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How Tight are Safety-Nets in Nordic Countries? Evidence from Finnish Register Data*

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Abstract

The non take-up of social assistance benefits due to claim costs may seriously limit the anti-poverty effect of these programs. Yet, available evidence is fragmented and mostly relies on interview-based data, potentially biased by misreporting and measurement errors on both benefit entitlement and income levels used to assess eligibility. In this paper, we use Finnish administrative data to compare eligibility and actual receipt of social assistance by working-age families during the post-recession period (1996-2003). Possible errors due to time-period issues and discretionary measures by local agencies are carefully investigated. Non take-up is found to be substantial – between 40% and 50% – and increasing during the period. Using repeated cross-section estimations, we identify a set of stable determinants of claiming behavior and suggest that the increasing trend is mainly due to a composition effect, i.e. a decline in the proportion of groups with higher claiming propensity. We finally discuss the targeting efficiency of the social assistance scheme.

Key Words : take-up, social assistance, poverty, register data.

JEL Classification : D31, H31, H53, I38

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1 Introduction

Most OECD countries operate social assistance (SA) programs designed to secure a minimum level of resources for low-income families. Yet, the redistributive effectiveness of such policies can be compromised if intended recipients end up not claiming benefits. This may be due to informational problems, stigma effects or other sorts of explicit or implicit claim costs. A growing literature for Germany, the UK and the US in particular, effectively points to a substantial non take-up of social transfers (see surveys of Hernanz et al., 2004, and Currie, 2004, among others). As a result, evaluations of the cost and anti-poverty effects of SA schemes (and reforms thereof) can be seriously biased if they are based on the assumption of full benefit take-up.

SA schemes are particularly generous in Northern Europe but evidence on potential non take-up issues is rather limited. We address this question by studying relevant claiming patterns in the Finnish SA scheme (*Toimeentulotuki*) over 1996-2003. This period is of special interest as it covers the years following the deep 1990s recession and represents a time that saw significant changes in labor market opportunities and the nature of unemployment. We focus on working-age families whose needs and financial situation make them eligible for regular social assistance.

First, and most important, we compare theoretical benefit entitlements with actual benefit receipt for this selected group. Actual receipts are observed using an administrative data source, the Income Distribution Survey (IDS). Entitlements are simulated using TUJA, the tax-benefit calculator maintained by the Government Institute for Economic Research (VATT) and the Finnish Ministry of Finance. The algorithms used in the program resemble as closely as possible the relevant entitlement rules as applied by benefit agencies. Household characteristics used to simulate eligibility rules are based on register information from IDS data and are largely identical to the information used by benefit agencies to assess formal entitlement. Importantly, this allows us to sidestep some of the considerable difficulties faced by researchers using interview-based survey data and permits a stronger focus on other types of measurement issues. In particular, individual benefit authorities have some room for discretion on entitlement levels and we attempt to throw light on this issue by providing a careful sensitivity analysis of our take-up measures. In line with several studies for other countries, the resulting micro-economic evidence points towards significant degrees of non take-up of SA in Finland – about 40-50%. Moreover, receipts show a declining pattern while the number of eligible caseloads seems relatively stable, leading to an increase in non take-up rates over the period of interest.

Second, we investigate which types of families are more likely to claim benefits to which they are entitled. We estimate a simple probit model of non take-up on a detailed set of socio-demographic characteristics. Estimations are carried out both on pooled years and on each year individually in order to assess the stability of the estimated coefficients. To explain the increasing trend in non take-up rate over the period, we decompose the gap in the (estimated) non take-up probability between the initial and the final period. We suggest several possible factors, including a change in the composition of the eligible group, a change in claiming behavior and tighter eligibility conditions linked to 'activation' policies. We

favor the composition effect, which is mainly driven by a declining number of long-term unemployed – typically more likely to claim SA – within the SA eligible group.

The paper is structured as follows. In Section 2, we review the literature on benefit take-up with a focus on the (limited) evidence from Northern countries. Section 3 discusses the economic and policy context in Finland and provides an overview of social assistance rules. Section 4 describes the data, the selection and how theoretical benefit entitlements are determined in the baseline simulation; we then present and discuss non take-up measures (a sensitivity analysis is developed in the Appendix). In Section 5, we estimate the determinants of non take-up behavior and attempt to explain the recent trend. Section 6 concludes.

2 Previous Studies and Present Approach

There is evidence of non take-up for several countries and different types of benefits. According to Hernanz et al. (2004), estimates typically span a range of between 40% and 80% in the case of SA and housing benefit programs, and between 60% and 80% for unemployment compensation. Table 1 specifically reviews some studies on the non take-up of SA and poverty-alleviating transfers. Several observations stand out. First, non take-up rates across countries and SA schemes vary considerably – certain policy designs are more effective than other – but are always significant. Second, there are sizable differences across studies for the same scheme (e.g. AFDC), which indicates that data and measurement issues present a fundamental difficulty when studying benefit take-up. For Germany, however, all studies report non take-up rates exceeding 50%. This is of particular interest here because the German SA system is very similar to the Finnish scheme (cf. Bargain and Orsini, 2006).

Contrary to Germany, the UK or the US, there is little empirical evidence on SA benefit take-up in Nordic countries and in Finland in particular. One simple reason could be that the large number of SA recipients in Finland compared to other countries – 9% of all households in 2003 according to the administrative data IDS – may convey the idea of a satisfactory targeting of families "in need". Yet, the few available studies on this question support the opposite view. Virjo (2000) uses a small mail survey of the 1995 Finnish population while Gustafsson (2002) studies self-reported claiming behavior using Swedish data for the years 1985 and 1997. Both studies find a very large degree of non take-up as indicated in Table 1.

In Finland, the Ministry of Social Affairs and Health (2006) notes that "The recent discussion on the under-utilization of social protection may indicate that there may be great differences between households' knowledge concerning income security." Other official reports support Virjo's interpretation of non take-up as resulting from a stigma effect. However, the Ministry emphasizes the difficulties involved in producing reliable estimates using interview-based data. Indeed, the latter tend to suffer from measurement errors and in particular from misreporting of income data – used to assess benefit eligibility – and of received amounts. This limitation applies to most studies reported in Table 1.[1] Interview-based surveys tend to

[1] Other studies use various econometric techniques to control for the existence of measurement error (Duclos, 1995,

overstate non take-up, as discussed by Hernanz et al. (2004) and shown by Blank (1997) in the case of the AFDC.

The present study avoids some of these difficulties by using administrative data from the Finnish Income Distribution Survey (IDS) to identify both eligible families and actual recipients. While information on income, family characteristics and received SA amounts is particularly reliable, as described below, we shall devote our attention to address two other types of measurement issues. First, allocation rules are sometimes only partially observable due to discretionary decisions on the part of benefit agencies. Second, the reference period of available income data (the year, in our case) is not the same as the income assessment period used by the administration when determining eligibility (the previous month or the two previous months, depending on the cases).

