results indicate that the level of SA in one year has a positive (negative) effect on the next year's inflow (outflow) of SA recipients, after control for usual take-up determinants, hence lending support to the hypothesis of a self-reinforcing process.

Activation measures have not been applied at a scope that would radically change the picture in terms of SA eligibility. They have actually concerned mainly unemployment assistance, which is by definition conditional on participation in training or ALMPs for most of the recipients. However, this could explain the change in composition of the eligible group as stated in the first suggestion above, simultaneously with the decreasing trend in long term unemployed. Also, the 1998 Act has not threatened eligibility but the level of benefit in case of non-compliance. Finally, the activation measures in the 2001 Act concern mostly young age workers. As a matter of fact, estimations for year 2001 and the next show that young workers (apparently) take up less, which could give some support to this explanation. Alternatively, it could also signify that older workers take up more as they are concerned by longer expected unemployment spells.

6.3.2 Decomposition

To bring further light on the relative merit of the different explanations above, we use an Oaxaca-Blinder type of decomposition applied to the non-take-up binary decision (see Yun, 2005, Fairlie, 2005, Nielsen, 1998). Precisely, the gap in (predicted) non-take-up rate between 1997 (the lowest non-take-up rate) and 2002 (the highest) is decomposed into a contribution of the estimated coefficients and a contribution of the variables. This gap represents 12 ppt in the whole sample and 10 ppt for long-term unemployed. Table 1 summarizes the main result – a more complete set of results with all variables is available upon request.

It seems that the composition effect dominates in the whole selection, due to a decrease in the number of unemployment assistance recipients (-3 ppt) and unemployment months (from 4.4 to 3.8 months on average), but also to some extent to an increase in the number of outright owners (+8 ppt) and self-employed (+3 ppt). The interpretation in terms of change in take-up attitude does not receive much support. The small coefficient effect results essentially from a change in the estimates for unemployment assistance and self-employment.

Results are somewhat similar in the long-term unemployed group but with two important differences. First, the role of the drop in unemployment spell is more important. Inactive families are characterized by a shorter period as official job-seeker (and recipient of unemployment benefits or assistance) and a longer period as simply inactive. This could reflect the composition effect due to aforementioned activation measures. Second, the coefficient effect is more substantial in this sub-group. It is due to changes in the estimates of unemployment assistance, self-employment, capital but also age levels, bringing some support to the effect of the 2001 Act on the eligibility of long-term young workers.

7 Conclusion

We study the coverage of social assistance in Finland for the post-recession period and beyond. Using administrative data, we sidestep usual difficulties linked to reporting errors on income and benefit levels and focus on other sources of measurement problems. First, some discretion in the distribution of social assistance applies at decentralized levels and renders the final assessment of family needs unobservable.

Table 7: Decomposition of the 1997-2002 Gap in the Non-take-up Probability

	Non-take-up rate			Decomposition	
	1997	2002	gap	Coeff.	Variables
Whole selection	48%	60%	12	9%	91%
Long term unemployed	43%	53%	10	28%	72%

Second, calendar information is not available, which makes it difficult to ensure a robust temporal mapping of theoretical entitlement and actual benefit receipt, especially for many-adult families. We select working age families, less at risk of error, and perform an extensive robustness check of our non-take-up measure.

We find that coverage of social assistance is only partial, non-take-up concerning about half of the potentially poor population in our selected sample. Full coverage would reduce existing poverty by 25% down to 3% of the population. Non-take-up turns out to increase over the 1997-2002 period following an important recession. This pattern seems essentially mainly to a change in the composition of the eligible group, and in particular the characteristics of unemployed workers.

Our contribution shows that despite the use of register data, the measure of non-take-up is a difficult task. Requirements in terms of data are high. At best, one would expect register information on income, characteristics and benefits, with wealth of details; monthly calendar information; population representativity; and, ideally, panel dimension. However, even demanding standards on data sources are not enough. A lot is going on also on the supply-side but little is known about organizations which provide benefits.³² Administrations' behaviors and incentives is an important and under-studied topic that deserves attention in future studies.³³ In particular, regional variation could be exploited to assess local incentives to deliver social assistance, local norms to judge family needs, variations in local budget and modes of financing welfare benefits.³⁴

³²In Finland, "the central government plays a strong guiding role in setting the basic principles of social welfare and in monitoring their implementation. Municipalities are required to provide social welfare services according to the needs of their inhabitants. Although this is a statutory requirement, the law does not specify the extent or content of the services nor the manner in which they should be provided. Municipal authorities thus exercise broad discretion in how to provide these services. There are, however, in some respects very detailed provisions on the obligation to provide services." (Ministry of Social Affairs and Health, "Social welfare in Finland" general information brochure).

³³The funding of municipalities can be questioned, in relation with the level of discretionary SA. In Sweden and Denmark, for instance, half of the social budget must be covered by local authorities. In Finland, only 20% of the social protection is financed by municipalities own funding. The rest is financed by employees and employers' contributions, taxes and other resources of the central government (Ministry of Social Affairs and Health, "Strategies of Social Protection", 2001).

³⁴In this perspective, further work should focus on checking variations in beta error (and in gaps between simulated and observed SA levels) across regions. There have indeed been large differences between municipalities in what they grant and how much preventive SA they use. Hiilamo et al. (2004) documents a recent change in the system aimed at unifying the standards across municipalities and thus encouraging and forcing municipalities to use preventive and discretionary SA. Since 2003, this has led some municipalities, previously more generous, to cut back on their SA practices. The study provides a calculation of "bureaucracy traps" with overlapping minimum income support systems.

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