No Claim, No Pain - Measuring the Non-Take-up of Social Assistance using Register Data

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Abstract

The main objectives of social assistance benefits, including poverty alleviation and labor-market or social reintegration, can be seriously compromised if support is difficult to access. While recent studies point to high non-take-up rates, existing evidence does not make full use of the information recorded by benefit agencies. Most studies have to rely on interview-based data, with misreporting and measurement errors affecting the variables needed to establish both benefit receipt and benefit entitlement. In this paper, we exploit a unique combination of Finnish administrative data and eligibility simulations based on the tax-benefit calculator of the Finnish authorities, carefully investigating the measurement issues that remain. We find rates of non-take-up that are both substantial and robust: 40% to 50% of those eligible do not claim. Using repeated cross-section estimations for years 1996-2003, we identify a set of stable determinants of claiming behavior and suggest that changes in behavior could drive the observed downward trend in take-up rates during the post-recession period. We discuss the poverty implications of our results.

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

JEL Classification : D31, H31, H53, I38

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. Non-take-up may be due to informational problems, stigma effects or transaction costs (e.g., constraining administrative procedures). Understanding the extent and reasons for non-take-up is important for designing more effective benefit programs. Indeed, a growing literature effectively points to a substantial non-take-up of social transfers, especially in countries with generous income maintenance programs like Germany, France or Nordic countries (see surveys of Hernanz et al., 2004, Currie, 2004, and Matsaganis, 2007).

Yet, the available evidence is fragmented. Despite its policy relevance, the phenomenon of non-take-up is not studied systematically or on a regular basis. Moreover, most existing studies are unable to exploit the rich data on benefit claimants that benefit agencies record as part of the claiming process. Instead, they most often have to rely on interview data. The resulting take-up measures are potentially affected by measurement errors. Recorded benefit receipt may suffer from misreporting in survey data. The second main input into take-up studies, theoretical eligibility, is a function of income levels and household characteristics recorded in the same data source and is therefore also affected by measurement errors. Together, these issues reduce the reliability of the resulting take-up rates and of findings that link take-up behavior to observable characteristics.[1]

Several studies have used econometric techniques to control for measurement errors (see Duclos, 1995, McGarry, 1996, Pudney, 2001, Terracol, 2002, among others). Using administrative data is an alternative, and perhaps a more direct way of addressing some of these difficulties. Yet, this type of data is not easily available and generally also not well-suited for studying benefit take-up (while benefit registers contain, by definition, the most important data for calculating benefit entitlements, they often do not contain any information about those who do *not* claim benefits).

The main contribution of this paper is to derive accurate measures of non take-up based on comprehensive administrative data. We study the claiming patterns in the Finnish SA scheme (*Toimeentulotuki*), a relatively generous social assistance program that provides a financial safety net for those with no or very limited incomes from other sources. We focus on the years 1996-

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[1]For instance, a recent study by the UK Department of Work and Pensions that linked survey and administrative data shows that close to 30% of those who would be classified as eligible non-recipients based on the survey data are in fact receiving the benefit (HMRC, 2008).

2003, following the deep recession of the early 1990s. Information on actual benefit receipt is obtained using eight waves of an administrative data source, the Income Distribution Survey (IDS), while theoretical entitlements are simulated using TUJA, the tax-benefit calculator maintained and used by the Government Institute for Economic Research (VATT) and the Finnish government. The algorithms used in the tax-benefit model 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. We provide a careful sensitivity analysis in order to investigate remaining measurement issues, notably possible errors due to the fact that, as in other countries, benefit authorities have some room for discretion over entitlement levels.

Results can be summarized as follows. The resulting micro-economic evidence points to significant degrees of non-take-up of SA among the Finnish working-age population of about 40-50%. Hence, our results are broadly in line with several studies which report high non-take-up rates in countries with relatively generous SA schemes. We estimate the propensity of non-take-up on a detailed set of socio-demographic characteristics. Estimations are carried out both on pooled waves and on each year individually. This allows us to characterize stable determinants of claiming behavior over time, in particular expected unemployment duration, expected benefit amounts and variables associated to transaction/information costs or stigma. Finally, we use an Oaxaca-Blinder-type decomposition of the change in non-take-up over time. Results indicate that the observed decline in SA receipt (and take-up) in the second half of the 1990s could be driven by a change in take-up attitude during recovery years.

The paper is structured as follows. In Section 2, we review the existing literature on SA take-up. Section 3 discusses the economic and policy context in Finland and provides an overview of social assistance rules. Section 4 describes the data, provides baseline results and examines the robustness of the resulting take-up measures. In Section 5, we estimate the correlates of non-take-up behavior and present a decomposition analysis to explain the recent time trend. Section 6 concludes.

2 A Brief Look at the Literature

There is evidence of non-take-up for several countries and different types of benefits (SA, housing benefit, unemployment benefits), as surveyed for instance in Hernanz et al. (2004).[2] Table 1

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[2]According to Hernanz et al., 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.

reviews some studies on the non-take-up of poverty-alleviating transfers. Several observations stand out. Firstly, non-take-up rates across countries and SA schemes vary considerably – certain policy designs are more effective than others – but are always significant. Secondly, there are sizable differences across studies for the same program (e.g., AFDC in the US), which indicates that data and measurement issues present a fundamental difficulty in this area. Interview-based surveys tend to overstate non take-up, as discussed by Hernanz et al. (2004) and shown by Blank (1997) in the case of the AFDC. This limitation applies to most studies reported in Table 1 – with the exceptions of those which account for measurement error using the econometric approach suggested in particular by Duclos (1995) and McGarry (1996).