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%
Blank and Ruggles (1996)	US	Survey of Income and Program Participation	1986-87	AFDC	Single mothers	30% - 38%
Blank (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 (*RMI* and *API*)	All	35% - 48%
Neuman and Hertz (1998)	Germany	German socio-economic Panel	1991	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	52.3% - 58.7%
Kayser and Frick (2000)	Germany	German socio-economic Panel	1996	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	62.9%
Riphahn (2001)	Germany	Income and Expenditure Survey (EVS)	1993	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	62.3%
van Oorschot (1995)	Netherlands	data on Rotterdam and Nijmegen	1990	Special Social Assistance	All	53% - 63%
Virjo (2000)	Finland	Mail survey (U. of Turku)	1995	Social Assistance (*Toimeentulotuki*)	n.a.	60%
Gustafsson (2002)	Sweden	n.a.	1985, 1997	Social Assistance	All	70-80%

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

McGarry, 1996, among others).

3 Social Assistance in Finland

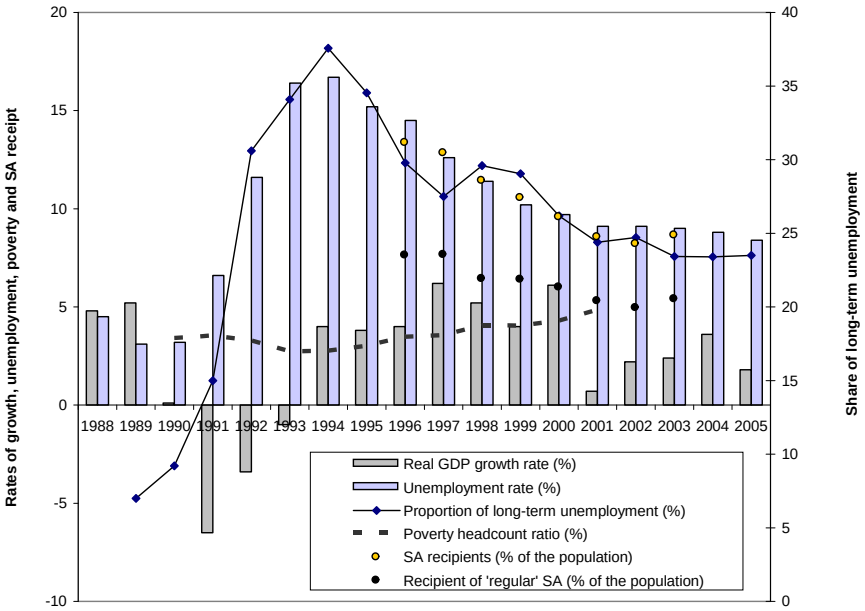
3.1 The Economic and Policy Context

In Finland, the deep recession of the early 1990s has caused the loss of nearly half a million jobs, pushing the unemployment rate from less than 5% to more than 15% and leaving deep scars in the labor market and beyond. While a period of strong growth in the second half of the 1990s has contributed to a reduction in unemployment, pre-recession levels have not been restored, as illustrated by Figure 1. The large changes of aggregate out-of-work figures have been accompanied by changes in the composition of the unemployed group. In particular, long-term unemployment, officially defined as being out of work for 12 months or more, has slowly decreased below 25% of total unemployment in 2001. We will exploit later this change in the nature of unemployment over the period of interest (1996-2003) to explain the trends in non take-up. Figure 1 finally report available figures for the actual poverty rate (the simulated one precisely suffers from the assumption of full take-up). According to Riihelä et al. (2001), the headcount ratio of *relative* poverty decreases during the early 90s because the recession hits middle and high income as much as poorest groups. While absolute poverty has however increased substantially over the period, universal social security and welfare assistance have played their role as safety nets, the proportion of households receiving SA increasing from 6% to 13% of the population. The rise of relative poverty in the second half of the 90s is explained by a relatively faster recovery for higher income groups.

Understanding the interactions between entitlements to SA and "first tier" unemployment benefits is also important. As in many countries, Finnish workers with sufficient contribution records are entitled to unemployment insurance benefits for a limited duration of unemployment. The system consists of a basic mandatory scheme and, like in the Danish and Swedish systems, a voluntary earnings-related top-up. Both are non-means tested.[2] Unemployment assistance, known as Labor Market Support in Finland, was introduced in 1994. It covers jobseekers who are not entitled to insurance benefits (notably the young unemployed) or have exhausted their entitlements. It is non-contributory, means-tested (except for older unemployed aged 55 and above) and not limited in time. The maximum amount of unemployment assistance is similar to the basic allowance under the unemployment insurance scheme but is reduced with a means test. Importantly, the resulting entitlements can be topped up by SA benefits.[3] In fact, the concurrent receipt of unemployment and social assistance benefit is common, particularly among the long-term unemployed (see Saarela, 2004). In what follows, we indeed find that this group has a larger propensity to claim SA.

[2] The mandatory scheme provides a basic allowance for those who have worked 43 weeks during the last 24 months with a minimum of 18 hours a week (2002 figures). The voluntary earnings-related scheme generally expires after 500 days of unemployment. The basic allowance is a bit less than 23 euro/day and the voluntary earnings-related component adds some 42% of the difference between the daily wage and the basic allowance (and 20% beyond a certain income limit). Specific measures are in force for elderly unemployed and restrictions are imposed on younger unemployed.

[3] Before accounting for any housing-related payments, SA entitlements for a family with two children amounts to around 50% of gross average wages in the manufacturing sector in Finland (2002 figures), compared to 48% in Sweden, 46% in the UK, less than 40% in Germany, and up to 70% in Denmark.



Poverty line: 50% of the median of equivalised income (modified OECD scale).
Sources: OECD; Income Distribution Survey; own calculations.

Figure 1: Growth, Unemployment and Poverty in Finland

3.2 General Features

We focus in this study on SA payments aimed at supporting recurring living expenses of low-income families, or 'regular' SA. It is paid on a monthly basis and is generally means-tested on the income of the previous month. The assessment unit is the nuclear family, defined as a single individual or a couple plus all children under 18. Children over 17, grand parents, other relatives or cohabitants are considered families of their own (possibly with their own partners and children). It is therefore possible that one physical household would consist of more than one family and, correspondingly, receive more than one SA payment.

Subject to relevant income criteria, all private adult persons can apply for SA benefits. In theory, military and students (during term time) are not entitled to it – the case of students is further discussed in the next Section. SA rules described below are decided at the national level but SA is administered locally by municipalities. This has two important implications for our study. First, benefit agencies can apply some discretion when deciding whether claimants' circumstances make them eligible for SA support. Typically, municipalities are provided with a budget in order to assist families experiencing situations of particular hardship and whose 'needs' may therefore exceed those defined by national SA rates. We come back to this important point below. Second, SA regulations allow for a broader set of transfers than just regular SA. Municipalities can grant one-off supplements, SA for special situations (sickness, change in family circumstances and other "life events") and SA in support of re-integration or rehabilitation measures (cf. Ministry of Social Affairs and Health, 2006). A preventative SA benefit can

also be granted by municipalities, for instance to support job-search, ensure housing security or alleviate sudden problems arising from heavy debts. These other forms of SA, which are typically temporary and hence characterized by short benefit durations, are not explicitly considered in the present study. Unfortunately, they cannot be identified in the underlying micro-data since receipt of both regular SA and other schemes are recorded in the same variable. As noted by Riphahn (2001), this is not a problem for the estimation of non take-up behavior among eligible families. On the one hand, families receiving special SA but who are not eligible for regular SA do not enter our group of interest. On the other hand, families receiving special SA who are also eligible for regular SA are most likely to claim it since they are already in touch with the benefit agency and actively seeking public support.

3.3 Legal Entitlement Rules

We now summarize the basic policy rules as they apply to claimants of regular SA. Eligibility and entitlement amounts are computed monthly as the difference between accepted needs and total family means, according to the simple formula:

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

The maximum entitlement is composed of a basic amount M to cover essential needs, a supplementary benefit corresponding to additional costs AC and a benefit HC_{sa} covering some of the housing costs. The income assessment accounts for net taxable incomes Y, housing benefits HB and family benefits FB.

On the income side, Y corresponds to the sum of individual incomes of all family members, net of taxes and mandatory social contributions. This includes earned income, any replacement income (pensions and unemployment benefits) and incomes from capital. Family benefits, FB, include universal child benefits and child maintenance benefit but exclude some minor benefits. Housing benefits HB depend on 'accepted' housing costs, which correspond to actual costs, HC, up to a maximum level $C(Z)$. This ceiling is a function of a set Z of household characteristics (age and size of the dwelling, municipality, number of inhabitants). Total HB is allocated to each family in proportion to its relative size within the household.

Similar to minimum-income schemes in most other countries, the basic amount M is a function of family size and composition, designed to cover necessities. It amounts to 375 or 359 euro – depending on the region – for a single individual (2003 figures), 1.7 times this amount for a couple, plus 70% of it for a first child between 10 and 17 years of age or 63% for a first child under 10; these last figures are reduced by 5 percentage points for the second child and by 10 for further children. Accepted additional costs, AC, consist of work-related expenses (e.g. childcare fees), healthcare expenses and possibly other expenses due to specific situations. They are conditional on case-by-case judgments of claimants' economic situations and, if applicable, can produce payment rates significantly above regular entitlements. The housing costs accepted for SA purposes, HC_{sa}, are also fixed by municipalities on the basis of local rent level. They corresponds to those accepted for the computation of housing benefits – with the exception of 7% covered by families themselves since 1997 – plus part of the difference between the ceiling C and the actual costs

HC when the latter are higher.

4 Measuring Non Take-Up

4.1 Data and Selection

We use the Finnish Income Distribution Survey (IDS), which contains information on incomes, direct taxes, benefits and socio-economic characteristics of individuals living in private households. The IDS is a rotating two-year panel, with half of the sample in a given year also retained in the following wave. We have used the eight waves from 1996 (25,328 individuals) to 2003 (29,070 individuals) as weighted representative samples of the population of each year. The sample size corresponds to around 0.5% of the population, with slight variations across years.

Most of the information (income, capital, socio-demographic characteristics) has been collected from administrative registers. With the exception of interests on deposits, all income items are recorded on an annual basis and based on the taxation registers (for all taxable incomes) and other specific registers (e.g. for non-taxable benefits). Some auxiliary information is gathered through interviews conducted by Statistics Finland on the same households. This is the case for types and duration of activity status (wage earner, unemployed, pensioner, student, military, other) over the year and for housing costs HC. The impact of potential measurement errors affecting these interview variables is discussed below.

Information on actual SA receipt – annual SA amount as well as number of months of receipt per family – is also based on registers and does not suffer from under-reporting. IDS provides a reasonably good match with official municipal statistics, as assessed by Törmälehto (2001). The only difference is the exclusion of the homeless and those living in institutions (hospitals, nursery homes, prisons or the military) in IDS.

We restrict our non take-up measures to the group of working or potentially working families. In particular, students, disabled and pensioners are excluded from the sample we analyze. Students are in principle not entitled to SA during school terms but a substantial number of them receive some support according to IDS data. They may work during the summer, may not declare student status during the year, or benefit from discretionary decisions from municipalities depending on their circumstances (e.g. when waiting for a student loan). Pensioners and disabled also present considerable scope for errors in eligibility assessment since they are more frequently subject to additional payments from municipalities (AC) to cover medical expenses, health care, etc. In any case, pensioners are rarely eligible for SA as the minimum pension is slightly above SA thresholds. More generally, Riihelä et al. (2001) show that pensioners are rarely concerned by income poverty.

4.2 Baseline Eligibility Simulation

Our analysis of non take-up patterns relies on comparing actual SA receipt with a measure of theoretical SA entitlement for each family according to the legal rules previously described. This section explains

the practicalities of implementing this simulation using the TUJA model and focuses on those parts of the calculations where the nature of the data requires adjustments, additional selection or particular simplifying assumptions.

The application of formula (1) first requires assessing family means. Like most microsimulation models, TUJA presents the possibility of calculating tax liabilities and entitlements for a wide range of social benefits. For computing net incomes Y, taxes and contributions are, however, taken directly from register data in order to minimize the scope for simulation errors. Benefits HB and FB are also taken from register data instead of being simulated. This is particularly relevant in our context, as housing benefits may also be affected by non take-up (see Jäntti, 2006). Modeling the simultaneous take-up of several benefits is outside the scope of the present study (see Hancock et al., 2004).

The accurate simulation of monthly SA entitlements requires establishing income levels for each month of the year. This is not straightforward, as calendar information (income information for each month) is lacking. The same issue arises for instance in Riphahn (2001) and many similar studies. To deal with this problem, we use information on the number of months in each possible status (months in part-time or full-time employment, unemployment, etc) together with data on annual income by source (earnings, unemployment benefit, etc.). This information allows us to reconstruct monthly income for each relevant period during the year assuming that income levels do not change during each labor market spell.[4]

Importantly, benefit agencies do not consider housing assets of owner-occupiers in the wealth test. More generally, it is unlikely in practice that claimants would have to realize property titles in order to become entitled to SA. Income from capital is, however, considered in the means test and essentially taken from tax registers (with the exception of interests from deposits).

The computation of the basic amount is a function of the family composition.[5] The main difficulty in assessing needs pertains to uncertainties about additional costs, AC, and accepted housing costs, HC_{sa}. Both are subject to discretionary decisions of municipalities. For housing costs, the ceiling C is fully determined by official rules and register information on household characteristics. Yet, actual costs, HC, are originating from the complementary interview-based survey and probably understated, as indicated by the fact that a minority of households declare no or small housing costs even though they receive housing benefits. Using available data, we are able to account only for some of the AC (childcare fees). These costs are necessarily underestimated, as indicated by the comparison of observed and simulated

[4] Monthly family incomes cannot be reconstructed reliably in the case of families where more than one adult changes status during the year. We have therefore dropped these families from the selected sample, which leads to a reduction of the sample size of less than 5%. Some duration information on the receipt of capital income, housing benefits and family benefits exists but is not readily usable. The most reasonable hypothesis is therefore to assume that these incomes are spread evenly over the year.

[5] Note however that demographic information used to compute SA corresponds to family characteristics at the end of each year. Demographic changes at the family level (birth, divorce, etc.) during the year could lead to incorrect assessments of family needs and SA entitlements. To investigate this potential problem, we have exploited the panel dimension of the data in order to identify families whose demographic make-up changes during the year. Such changes are rare enough not to affect results in any significant way (details available upon request).