Interestingly, studies on countries known to maintain generous SA programs, like Germany and the Nordic countries, all point to high non-take-up rates. This is the case even though methods used are very different. For Germany, Riphahn (2001) and other studies cited in table 1 use an approach very similar to ours, based on a comparison between theoretical eligibility and actual receipt of SA. For Nordic countries, existing evidence relies on specific surveys on self-reported claiming behavior. Virjo (2000) uses a small mail survey of the 1995 Finnish population while Gustafsson (2002) uses phone interviews for Swedish individuals in the years 1985 and 1997. As shown in the table, both studies find very high rates of non-take-up.[3] The present study, based mostly on administrative data, confirms that non-take-up is high in Finland – even if not as high as reported by Virjo. Equally important, our econometric estimations point to similar determinants of non-take-up as what is qualitatively described in self-assessment surveys on Sweden and Finland. We come back to this in section 5.

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 – see Figure 1. The official headcount ratio of relative poverty has in fact decreased during this period, as the recession hit middle and high income as much as the poorest groups (Riihelä et al., 2001). As incomes declined, universal social security and welfare

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[3]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.

assistance have played their role as safety nets, with the proportion of households receiving SA more than doubling from 6% of the population in the early 1990s to 13% in 1996. By many measures, absolute poverty has however increased substantially over the period. A period of growth has followed in the second half of the 1990s, contributing to an important reduction in unemployment. However, pre-recession levels have not been restored. The proportion of long-term unemployment, officially defined as being out of work for 12 months or more, has declined and stabilized below 25% of total unemployment in 2001. The rise of relative poverty in this period is explained by a relatively faster recovery for higher income groups.

As in other countries, understanding the interactions and complementarities between SA and first tier unemployment benefits is important (Immervoll, 2010). Finnish jobseekers with sufficient contribution records are entitled to time-limited unemployment insurance benefits. The system consists of a basic mandatory scheme paying flat-rate benefits (around 23 euro/day in 2002), and, like in Denmark and Sweden, a voluntary scheme providing earnings-related top-ups (generally 42% of the difference between the daily wage and the basic allowance). Both are non-means tested. One important measure taken by the Finnish government in response to soaring unemployment rates during the early 1990s was the introduction of unemployment assistance in 1994. This program, known as Labour Market Support, 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 time-limited. 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. 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 shows a high propensity to claim SA.

3.2   Features and Entitlement Rules of the SA Scheme

SA rules described hereafter are decided at the national level but SA is administered locally by municipalities. 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.[4] Subject to relevant income

[4]Children over 17, grand parents, other relatives or cohabitants are considered families of their own (possibly with their own partners and children). We account for the possibility that one physical household consist of more

criteria, all private adult persons can apply for SA benefits; military and students (during term time) are in principle not entitled to it.

Local authorities may also exercise some discretion depending on claimants' circumstances. This may affect the evaluation of needs for regular SA, as extensively discussed below, and also concern the fact that municipalities sometimes grant non-regular benefits.[5]

Eligibility and entitlement amounts are computed monthly as the difference between recognized economic needs and total family means, according to the simple formula:

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

The maximum entitlement is composed of a basic amount B to cover essential needs, a supplementary benefit corresponding to additional costs AC and a benefit HC_{sa} covering a certain part of the family's 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 and any replacement income (pension and unemployment benefit). Family benefits, FB, include universal child benefits and child maintenance benefit but exclude some minor family-related transfers. 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). In multi-family households, total HB is generally allocated to each family in proportion to its relative size within the household.

The basic amount B designed to cover necessities is a function of family size and composition. It amounts to 375 or 359 euro – depending on the region – for a single individual (2003 figures), 70% more for a couple, plus another 70% for a first child between 10 and 17 years of age or 63% for a first child under 10; these latter percentages are reduced by 5 points for the second child and by 10 for each further children. Recognized additional costs, AC, consist of work-related expenses (e.g. childcare fees), healthcare expenses and possibly other expenses due to specific circumstances. They are conditional on case-by-case judgments of claimants' economic situations and, if applicable, can produce payment rates significantly above regular entitlements. Housing costs recognized for SA purposes, HC_{sa}, are determined by municipalities on the basis

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than one family and, correspondingly, receive more than one SA payment.

[5] These include one-off supplements as well as SA for special situations (sickness and other life events) and preventative SA benefits. These other, non-regular forms of SA, are typically temporary and hence characterized by short benefit durations. They are not (and typically cannot be) explicitly modeled by TUJA. We discuss their treatment in the next section.

of local rent levels. They are equal to housing costs used for computing housing benefits, minus a small part of 7% that recipient families are supposed to cover themselves since 1997, plus part of the difference between the actual costs HC and the ceiling C when $HC - C > 0$. The fact that benefit agencies can apply some discretion on AC and HC_{sa} levels, and hence on deciding whether claimants' circumstances make them eligible for SA support, is potentially important and carefully investigated in some detail below.

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 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 necessary information (income, capital, socio-demographic characteristics) is based on the taxation registers (for all taxable incomes) and other specific registers (e.g., for non-taxable benefits). Income information contained in register data is accurate in the sense that it shows the same information that benefit agencies use when determining benefit entitlements. These data are therefore well-suited for investigating benefit take-up. 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).[6] Some auxiliary information is gathered through interviews conducted by Statistics Finland on the same households. This is the case for housing costs HC and for the duration of individuals' activity status over the year (wage earner, unemployed, pensioner, student, military, other). In the context of our study, these latter variables are used in order to determine annual benefit entitlements for individuals whose income situation changes significantly during the year. The impact of potential measurement errors affecting these interview variables is discussed below.

We select 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

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[6]The only difference is the exclusion of the homeless and those living in institutions (hospitals, nursery homes, prisons or the military) from the IDS sampling frame.