SA aggregates for families who are both eligible and receiving the benefit. To improve this match, AC are set uniformly at 20% of the family-specific amount M in our baseline. In the Appendix, we present a sensitivity analysis to assess the elasticity of our measures with respect to alternative values of both AC and HC_{sa}. Results show that the non take-up rate is relatively stable even for substantial changes in these variables.

4.3 Results

Figure 2 describes the balance between eligible and recipient families in our selected sample during the economic recovery and the early 2000s. There is a gradual increase in non take-up from 40% in 1997 up to around 50% in 2003. Underlying this upwards trend is a relatively stable population of eligible families (except year 1998) combined with a declining numbers of recipients. We suggest possible explanations for this pattern in the final section. Notice that non take-up in terms of SA amounts follow a similar trend.

Non take-up turns out to be substantial in Finland, providing ample motivation for examining driving factors more closely. It appears to be of the order of previous results for Germany or France as surveyed in Table 1. It is lower than previous evidence for Nordic countries. In particular, an estimate of 44% for year 1996 differs significantly from the rate of 60% reported by Virjo (2000) using 1995 data, which confirms the aforementioned presumption that interview-based data lead to overestimations. Figure 2 also includes a broader measure of non take-up obtained by including recipients who are deemed eligible on the basis of actual receipt but not according to our simulation. Those cases may correspond to other forms of SA than the regular scheme or to assessment errors (beta-error), as further discussed below. They mechanically decrease the non take-up rate and therefore provide a lower bound, roughly 10 percentage points below the baseline measure.

Table 2 presents descriptive statistics for the pooled sample (years 1996 to 2003). A number of observations can be made. Eligible families, claiming or not, are more often singles and have fewer children than non-eligible families. Those failing to take up SA are more likely to have access to resources other than employment and replacement incomes: 15% are reported to own at least some capital (compared to only 5% in the take-up group), while the heads of almost one fourth of all non take-up families are self-employed (3% in the take-up group and 11% in the non-eligible group). Non take-up families also own their dwelling more frequently. In line with expectations, the majority of families claiming SA receive unemployment assistance. Correspondingly, the heads of these families also experience longer spells of unemployment. Again as expected, income levels are lower in the take-up group. Monthly average SA entitlements are only slightly higher in this group. By contrast, annual entitlement amounts are 2,520 euros for the claimants and 2,320 euros for non-claimants, reflecting longer (potential) SA spells among claiming families.

For 2003, Figure 3 reports non take-up by vintiles for the first half of the distribution of equivalized disposable income. The poor as identified by the line at 50% of the median are essentially in the first

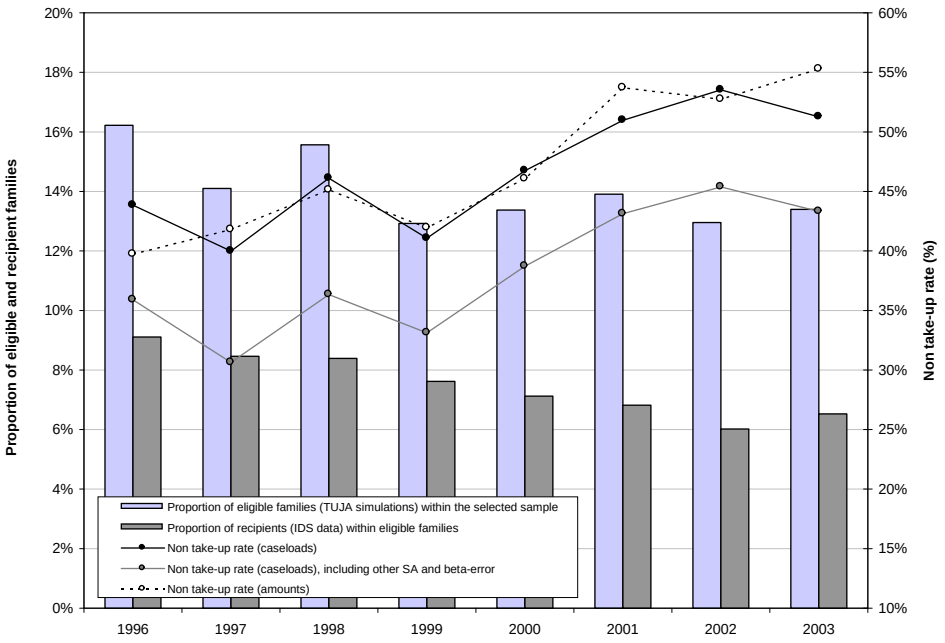


Figure 2: Trend in Non-take-up (selected sample)

Table 2: Descriptive Statistics (pooled data)

Variables	neither eligible nor recipient	eligible and recipient	eligible but non-take-up
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: IDS administrative data and simulations using the microsimulation model TUJA.

vintile while poverty at 60% of the median corresponds to the second vintile and part of the third. The comparison of eligibility and recipiency levels is striking. At the bottom of the distribution, SA is theoretically well targeted to the poorest but partly fails to reach them in practice, precisely because of non take-up. For higher income groups, a substantial proportion of the recipients are probably concerned by other types of SA than the main scheme, which corresponds to families with particularly needs at some point in time but not concerned by poverty in the long run. This overall picture is consistent with the findings of Aho and Virjo (2002) who show that receipt of SA is only weakly correlated with income poverty.

Another limit to the SA coverage is that 40% of the poorest (first vintile) are actually receiving SA but not enough to be taken over the poverty line. The poorest group of recipients is composed mostly of single individuals for whom SA amounts are indeed below the half median. The following vintiles are composed more frequently of families with larger housing costs or larger needs due to children, who thereby receive larger SA amounts and escape from poverty. Notice in particular that the implicit equivalence scale of SA is more generous to families with children than the modified OECD scale used to adjust incomes. Underlying lower non take-up rates in these vintiles, compared to the first one, are precisely due to the fact that claiming SA helps those families to escape poverty.

Beyond the fifth vintile, extremely high non take-up rates may be linked to higher stigma among families who are eligible but not poor. More likely, it may be explained by errors in our eligibility assessment. As a matter of fact, most of the recipients in these higher income groups are not found eligible according to our simulations. As stated above, those correspond to other forms of SA than the regular scheme. It may also be the case that we 'miss' eligibility for those families since we do not observe potentially high needs (e.g. high housing costs), or specific needs at some point in the year, typically not recorded in the data. Importantly, the error potentially committed is concentrated in higher income while it is very small in the poor population, i.e. our primary target. We nonetheless investigate the 'other SA and beta-error' group in detail in the Appendix to check the overall validity of our simulations.

5 Estimation and Decomposition

In this last section, we focus on the group deemed eligible according to our baseline simulation and estimate the non take-up binary decision. We then attempt to explain the notable increase in non take-up rates since 1997 by decomposing the observed trend between factor and coefficient effects.

5.1 Estimating Non Take-up

The claiming decision can be rationalized by a simple structural interpretation following Pudney et al. (2002) or Moffitt (1983).[6] The entitlement level $SA^* = B(Y, X)$ depends on a vector of incomes Y

[6] Note we do not explicitly address the simultaneity of labor supply and take-up decisions. This has been done in a limited number of studies surveyed by Brewer (2003), mostly concerned by the take-up of in-work benefits and focusing on improving the accuracy of labor supply models rather than on learning about non take-up and stigma costs. There is no

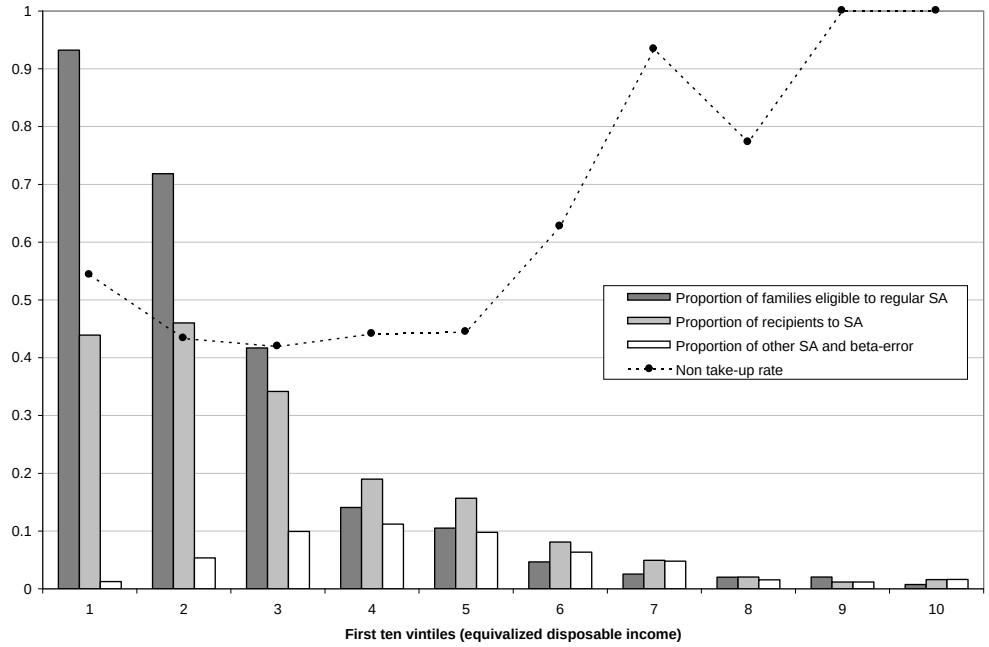


Figure 3: Non-take-up across Income Levels (selected sample, 2003)

and a vector X of family socio-demographic characteristics. The hypothesized disutility of claiming the benefit might be information costs (finding out about entitlement programs and understanding relevant rules), process or transaction costs (e.g. time required to fill in forms or attend interviews) or outcome costs (stigma). This disutility may be represented in cash equivalents as a positive cost $e^{Z\beta+\varepsilon}$ which depends on a vector Z of characteristics and a random term ε representing unobserved heterogeneity and optimization error. A family does not claim the benefit if the costs more than offset the gain, i.e. $SA^* < e^{Z\beta+\varepsilon}$, or equivalently if the 'non take-up propensity':

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

is positive. Assuming that ε follows a normal distribution of zero mean leads to the standard probit model.[7] The cost-benefit interpretation above justifies the presence of the entitlement level SA^*, even though it presents difficulties in terms of identification.[8] The marginal effect of $\ln SA^*$ is *a priori* unknown and not forced to equal unity in our estimations.

labor supply issue when focusing on the take-up of social transfers by pensioners (cf. Pudney, 2001, Pudney et al. 2002, Hancock et al., 2004, 2006).

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

[8] If 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 by parametric restriction or thanks to possible non-linearity or discontinuity in the function $B(Y, X)$. In the present case, SA is means-tested on the income Y net of tax and contribution, which is a nonlinear function of gross income (and individual characteristics). Some exclusion restrictions may also apply. Nonetheless, non-parametrically identification is unlikely to be obtained. See Pudney (2001) on this issue.

Our specification (vector Z) includes variables that might plausibly be associated with implicit claiming costs, or more generally, determinants of claiming behavior. To facilitate interpretation, Table 3 reports marginal effects on the probability of non take-up rather than coefficients. Results are obtained for each year individually and for the pooled waves, distinguishing between the full sample of eligible families and the sub-group of long-term unemployed (last column), defined as families with all adults working less than two months over the year. The baseline specification shows a satisfactory fit and the significance of most variables is robust to changes in the specification.

In the pooled data, all coefficients are significant with the exception of the number of children. In separate cross-sections, several coefficients are consistently significant, with the same sign and fairly close magnitudes in all or most of the years, suggesting stable determinants of non take-up over time, including being owner of one's dwelling, being self-employed and receiving unemployment assistance. Explaining the potential factors affecting claiming behavior requires much caution, however, since multiple and conflicting interpretations are possible (see the discussion in Remler et al., 2001).

A first type of explanation pertains to pecuniary determinants and expected duration in assistance. Higher amounts of SA entitlements significantly reduce the probability of non-take up in most years, as often found in the literature.[9] Expected permanent income typically exceeds current income for certain groups, which could explain in particular why self-employed workers have a higher probability of non take-up.[10] Families who own their dwelling have also a higher permanent income or higher earnings profile, which may explain their larger non take-up propensity. The income of other families living in the same household increases non take-up, indicating that intra-household transfers partly substitute for government benefits.

Duration in unemployment is difficult to proxy but may contribute to higher non take-up. The presence of young children – significant for the pooled sample and for two of the years – may indicate more limited employment opportunities due to childcare obligations and larger take-up, in particular for single parents. This is confirmed by an alternative specification with a term interacting single status and presence of young children. Results also confirm that those already in long-term unemployment have a substantially higher claiming propensity. First, the number of months spent out of work is significant, confirming that duration in welfare assistance plays a role. The receipt of unemployment assistance is also significant, indicating that families in touch with benefit agencies are more likely to make a claim for SA as well (see Saarela, 2004); this may be due to lower stigmatization or lower information costs.

Other variables are difficult to interpret. Lower education (primary schooling only) may proxy lower earnings potential and longer unemployment spells, thereby causing more reliance on income support. Alternative interpretations pertain to variations in social and psychological costs. More socially active

[9] The elasticity is very small however. Evaluated by simulation over the whole sample (pooled years), a 10% increase in SA translates into a decrease in the non take-up probability of around 0.5 percentage points, to be compared for instance to 2 points in Riphahn (2001). Depending on the year, the decrease varies between 0.3 and 0.8.

[10] Riihelä et al. (2001) indicate that in Finland, self-employment is one of the main contributors to poverty headcount when measured in income terms, but a small contributor for consumption-based measures.

persons, e.g. self-employed or better-educated, may suffer higher stigma costs while those seen as "needy" according to prevailing social norms may face smaller costs under this heading. The positive sign on 'lower education' does not invalidate these interpretations but does reject the possibility that low educated applicants face larger information costs. The number of children is also significant and may indicate larger needs and higher motivation for parents to resort to the welfare system. Age is a significant factor in the pooled sample and has a negative parabolic effect. The finding that take-up increases with age is rather counter-intuitive and also appears in Riphahn (2001). In the present study however, some of the youngest (students) and oldest (pensioners) groups, who typically take-up more, are not present in our selection. Estimates on the pooled sample show that men tend to take-up more.