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 some 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, Finnish pensioners are rarely eligible for regular SA which is the subject of this study (the minimum pension is typically slightly above SA thresholds) and rarely experience income poverty (Riihelä et al., 2001).

4.2 Baseline Simulation: Implementation

Our analysis of non-take-up patterns relies on comparing actual SA receipt with a measure of theoretical eligibility for each family as obtained using the TUJA model. We begin with a description of how the baseline simulation has been implemented.

Firstly, to find the value of SA in formula (1), we need to determine family *means*. All gross incomes are taken from registers. 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 are also affected by non-take-up (see Jäntti, 2006).[7] As in Riphahn (2001), monthly income information for each family member is constructed by combining the annual values recorded in the data with using information on the number of months spent in different labor-market situations (part-time work, full-time work, receipt of unemployment benefit, inactivity), assuming that income levels do not change *during* each labor market spell. Note that, using this approach, monthly family incomes cannot be reconstructed reliably when more than one adult changes status during the year, because there is no information in these cases on the overlap of different states between different family members. We have therefore dropped such families from the sample, which leads to a noticeable but relatively minor reduction of the sample size (by less than 5%).

Some of the determinants of the relevant concept of *needs* can be accounted for in a straight-forward way using information from IDS data. Others require some careful consideration. The

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[7]Modeling the simultaneous take-up of several benefits is outside the scope of the present study (but see Hancock et al., 2004 for an approach based on UK data).

basic amount B is simply a function of family composition. Our data provides demographic 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 issue, 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 can be obtained from the authors). The main difficulty in assessing needs pertains to uncertainties about accepted housing costs, HC_{sa}, and additional costs, AC. Both are influenced by some degree of discretion and judgment by benefit offices. For housing costs, the ceiling C is fully determined by official rules and register information on household characteristics. However, actual costs, HC, originate from the complementary interview-based data; comparison with housing benefits received indicates that HC are likely to be understated. IDS data covers some of the additional costs AC (notably for childcare) but probably not all those recognized by benefit agencies on the basis of individual circumstances – although we have excluded pensioners for whom additional costs are likely to be most important. In section 4.4, we analyze the sensitivity of our results to varying levels of these costs.

4.3 Baseline Simulation: Results

Previous calculations identify eligible families while the data informs about actual receipt. The samples obtained on this basis are described in Table 2, for the pooled 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 – these families belong to the poorest group (as in other Nordic countries, but contrary to the large majority of OECD countries, child poverty rates in Finland are lower than average poverty). A majority of families claiming SA already receive unemployment assistance. Correspondingly, the heads of these families also experience longer spells of unemployment. Those failing to take up SA are more likely to have access to resources other than employment and replacement incomes (almost one fourth are self-employed). Non-take-up families also own their dwelling more frequently. As expected, income levels are lower in the take-up group; their monthly average SA entitlements are only slightly higher, but expected benefit duration may be higher – see the regression analysis below.

Before calculating non-take-up rates, it is useful to introduce some notation and define two alternative measures of non-take-up. Denote E the number of families eligible for regular SA (as simulated by TUJA), T the number of families eligible for and receiving SA (the "takers"), and M the number of families receiving some SA but deemed non-eligible for regular SA (those

"missed" by our eligibility simulations). The total population of recipients is therefore $T + M$ while a direct measure of the eligible population not claiming regular SA is $E - T$. A first definition of the non-take-up rate (NTU) ignoring M goes as follows:

$$NTU1 = (E - T)/E.$$

We have mentioned above that other forms of SA benefits coexist with regular SA. Importantly, these cannot be identified in the micro-data because receipts of both regular and irregular SA are recorded in the same variable. Yet, those who are *only* eligible for non-regular benefits will be part of M, together with recipients of regular SA for whom we have "missed" the eligibility due to erroneous assessment of their needs, other simulation errors or, indeed, administrative error. These types of errors are referred to as Type II or beta errors in what follows. Thus, in an alternative definition, we reassess the number of eligible families (at the denominator) to account for non-regular SA or beta errors, that is:

$$NTU2 = (E - T)/(E + M).$$

In the numerator, the number of families entitled to, but not claiming, regular SA remains unchanged (M cancels out as non-regular SA and beta errors are added to both E and T).

Conceptually, these two measures can be seen as lower and upper bounds of the extent of non-take-up. In our baseline scenario on the whole selected sample, they are found to be 51% and 43% respectively (first line of Table 3). Figure 2 describes the time trend by reporting the balance between eligible and recipient families in the selected sample over the 1996-2003 period. There is a gradual increase in non-take-up from 40% in 1997 up to around 50% in 2003 (from 35% to 43% according to the more conservative measure). Underlying this upwards trend is a relatively stable population of eligible families after 1998 combined with a declining numbers of recipients. We suggest possible explanations for this pattern in the next section.

4.4 Sensitivity Analysis

We assess the robustness of our results using alternative simulations of theoretical SA entitlements. One important aspect is how well eligibility simulations match up with SA receipt as recorded in the data. In particular, M, which includes beta errors affecting regular SA, but also recipients of non-regular SA, appears to be relatively large in our baseline (cf., Table 3) and requires further investigation. In view of the high quality of the data on SA receipt and income levels, such assessment errors will be due to incomplete information about needs ($AC + HC_{sa}$) or to errors affecting the interview-based status information used to construct monthly incomes.

To simplify the presentation, we report results of the robustness analysis for a single year only (2003; results for the other years are available and show a similar pattern).

We first investigate the sensitivity of non-take-up and the prevalence of the beta errors to +5% and +15% variations in family-specific additional costs AC and recognized housing costs HC_{sa} respectively. These changes were chosen on the basis of the discussion above, which indicated that these elements of family needs are likely 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.