Regional dummies may indicate variations in information and transaction costs between rural and urban regions.[11] Anonymity of big urban areas may also protect applicants from stigmatization. Yet, coefficients are significant only for two of the years. They are, however, significant in the pooled sample, which is consistent with differentiated take-up trends across regions. It may also reflect to some extent the variability in municipalities' generosity over years. Year dummies measuring year fixed-effects in relation to 1996 are highly significant, except for 1997, and confirm the time pattern previously discussed.

Finally, results for the group of long-term unemployed are qualitatively similar but mostly with larger elasticities of the stable determinants. Exceptions are the role of unemployment assistance and the entitlement level log(SA); the sub-sample is indeed more homogenous with respect to these variables.

5.2 Decomposing Recent Trends

This section takes a closer look at the increasing trend in non take-up rates as discussed earlier (Figure 2) and suggests three possible explanations. Firstly, we hypothesize that a change in the composition of the eligible group may explain the fall in claiming rates, and in particular the decreasing proportion of long-term unemployed over the period (Figure 1, see also Aho and Virjo, 2002). Indeed, this group has been consistently characterized by a higher propensity to claim.

Secondly, it is possible that claiming behavior has changed during the period under consideration. Any negative stigma effects associated with claiming welfare benefits may be felt more acutely during or after economic recovery than during recession periods. Indeed, sociological studies suggest that an important determinant of stigma is the perceived normality of the behavior concerned so that the number of people experiencing economic hardship is likely to be a relevant factor. There is some evidence for Sweden supporting this type of explanation.[12] A related interpretation is that, relative to job-search

[11] More generally, information pertaining to transaction cost is very limited. More would be needed to proxy the cost of making or renewing claim: time requirement, unpleasantness of the claims, work requirements (public work), number of interactions with agency (reporting), job-search activity by claimants, etc.

[12] Mood (2004) studies youth unemployed in Stockholm region during and after the 1990s recession and shows that the number of SA recipient has substantial effects on the propensity of take-up. Her 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 controlling for other take-up determinants, lending support to the hypothesis of a self-reinforcing process. Evidence presented by Gustafsson (2002) for the same period points in the same direction.

Table 3: Estimation of Non Take-up

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 dummies (ref: 1996)	1997									0.008	0.030
	1998									0.050 **	0.036
	1999									0.058 ***	0.041
	2000									0.095 ***	0.097 ***
	2001									0.088 ***	0.088 ***
	2002									0.101 ***	0.092 ***
	2003									0.066 ***	0.070 **
Significant regional controls (LR test at 10%)		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

*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%*

costs, the transaction cost involved in claiming benefits is likely to be higher when labor markets are strong and unemployment is low. Empirically, such changes in claiming attitudes should translate into significant differences between the coefficients of the non take-up models for different years.

A third type of explanation is not related to individual choices but hinges on (unobserved) changes in administrative practices, including stricter enforcement of eligibility requirements and "activation" measures (see Aust and Arriba, 2004). In fact, the 1998 Social Assistance Act has strengthened work incentives through benefit cut-backs and, importantly, introduced sanctions amounting to 20% to 40% of the full benefit amount in case of non-compliance with training and job-search obligations. Yet, benefit reductions do not change recipiency *per se*, at least not directly.[13] Another activation plan, the 2001 Act on Rehabilitative Work, aim to tackle long-term unemployment of young workers. Those aged under 25 are offered work or training after three months of unemployment that they may not refuse, at risk of losing unemployment assistance benefits. In fact, the estimated coefficients of our single-year models for 2001-2003 show that young individuals apparently take up less, which would be consistent with stricter activation measures applying to younger SA recipients. Notice that a greater emphasis of activation measures is consistent with the falling proportions of unemployment assistance recipients and therefore with the first type of explanation.

To shed some light on the relative merit of these different explanations, we utilize a variant of the Oaxaca-Blinder decomposition, adapted to the context of the binary model presented above (see Fairlie, 2005). Essentially, we decompose the difference in predicted non take-up rates between 1997 (the lowest rate) and 2002 (the highest) into a contribution of estimated coefficients and a contribution of characteristics. The difference amounts to 14 percentage points for the whole sample and 12 points for long-term unemployed.

According to Table 4, the change in sample characteristics explains most of the difference over time for the full selection of eligible families, which suggests the importance of the composition effect. More detailed results on the change in characteristics, available upon request, show that it is mainly due to a decrease in the number of unemployment assistance recipients and unemployment durations. Increasing numbers of eligible individuals with owned accommodation as well as self-employed also play a role. In contrast, the second explanation, emphasizing changes in take-up attitudes, receives little support. The small coefficient effect that can be observed concerns mainly the dummies for unemployment assistance and self-employment.

Since the change in the proportion of long-term unemployment is an important element to explain the characteristic effect in the full selection, it is not surprising to see its role diminished when looking at the sub-sample of long-term unemployed. Yet, the characteristic effect still dominates, confirming the role of the reduction in unemployment assistance spells. This suggests that the reduction in eligibility to the unemployment assistance due to activation policies may have also played a role. The increased

[13] More strictly enforced benefit sanctions may, however, act as a deterrent for some potential claimants and alter take-up behavior as discussed above.

proportion of self-employed and age levels also account for some of the characteristic effect, the latter indicating that the 2001 Act may have had some effect on the eligibility of younger unemployed.[14]

Table 4: Decomposition of the 1997-2002 Gap in the Non-take-up Probability

	Non-take-up rates			Decomposition	
	1997	2002	gap	Coefficients	Characteristics
Whole selection	40%	54%	14	9%	91%
Long term unemployed	32%	44%	12	28%	72%

Note: decomposition of predicted gap between coefficient and characteristic effects (Fairlie, 2005)

6 Concluding Remarks

Whether low-income families receive government support to which they are formally entitled has major implications for the effectiveness of social policy in general and the target efficiency of anti-poverty programs in particular. Little is known about the nature of benefit take-up in northern European countries, although there is often a presumption that safety nets in these countries would be less 'leaky' than elsewhere. In this paper, we have provided some evidence of substantial non take-up in Finland. Stable factors seem to act in favor of higher claiming costs (owning one's home, being self-employed) or inversely to encourage take-up (being in long-term employment and receiving unemployment assistance), consistently over the eight years under study and in line with results for other countries (see Hernanz et al., 2004). Non-take-up turns out to increase over the 1997-2002 period following the end of the severe 1990s recession. A simple decomposition analysis suggests that this pattern is mainly driven by a change in the composition of the eligible group and particularly a declining proportion of long-term unemployed.

What have we learned about the relationship between take-up behavior, poverty and the targeting efficiency of SA schemes? In theory, the Finnish regular SA scheme seems well targeted to the poorest population. More than 90% (resp. 70%) of those below the half median (resp. between 50% and 60% of the median) are indeed eligible, against 5% of the non-poor. In practice, only half of the poor actually receive SA precisely because of non take-up. Accordingly, increasing claiming rates may substantially reduce the incidence of income poverty, even in a country like Finland where poverty rates are relatively low.[15] In addition, SA only partly alleviates poverty since around 40% of the first vintile remains below

[14] An interesting focus on unemployment of young workers and previous activation reforms for that group is provided by Virjo (2004).

[15] Using a poverty line at half median, the poverty rate among working age families (6%) is slightly larger than for the whole population (4% according to Statistic Finland, 2001 or Riihelä, 2001) since it excludes pensioners who mostly tend to be non-poor in Finland. Nonetheless, it is interesting to compare results with Germany, a country characterized by a similar SA scheme, a fairly high non take-up and a larger poverty rate (9%). Using the German Socio-Economic Panel, microsimulation results from Mantovani and Sutherland (2003) and take-up estimates from Kayser and Frick (2000), we find that a larger poverty rate in Germany can be partly explained by a larger non-coverage of the poor population compared to Finland. For the rest, roughly half of the poverty headcount is attributed to non take-up in both countries.

the poverty line despite receipt of SA. This group is mainly composed of single individuals for whom SA amounts are below the half median. In contrast, families with higher needs tend to take-up more frequently and escape from poverty precisely thanks to the receipt of SA and the generous implicit equivalence scale of the regular scheme.

Our contribution shows that despite the use of register data, measuring non-take-up is a difficult task and data requirements are high. At best, one would expect detailed administrative information on household characteristics, incomes and benefits; monthly calendar information on income flows; representative sample; and, ideally, panel dimension. However, even rich and accurate household data often leave room for uncertainties when modeling benefit entitlements. In particular, little is known about administrative practices, which can differ between individual offices and are likely to be decisive in determining the outcomes of entitlement decisions. For the 1996-2003 period, the assessment of family needs was clearly underestimated and we have attempted to handle the issue in a simple sensitivity analysis. Further research is necessary and may exploit regional variation in SA payments to study potential differences in practices.

More generally, incentives of benefit agencies are an important area for further research, in relation with the role of decentralized budgets which can help to internalize the cost of the agency's entitlement decisions. In Sweden and Denmark, half of the social budget must be covered by local authorities while only 20% of social protection was financed by municipalities in Finland for the period considered in this study.[16] Yet, a noticeable transfer of responsibility from the central government towards municipalities has occurred in the recent years, accompanied by the necessary change in funding, i.e. a decrease in state income taxation and an increase in municipal taxes. Hiilamo et al. (2004) also documents policy changes aimed at unifying the standards across municipalities and encouraging local authorities to use preventative SA. Since 2003, this has led some municipalities, previously more generous, to cut back on their SA practices.

References

[1] Andren, T. (2003), "The Choice of Paid Childcare, Welfare and labor Supply of Single Mothers", *Labour Economics*, 10, 133-147.

[2] Aho, S. and I. Virjo (2002): "More Selectivity in Unemployment Compensation in Finland: Has it Led to Activation or Increased Poverty?", Basic Income European Network, 9th international congress.

[16] As stated by the Ministry of Social Affairs and Health (2006): "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."

[3] Aust, A. and A. Arriba (2004): "Policy reforms and discourses in social assistance in the 1990s. Towards 'activation'?", ESPAnet annual conference.

[4] Bargain, O. and K. Orsini (2006): "In-work policies in Europe: killing two birds with one stone?", *Labour Economics*, 13(6), 667-697

[5] Blank, R. (1997): "What cause public assistance caseloads to grow?", NBER Working Paper 6343,

[6] Blank, R. and P. Ruggles (1996): "When do Women Use Aid to Families with Dependent Children and Food Stamp? The Dynamics of Eligibility Versus Participation", *Journal of Human Resources*, 31(1), 57-89.

[7] Blundell, R.W., A. Duncan, J. McCrae and C. Meghir (2000): "The labor Market Impact of the Working Families' Tax Credit", *Fiscal Studies*, 21, 1, 75-103.

[8] Bramley, G., S. Lancaster, D. Gordon (2000): "Benefit take-up and the geography of poverty in Scotland", *Regional Studies*, 34(6), 507-519.

[9] Brewer, M. (2003): "Estimating models of benefit take-up", Institute for Fiscal Studies.

[10] Brewer, M., A. Duncan, A. Shephard, M.J. Suarez (2006): "Did the Working Families' Tax Credit work? The impact of in-work support on labor supply in Great Britain", *Labour Economics*, forthcoming.

[11] Currie, J. (2004): "The Take-up of social benefits", NBER working paper.

[12] Duclos, J-Y. (1995): "Modelling the Take-Up of State Support", *Journal of Public Economics*, 58, 391-415.

[13] Fairlie, R. W. (2005): "An Extension of the Blinder-Oaxaca Decomposition Technique to Logit and Probit Models", *Journal of Economic and Social Measurement*, 30(4): 305-316

[14] Fry, V. and G. Stark (1989): "The Take-Up of Supplementary Benefit: Gaps in the 'Safety Net'?", Dilnot A. and I. Walker, The Economics of Social Security, Oxford University Press.

[15] Gustafsson, B (2002): "Assessing non-use of social assistance", *European Journal for Social Work*, 5, 2, 149-158.

[16] Hancock R., S. Pudney and H. Sutherland (2006): "Simulating the Reform of Means-tested Benefits with Endogenous Take-up and Claim Costs", *Oxford Bulletin of Economics and Statistics*, 68, 2 135-166

[17] Hancock. R, S. Pudney, G. Barker, M. Hernandez and H. Sutherland (2004): "The Take-Up of Multiple Means-Tested Benefits by British Pensioners: Evidence from the Family Resources Surveys", *Fiscal Studies*, 25 (3), 279-303

[18] Hernanz, V., F. Malherbert and M.Perllizzari (2004): "Take-up of Welfare Benefits in OED Countries: A Review of the Evidence", OECD working paper, 17.

[19] Hiilamo H, Karjalainen J, Kautto M, Parpo A (2004): "Tavoitteena kannustavampi toimeentulotuki. Tutkimus toimeentulotuen lainmuutoksista", Tutkimuksia 139. Helsinki: Stakes.

[20] Hoynes, H. (1996): "Welfare Transfers in Two-Parent Families: Labor Supply and Welfare Participation Under AFDC-UP", *Econometrica*, 64, 295-332.

[21] Jäntti, M. (2006): "Measurement error in non take-up of social benefits: housing allowance and earnings in Finland", report for the AIMAP project.

[22] Kayser, H and J. R. Frick (2000): "Take it or leave it: (Non-)Take-up behavior of Social Assistance in Germany", *Schmoller's Jahrbuch - Journal of Applied Social Science Studies*, 121 (1): 27-58.

[23] Mantovani, D. and H. Sutherland (2003): "Social indicator and other income statistics using the Euromod baseline: a comparison with Eurostat and national statistics", Euromod working paper, EM1/03.

[24] McGarry, K. (1996): "Factors Determining Participation of the Elderly in Supplementary Security Income", *Journal of Human Resources*, 31(2), 331-358.

[25] Ministry of Social Affairs and Health (2006), *Trends in Social Protection*, Helsinki.