Results are reported in Table 3. Most importantly, it is reassuring that the resulting non-take-up rates do not vary much. For the sample as a whole and over all scenarios, they remain in a $50 - 54\%$ range when measured using NTU1 (and $43 - 45\%$ according to NTU2). Beta errors partly disappear, suggesting that family needs are indeed somewhat understated in our baseline simulations. It is apparent that the extent of these errors is more sensitive to changes in AC – which indeed is probably the least reliable component of the entitlement simulations – than in HC_{sa}.[8] Results for single individuals, who make up some 80% of recipients, show a slightly lower level of non take-up, around 45% (38%) according to NTU1 (NTU2).[9] For this important group, the specific measurement problems related to multi-adult families disappear and the extent of beta errors is much lower as a result. Yet, the presence of single parents in the "singles" group makes that some understatement of family needs still persists and take-up measures for singles also vary when increasing AC and HC_{sa}.

The third and fourth columns of Table 3 present results on a sub-group of families where all adults remain in the same employment status during the entire 12-month observation period (this group represents a large majority of eligible families – around 75%). This group is not subject to potential errors affecting the construction of monthly information on incomes when status changes over year. We observe that, in this case, non-take-up rates decrease slightly,[10] while the proportion of beta errors drops to half of the baseline numbers. In the case of singles, the proportions of beta errors drop to very small levels, around 2-3%, depending on the assumptions concerning AC and HC_{sa}.

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[8] We have also performed sensitivity analysis when applying non-uniform variations to these costs. This was done by bootstrapping measures over a large number of zero-mean normally distributed errors on individual costs, with reasonable standard errors. Results, available from the authors, show that non-take-up rates are not very sensitive to heterogeneous changes in housing/additional costs.

[9] Lower levels of non-take-up for singles (compared to all families) may be due to genuine differences in claiming behavior and not necessarily to lower rate of simulation errors.

[10] By 4% for the whole sample (e.g., from 51% to 49% according to NTU1) and by 8% for singles.

This exercise illustrates that errors occur in the simulation of theoretical entitlements despite high-quality data on social assistance receipt and income levels. They are associated with the assessment of family needs (especially for larger families) and the timing of income. Importantly, however, non-take-up rates are relatively stable even for larger variations of our 'needs' measure. The robustness of this result provides ample motivation for examining possible driving factors more closely. Overall, non-take-up rates in Finland appear to fall into the range of previous results for Germany or France as surveyed in Table 1 but they are lower than those found in earlier studies on Nordic countries. For instance, we find an estimate of $35 - 44\%$ (baseline) for the year 1996, substantially below the 60% reported by Virjo (2000) using 1995 data. This pattern is consistent with the common presumption noted above that non-take-up rates tend to be too high when evaluated using interview data.

Before turning to estimations, we take a look at non-take-up rates for low income groups – the target group of such policy. Figure 3 distinguishes vintiles (1/20) of equivalised disposable income, zooming in on the first seven vintiles of the distribution in year 2003, that is on those who receive some SA. The poor, as identified by a poverty line at 50% of the median income, are essentially in the first vintile, while poverty at 60% of the median corresponds to the first two, and part of the third, vintile groups. The comparison of eligibility and actual receipt is striking. At the bottom of the distribution, SA is 'theoretically' well targeted to the poorest. Indeed, more than 90% (70%) of those with incomes below 50% (60%) of the median are eligible for regular SA, against 5% of the non-poor. But because of non-take-up, SA support partly fails to reach them in practice.[11] The poorest group of recipients is composed mostly of single individuals, whose SA entitlements are generally not sufficient to lift them above the poverty line. Income groups in higher vintiles (and above the poverty line) are mostly made up of families with particular temporary needs but less affected by poverty. In addition, SA entitlements are more generous for families with children so that recipient families are more likely to escape poverty (the equivalence scale implicit in the benefit schedule is more favorable to children than the "modified OECD" scale that we used to calculate the poverty line). Families above the poverty line are also more likely to receive one-off payments and other types of non-regular SA. Partly for this reason, and partly because eligibility assessments are generally more difficult for larger families, 'missed' eligibility is more frequent for this group. Importantly, and reassuringly for the validity of our exercise, the error potentially committed is concentrated among higher-income groups while it is very small in the poorest population.

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[11]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.

5 Model Estimation and Decomposing Time Trend

5.1 Modeling and Estimating Non-Take-up

We focus on the eligible group according to our baseline simulation and model non-take-up as a simple binary decision. This choice can be rationalized using a simple structural interpretation following Pudney et al. (2002) or Moffitt (1983). Denote $B(X)$ the theoretical entitlement level for a family with characteristics X (that is, the characteristics that determine eligibility) The hypothesized disutility of claiming the benefit might stems from information costs, transaction costs or stigma. This disutility may be represented in cash equivalents as a positive cost $e^{Z\beta+\varepsilon}$ which depends on a vector Z of household-specific characteristics and a random term ε for unobserved heterogeneity and households' optimization error. A family does not claim the benefit if the costs more than offset the gain, i.e. $B(X) < e^{Z\beta+\varepsilon}$, or equivalently if the 'non-take-up propensity':

$$N^* = Z\beta - \log B(X) + \varepsilon$$

is positive. Assuming that ε follows a normal distribution of zero mean leads to the standard probit model. The cost-benefit interpretation above justifies the presence of the (log) entitlement level B, even though it is not non-parametrically identified.[12] The marginal effect of $\log B$ is *a priori* unknown and not forced to equal unity in our estimations.

To facilitate interpretation, Table 4 reports marginal effects of the covariates on the probability of non-take-up. The baseline specification shows a satisfactory fit. Note that some of the estimates in our specification may not be significantly different from zero when using single year data, due to the small sample size for each independent year. Thus table 4 also reports results for the pooled waves (last two columns). We distinguish between the complete selection of eligible families and the sub-group of long-term unemployed. The latter group, defined here as families with a total of less than two months spent in employment (around 58% of the total selection of eligible families), constitutes a particularly vulnerable population that deserves specific attention.

Our results are broadly in line with other studies, including Anderson and Meyer (1997), Riphahn (2001) but also with more qualitative studies like Virjo (1999) and Gustafsson (2002) for Finland and Sweden. We discuss our results along the lines of Riphahn (2001), who emphasizes

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[12]If vector Z overlaps with the set of individual/family characteristics X used in the benefit computation, then the entitlement level B is only identified by parametric restriction or thanks to possible non-linearity or discontinuity in the function $B(X)$. Some exclusion restrictions may also apply. See Pudney (2001) on this issue.

three main groups of determinants of take-up behavior: the amount and duration of the expected benefits, information and transaction costs of applying for social assistance and factors affecting individual stigma or its perception.

Our results confirm that higher amounts of SA entitlements significantly reduce the probability of non-take up in most years. The elasticity is very small, however. Evaluated by simulation over the whole sample (pooled years), a 10% increase in SA translates into a reduction of non-take-up probabilities of around 0.5 percentage points (compared to 2 points in Riphahn, 2001). A range of variables could act as plausible proxies for a second aspect of entitlement, expected benefit duration. This includes characteristics associated with a more permanent need for income support. Being a pensioners or disabled are two obvious candidates but we have excluded these groups from our analysis. Single parents with young children may also depend on SA for longer periods and being a single parent is indeed associated with a lower probability of non-take-up in the pooled sample. Education variables for the family head can be expected to proxy her long-term earnings potential. Low education is found to be a fairly stable determinant of take-up behavior (with only few years exception) and is also associated with lower non-take-up probabilities.[13] Along the same line of reasoning, the permanent income of SA entitled self-employed or owners of their own dwelling is more likely to exceed current income than for the SA entitled group on average. Consistent with such a pattern, these two characteristics indeed turn out to be stable correlates of non-take-up, with significantly negative marginal effects for all years.[14]

A variable accounting for the *actual* duration unemployment (number of months during the year) shows that longer-term unemployed have a substantially higher claiming propensity; this result holds for most years and for the pooled data. The receipt of unemployment assistance is also a stable explanatory factor, significant for all years. It indicates that families who are already in touch with a benefit agency are more likely to make a claim for SA as well (see Saarela, 2004). For these claimants, the marginal stigma and transaction costs of applying for SA are likely to be low. The same reasoning applies to those using social housing, who show a significantly higher propensity to claim for half of the years and in the pooled sample.

The presence of children reflects greater needs and possibly a greater willingness of parents

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[13]Education may be linked to several alternative interpretations pertaining to variations in social and psychological costs.

[14]Riihelä et al. (2001) indicate that in Finland, self-employment is one of the main contributors to poverty headcounts when measured in income terms, but a small contributor for consumption-based measures. Note also that among the dichotomous indicators, home ownership (outright) has the largest marginal effect, increasing the non take-up probability by 31 points, which is qualitatively and quantitatively similar to Riphahn (2001).

to resort to the welfare system. The effect is not significant, however, probably because the effect of having children is already partly picked up by the single-parent dummy. Since students and pensioners are excluded from our sample, the variability in terms of age is restricted. As a result, age is significant only in the pooled regression and at the 10% level. The positive sign is nonetheless in line with prior studies (e.g., Gustafsson, 2002), which generally report that take-up declines with age, and suggest possible age differences in information and transaction costs, as well as cohort differences in terms of perceived stigma.

Year dummies measure time fixed-effects in relation to 1996. They confirm that the level of non-take-up has increased since 2000. Estimates for the time trend are however not significant for the long-term unemployed, suggesting that the claiming pattern of this group is more homogenous and more stable. For half of the years, urban families have a significantly higher likelihood of non-take-up; this is relatively counter-intuitive if one thinks that greater anonymity of urban areas may protect applicants from stigmatization, but alternative interpretations are possible. We have also tested the significance of regional indicators: coefficients are significant only for two of the years and insignificant in the pooled sample. However, an alternative specification with interaction of years and regions passes a LR test at the 8% significance level. This is consistent with differentiated take-up trends across municipalities – a point discussed in the concluding section.

5.2   Time Trend: A Decomposition Approach

In this final section, we attempt to explain the notable increase in non-take-up rates over the period of interest, as illustrated in Figure 2. The total change amounts to 13.5 points, from 40% to 53%, with NTU1. It is possible that claiming behavior has changed during the period under consideration. Negative stigma effects associated with claiming welfare benefits may be felt more acutely when unemployment declines during periods of economic recovery. This type of explanation is supported by direct survey evidence – for instance, Gustafsson (2002) shows that an important determinant of stigma is the perceived normality of the behavior, so that the number of people experiencing economic hardship is likely to be a relevant factor. The fact that the rate of welfare recipients follows the changes in unemployment rate is also confirmed by macro-levels analysis (Gustafsson, 1984). Alternatively, the increase in non-take-up could be simply due to a composition effect. In particular, we could hypothesize that a decrease in the proportion of long-term unemployed over the period, i.e., a group characterized by a higher

propensity to claim, drives the result.[15]

To shed some light on the relative merit of these 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 the relative contributions of coefficients and characteristics. We find that the change in coefficients explains almost all (96%) of the time change, possibly reflecting increasing stigma of relying on SA during economic upturns. The change in the composition of the eligible population, and in particular the decline in long-term unemployment within this population, is marginal. The reason is that while the proportion of long-term unemployed in the population as a whole saw a marked decline (as described in Figure 1), this does not carry over to the sub-population of people entitled to SA (the core poverty group). Hence, the decreasing number of SA recipients reported in Figure 2 is not a direct consequence of lower unemployment but more likely due to a change in take-up patterns during the economic recovery in Finland.