[26] Moffitt, R. (1983): "An economic model of welfare stigma", American Economic review, 73, 5, 1023-1035

[27] Mood, C.M. (2004): "Social Influence Effects on Social Assistance Recipiency", *Acta Sociologica*, 47: 235-251

[28] Pudney (2001): "The impact of measurement errors in probits model of benefit take-up", mimeo.

[29] Pudney, S., Hernandez, M. and Hancock, R. (2002): "The Welfare Cost of Means-Testing: Pensioner Participation in Income Support", paper presented at the Royal Economic Society Conference, Warwick 2003.

[30] Remler, D.H., Rachlin, J.E. and Glied, S.A. (2001): "What Can The Take-Up of Other Programs Teach Us About How to Improve Take-Up of Health Insurance Programs?", NBER Working Paper 8185.

[31] Riihelä, M., R. Sullström, and M. Tuomala (2001): "On the recent trends in economic poverty in Finland", Tampere Economic Working Paper..

[32] Riphahn, R.T. (2001): "Rational Poverty or Poor Rationality? The Take-Up of Social Assistance Benefits", *Review of Income and Wealth*, 47(3), pp379.

[33] Saarela, J (2004): "How unemployment duration affects social assistance receipt: evidence from Finland", *International Journal of Social Welfare*, 13, 3, 223 - 243.

[34] Hiilamo, H, J. Karjalainen, M. Kautto, A. Parpo (2004): "Tavoitteena kannustavampi toimeentulotuki. Tutkimus toimeentulotuen lakimuutoksista", National Research and Development Centre for Welfare and Health (STAKES)

[35] Terracol, A. (2002): "Analysing the Take-Up of Means-Tested Benefits in France", mimeo, Université Paris I-Panthéon-Sorbonne.

[36] Törmälehto, V. (2001): "Robustness assessment report for income distribution data: Finland: Income distribution survey 1998", Statistics Finland

[37] van Oorschot, W. (1995), *Take It or Leave it: a Study of Non-Take-Up of Social Security Benefits*, Tilburg: Tilburg University Press.

[38] Virjo, I. (2000): "Toimeentulotuen alikäytön laajuus ja syyt" (The extent and motives of non-utilisation of social assistance), *Janus*, 8, 1, 28-44.

[39] Virjo, I. (2004): "Does basic income have negative incentive effects on the young?", Basic Income European Network's Congress in Barcelona, Spain, September 2004

Appendix: Sensitivity Analysis of Non Take-up Measures

An important aspect of any robustness test is how well eligibility simulations match up with SA receipt recorded in the data. In particular, the group of recipients who are not eligible according to our simulations may reveal other types of SA than the main scheme or simulation errors due to timing issues or incomplete information about needs (beta-error), as discussed extensively in the text. Most importantly, the average income in this group is three times larger than that of eligible families who take up SA, and most of the group is concentrated in vintiles 3 to 6. It is therefore not our main group of interest. Interestingly, it also differs qualitatively from claiming families as it is composed more frequently of couples with children, and hence characterized by potentially larger needs and higher risk of assessment error in this respect.

We can decompose explanations in three categories. This group may simply correspond to other forms of SA (non-regular, discretionary or preventative SA), which we unfortunately cannot identify. Discrepancies may also be due to families turning to the benefit agency for help with temporary situations of increased financial need, typically not recorded in the data. Both cases are characterized by very short spells of welfare assistance. This is confirmed by Figure 4, showing that 62% of recipients who are found ineligible receive SA for 3 months or less over the year. This is in sharp contrast with the much longer SA spells of families who are both eligible and receiving regular SA (labeled as "take-up" families). The third and remaining category may be due to imperfect entitlement simulations of regular SA due mainly incorrect assessment of family needs (housing costs and additional costs) as well as timing issues.

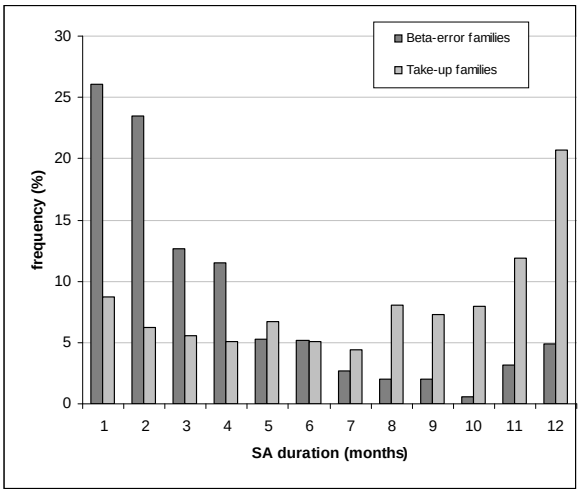


Figure 4: Distribution of benefit duration: Beta Error vs Take-up families

To investigate the first possibility, we assess the sensitivity of non take-up and the size of 'beta-error' to +5% and +15% variations in family-specific additional costs AC and accepted housing costs HC_{sa} respectively. These changes were chosen on the basis of the discussion in the main text, which indicates that family needs tend to be underestimated in the baseline simulations. For completeness, we also examine a reduction (−5%) of the two variables in order to test for symmetry around the baseline. To distinguish between the understatement of family needs and the lack of calendar information for incomes, we consider the sub-group of 'longer-term unemployed', defined here as families employed less than two months over the year. By construction, this group should be less affected by timing problems than the overall sample. Assessing error for long-term unemployed is also important *per se* since they correspond to the most vulnerable population within the group of eligible families.

Results reported in Table 5 indeed show that beta-error among longer-term unemployed is only 6% compared to 15% in the full selection, lending some support to the idea that timing errors are responsible for a substantial part of the error in the full sample. Most of the error for long-term unemployed (and part of it for the full sample) can be eliminated by the suggested increase in additional costs AC, confirming that family needs are somewhat understated in our baseline simulations. Negative variations show that the bias is probably in the upward direction. Results are more sensitive to changes in AC – which is indeed where more information is lacking – than to changes in HC_{sa}.[17] It is reassuring to see that non take-up does not vary much around baseline values for variations in both AC and HC_{sa}. As expected, longer-term unemployed families are characterized by a larger propensity to claim.

[17] These results are confirmed by a sensitivity analysis using random variations of additional and housing costs. Precisely, measures are averaged over 100 draws of normally distributed errors with zero-mean and standard deviation equal to 10% of the cost. Simulations suggest fairly narrow confidence interval of 4 (resp. 2) percentage points for the beta-error when additional (resp. housing) costs vary, and 2 points for non take-up rates in both cases.

Table 5: Sensitivity Analysis (year 2003)

		Selected sample		Long term unemployed*	
		non-take-up	beta-error	non-take-up	beta-error
Baseline		0.51	0.15	0.42	0.06
Additional Costs (uniform change)*					
	-5%	0.504	0.16	0.410	0.07
	+5%	0.522	0.13	0.421	0.04
	+15%	0.537	0.10	0.426	0.03
Housing Costs (uniform change)					
	-5%	0.509	0.15	0.422	0.06
	+5%	0.521	0.14	0.422	0.06
	+15%	0.525	0.13	0.421	0.05

** The change is applied to the total living allowance M+AC. ** Long term unemployed here defined as working less than 2 months per year (represent 57% of the eligible group)*