6   Concluding Remarks

Whether low-income families receive government support to which they are formally entitled has major implications for the target efficiency of anti-poverty programs. In this paper, we have provided some evidence of substantial non take-up in Finland using administrative data and detailed eligibility simulations. Stable factors seem to act in favor of lower claiming costs (owning one's home, being self-employed) or to encourage take-up (expecting long-term unemployment and/or high levels of social assistance payments), consistently over the eight years under study and in line with results for other countries. A simple decomposition analysis suggests that claiming behavior has changed in the late 1990s, leading to a decline in the number of recipients.

Large non-take-up rates seem to be found in many countries with generous redistributive programs, as documented in the text. It is difficult to conclude about a systematic non-optimality of the systems in force, however, and a more likely explanation is the acceptance of stigma/transaction costs by governments as a way to reducing program enrolment. The recent empirical literature has indeed focused on the role of administrative complexity and hassle

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[15]A third type of explanation is not related to individual choices but hinges on (unobserved) changes in administrative practices, including heavier administrative procedures, stricter enforcement of eligibility requirements and "activation" measures. In Finland, these aspects seem minor. The 1998 Social Assistance Act has introduced sanctions amounting to 20% to 40% of the full benefit amount in case of non-compliance with training and job-search obligations. We discuss administrative practices more generally in the concluding section.

as a screening device to exclude those with higher permanent income (like the self-employed) and to target those with the most urgent (and long-term) needs for assistance (cf., Moffitt, 2003, Currie, 2004). Our estimates show that the Finnish system tends to perform relatively well in this respect. On the theoretical side, Kleven and Kopczuk (2008) have recently modeled the complexity of social programs (and resulting non-take-up) as a policy instrument when governments balance the loss due to ineligible people who receive the benefit against the loss of incomplete take up (i.e., when truly eligible individuals do not apply or are rejected). More work is required to integrate these theoretical developments with empirical assessments of benefit recipiency patterns.

Yet our study confirms that measuring non-take-up is a difficult task, even when using high-quality register data. Data requirements are high but this is not the only issue. Even with detailed administrative information on household characteristics, incomes, benefits and their timing (calendar information), some important uncertainties remain when modeling entitlements. In particular, little is known about administrative practices, which can differ between individual benefit offices and are likely to be decisive in determining the outcomes of entitlement decisions. For the 1996-2003 period, our assessment of family needs appeared to be more conservative than the needs assessments carried out by the relevant authorities. We have attempted to handle the issue in a simple sensitivity analysis. Further research is necessary, for instance by exploiting regional variation in SA payments to study potential differences in relevant practices. A longitudinal perspective could throw light on benefit agencies' behavior and incentives. For instance, as in other Nordic countries, transfers of responsibilities from central to local government have taken place in Finland in recent years, possibly accompanied by more restrictive handling of SA claims.

This latter point raises broader issues related to the appropriate measurement and interpretation of benefit take-up rates. Most studies, including the present one, have highlighted households' claiming behavior as the main factor when explaining the gap between apparent eligibility and actual benefit receipt. This perspective is useful when eligibility can be easily determined based on observable characteristics, which used to be the case for many means-tested benefit programs. However, in recent years, several OECD countries have moved towards a "rights and responsibilities" approach, which emphasizes the activation of benefit recipients allied to the possibility of benefit sanctions for those not complying with job-search and other behavioral requirements. While sanctions are currently often partial (including in Finland: see Immervoll, 2010), it is likely that an increasing number of low-income individuals fail to receive benefits not because they do not claim them, but because they are denied benefits as a result

of behavior which researchers typically cannot easily observe.

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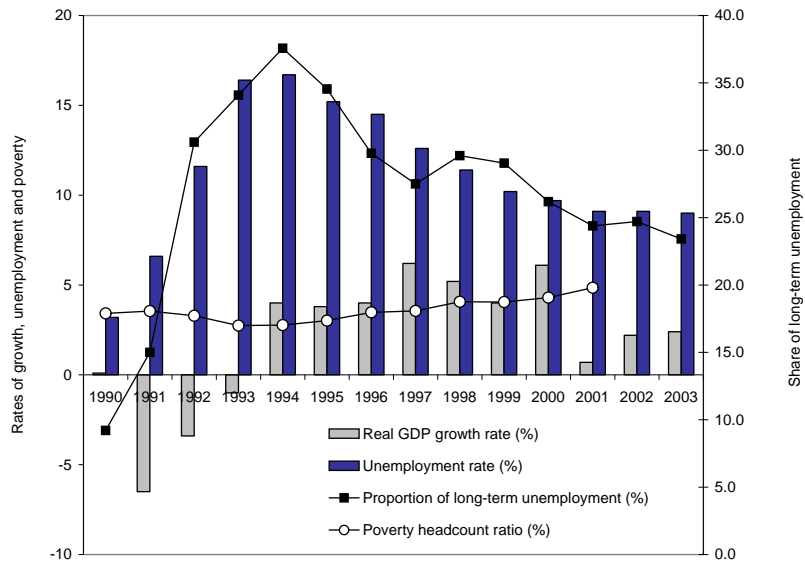
Figure 1: Growth, Unemployment and Poverty in Finland
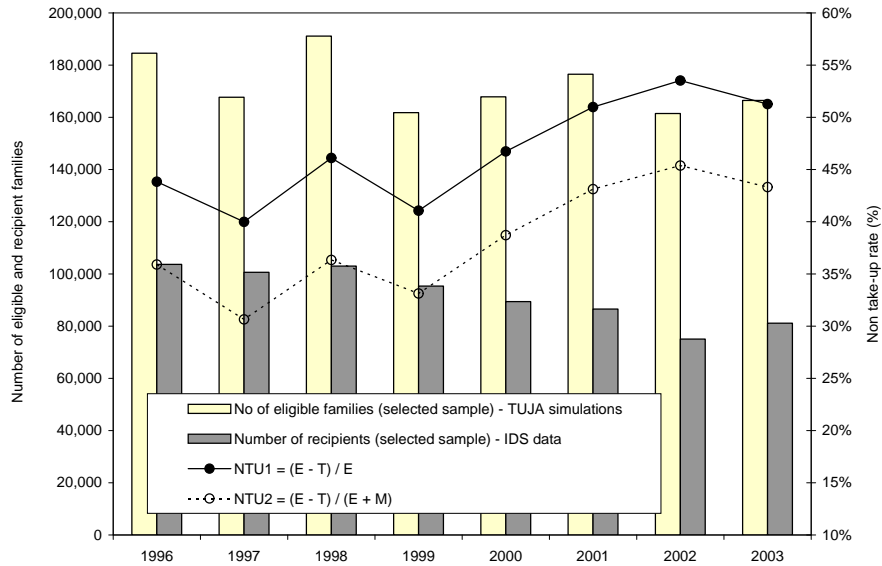
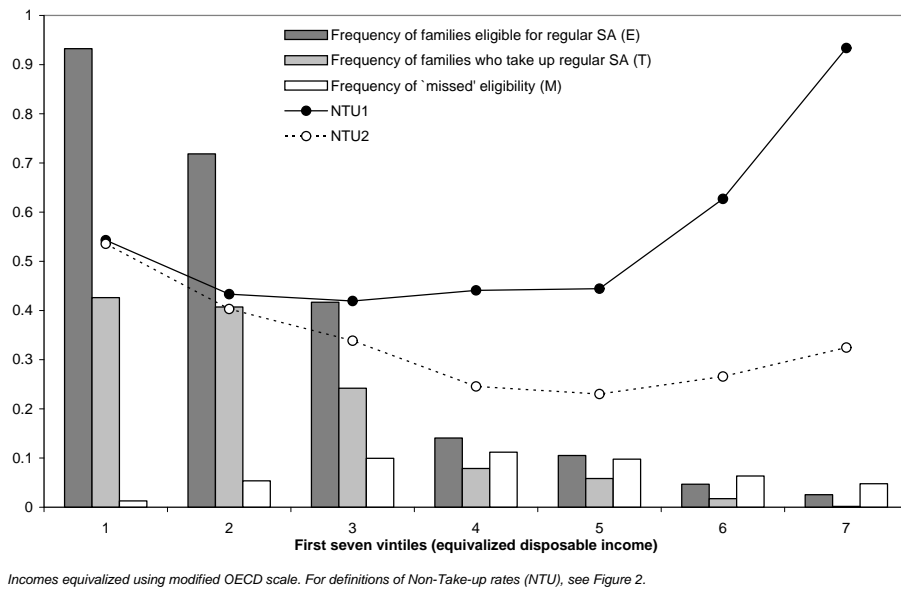Figure 2: Trend in Non-take-up (selected sample)

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

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

	Country	Data	Years	Program*	Selection	Non-take-up rate
Moffitt (1983)	US	PSID	1976	Aid to Families with Dependent Children	Single mothers	55%
Blank and Ruggles (1996)	US	SIPP	1986-87	Aid to Families with Dependent Children	Single mothers	30% - 38%
Blank (1997)	US	CPS and admin. data	mid 70s to mid 80s	Aid to Families with Dependent Children	Families with children	10% - 40%
Kim and Mergoupis (1997)	US	SIPP	1976-88-89	Aid to Families with Dependent Children	Working poor	46%
Fry and Stark (1989)	UK	FES	1984	Supplementary Benefit (SB)*	All	13% - 19%
Pudney et al. (2002)	UK	FRS	1997-2000	Income Support (IS)	Pensioners	34% - 35%
Bramley et al. (2000)	Scotland	SHCS	1996	Income Support (IS)	All	30-50%
Terracol	France	ECHP	1994-96	Minimum Income (*Revenu Minimum d'Insertion*)	All	35% - 48%
Neuman and Hertz (1998)	Germany		1991	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	52.3% - 58.7%
Kayser and Frick (2000)	Germany	GSOEP	1996	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	62.9%
Riphahn (2001)	Germany	EVS	1993	Social Assistance (*Hilfe zum Lebensunterhalt*)	All	62.3%
van Oorschot (1995)	Netherlands	@	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: PSID is the Panel Study of Income Dynamics, SIPP is the Survey of Income and Program Participation, CPS is the Current Population Survey, FES is the Family Expenditure Survey, FRS is the Family Resource Survey, SHCS is the Scottish House Condition Survey, ECHP is the European Community Household Panel, GSOEP is the German socio-economic Panel, EVS is the Income and Expenditure Survey for Germany.

* Supplementary Benefit (SB) is the ancestor of the Income Support (IS) in the UK.

@ Specific data on Rotterdam and Nijmegen

Table 2: Descriptive Statistics (pooled data)

Variables	neither eligible nor recipient	eligible and take up	eligible and non take-up
single	0.47	0.80	0.78
age of head	40	37	36
no. of children	0.67	0.55	0.55
own home	0.65	0.13	0.51
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. months unemployed during year	1	7	3
head holds primary education	0.22	0.39	0.29
head holds lower secondary education	0.41	0.44	0.47
average income before taxes & benefits (euro/year)	30,813	6,908	7,863
average SA amount (observed) (euro/month)		271	
average SA amount (simulated) (euro/month)		234	230
no. of obs. (pooled years)	59,123	2,131	4,901

Table 3: Non-Take-up rates: Baseline and Sensitivity Analysis

		Whole selected sample			Unchanged status over the year*		
		NTU 1	NTU 2	M	NTU 1	NTU 2	M
All family types:							
Baseline		0.51	0.43	0.15	0.49	0.42	0.08
Additional Costs (uniform change)							
	-5%	0.50	0.43	0.16	0.48	0.40	0.08
	+5%	0.52	0.44	0.12	0.50	0.42	0.07
	+15%	0.54	0.45	0.10	0.52	0.44	0.05
Housing Costs (uniform change)							
	-5%	0.51	0.43	0.15	0.49	0.41	0.08
	+5%	0.52	0.44	0.14	0.50	0.42	0.08
	+15%	0.53	0.44	0.12	0.51	0.43	0.07
Singles:							
Baseline		0.45	0.38	0.11	0.41	0.35	0.03
Additional Costs (uniform change)							
	-5%	0.44	0.37	0.12	0.40	0.34	0.03
	+5%	0.46	0.39	0.10	0.42	0.36	0.03
	+15%	0.46	0.39	0.07	0.43	0.36	0.02
Housing Costs (uniform change)							
	-5%	0.44	0.37	0.11	0.41	0.34	0.03
	+5%	0.46	0.39	0.10	0.42	0.36	0.03
	+15%	0.46	0.39	0.08	0.43	0.36	0.03

Sensitivity analysis for the year 2003. Non take up measures (NTU) based on number of eligible families (E), claiming families (T) and number of non-regular SA & beta-errors (M), with NTU1 = (E - T) / E and NTU 2 = (E - T) / (E + M)

* Families where adults are observed in the same labor market state (part-time work, full-time work, unemployed, inactive) during the year.

Table 4: Probit Estimations of Non-Take-up

Variables	marginal effects									
	1996	1997	1998	1999	2000	2001	2002	2003	Pooled years (whole sample)	Pooled years (long-term unemployed)
Charact. of the family head:										
No or primary education	-0.169 ***	-0.157 **	-0.272 ***	-0.107	-0.209 ***	-0.258 ***	-0.281 ***		-0.181 ***	-0.155 ***
Lower secondary education	-0.104 *	-0.126 *	-0.183 ***	-0.098	-0.104	-0.213 ***	-0.165 **	-0.079 *	-0.119 ***	-0.130 ***
Single parent with young children	-0.036	-0.124	-0.285 ***	-0.374 **	0.032	-0.044	-0.049	0.020	-0.085 **	-0.026
# Children	-0.002	0.000	-0.005	0.012	-0.017	-0.032 **	-0.004	0.001	-0.007	-0.013
Age	0.002	0.004 *	-0.001	0.003	0.004 *	0.000	0.003	0.000	0.002 *	0.003
Self-employed	0.296 ***	0.168 *	0.310 ***	0.384 ***	0.318 ***	0.287 ***	0.144 **	0.269 ***	0.283 ***	0.465 ***
Family characteristics:										
Urban	0.042	0.106 *	0.160 ***	0.145 **	0.024	-0.016	0.128 ***	0.000	0.064 ***	0.057 **
Social rent	-0.104 *	-0.120 *	-0.041	-0.016	-0.181 ***	-0.099 **	-0.080	-0.191 ***	-0.108 ***	-0.113 ***
Dwelling owner (outright)	0.233 ***	0.310 ***	0.374 ***	0.282 ***	0.283 ***	0.332 ***	0.401 ***	0.284 ***	0.311 ***	0.347 ***
Dwelling owner (mortgage)	0.213 ***	0.246 ***	0.242 ***	0.333 ***	0.137 *	0.232 ***	0.275 ***	0.310 ***	0.244 ***	0.272 ***
Family has debts	-0.086 *	-0.111	0.004	-0.011	-0.077	-0.012	0.204	-0.069	-0.046	-0.036
Unempl. Assistance recipient	-0.316 ***	-0.243 ***	-0.228 ***	-0.306 ***	-0.202 ***	-0.183 ***	-0.273 ***	-0.206 ***	-0.236 ***	-0.209 ***
No. of unemployed months	-0.027 ***	-0.029 ***	-0.019 ***	-0.009	-0.021 ***	-0.012 **	-0.013 **	-0.016 ***	-0.017 ***	-0.002
log of SA amount (euro/month)	-0.051 **	-0.011	-0.035 *	-0.078 ***	-0.041 **	-0.026	-0.044 **	-0.052 ***	-0.043 ***	-0.025 **
Year dummies 1997									-0.007	-0.007
(ref: 1996) 1998									0.069 **	0.050
1999									0.041	-0.008
2000									0.099 ***	0.062
2001									0.127 ***	0.147 ***
2002									0.110 ***	0.081
2003									0.057 *	0.039
Regional dummies significant at 10% level	no	no	yes	no	no	no	no	yes	no#	no
No. observations	562	547	551	485	529	529	552	651	4,454	2,580
Pseudo R2	0.28	0.32	0.32	0.37	0.38	0.37	0.38	0.31	0.33	0.42

The upper table reports marginal effects (i.e., changes in the probability of non-take-up following a marginal change in the explanatory variable) and the level of significance of the estimates: *=10%, **=5%, ***=1%.

 # Note that a specification where regions are interacted with time dummies passes a LR test at the 8% significance level.