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## No claim, no pain: Measuring the non-take-up of social assistance using register data

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## **No Claim, No Pain: Measuring the Non-Take-up of Social Assistance Using Register Data**

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# **No Claim, No Pain: Measuring the Non-Take-up of Social Assistance Using Register Data**

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## ABSTRACT

### **No Claim, No Pain: Measuring the Non-Take-up of Social Assistance Using Register Data<sup>\*</sup>**

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.

JEL Classification: D31, H31, H53, I38

Keywords: take-up, social assistance, poverty, register data

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# 1 Introduction

Most OECD countries operate social assistance (SA) schemes designed to secure a minimum level of resources for low-income families. However, the redistributive effectiveness of such policies can be compromised if intended recipients end up not claiming benefits because of informational problems, stigma effects or constraining administrative procedures. The recent literature actually points to a substantial non-take-up of income maintenance programs, especially in countries with generous schemes 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 biased by misreporting and measurement errors affecting either benefit receipt or household characteristics (like income) used to assess theoretical eligibility. Together, these issues reduce the reliability of the resulting take-up rates and of findings that link take-up behavior to observable characteristics. 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 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 program that provides a financial safety net for those with no or very limited incomes from other sources. We focus on the years 1996-2003, 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 and for each year, which 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 decompose the change in non-take-up rates over time and find that the observed decline in SA receipt (and take-up) in the second half of the 1990s is likely 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).<sup>1</sup> Table 1 reviews some studies specifically on the non-take-up of poverty-alleviating transfers. Several observations stand out. Firstly, non-take-up rates across countries and 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 (see Hernanz et al., 2004, and Blank, 1997). 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).

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<sup>1</sup>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.

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. Both studies find very high rates of non-take-up.<sup>2</sup>

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% – see Figure 1. As incomes declined, universal social security and welfare 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. 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.

As in other countries, understanding the interactions and complementarities between SA and first tier unemployment benefits is important. 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 and a voluntary scheme providing earnings-related top-ups. 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,

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<sup>2</sup>In Finland, the Ministry of Social Affairs and Health (2006) acknowledges the possible role of information costs and stigma, yet emphasizes the difficulties involved in producing reliable estimates using interview-based data.

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, around 23 euro/day in 2002, 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 benefits and SA is common, particularly among the long-term unemployed (see Saarela, 2004).

### 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.<sup>3</sup> Subject to relevant income 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.<sup>4</sup>

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

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

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 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, earned income or replacement incomes, net of taxes and mandatory social contributions. Family

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<sup>3</sup>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 than one family and, correspondingly, receive more than one SA payment.

<sup>4</sup>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.



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. Housing costs recognized for SA calculations,  $HC_{sa}$ , are determined by municipalities on the basis 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, Selection and Implementation

We use the Finnish Income Distribution Survey (IDS), a rotating two-year panel containing information on incomes, direct taxes, benefits and socio-economic characteristics of individuals living in private households. We use 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. Information on actual SA receipt (annual amount, number of months of receipt) is 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). Most of the necessary information to assess theoretical eligibility (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). This is the same information that benefit agencies use when determining

benefit entitlements and is therefore accurate and well-suited for investigating benefit take-up. Some auxiliary information is gathered through interviews conducted by Statistics Finland on the same households. Some of it, particularly actual housing costs  $HC$  and the duration of individuals' activity status over the year, is also used to determine eligibility and may introduce measurement errors as 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 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).

We now describe the practical aspects of measuring theoretical eligibility. To apply formula (1), we first need to determine family *means*. Net incomes  $Y$  are taken from registers (gross incomes, taxes, social contributions) as well as benefits  $HB$  and  $FB$ . We refrain from simulating these benefits using TUJA in order to minimize the scope for simulation errors and to avoid the problem of non-take-up of housing benefits (see Jäntti, 2006). As in Riphahn (2001), monthly income information for each family member is constructed by combining the annual values recorded in the data with information on the number of months spent in different labor-market status over the year (part-time or full-time salary work, receipt of unemployment benefit, inactivity).<sup>5</sup> Notice that this information is likely affected by measurement errors since it is drawn from interviews (and also because we assume that income levels do not change *during* each labor market spell). Then we assess total family *needs*. The basic amount  $B$  is a function of family composition and is accounted for in a straightforward way.<sup>6</sup> The main difficulty in assessing

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<sup>5</sup>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%).

<sup>6</sup>Note however that our data provides demographic characteristics at the end of each year while demographic changes (birth, divorce) during the year could lead to incorrect assessments of family needs. Hence we exploit the panel dimension to identify families whose demographic make-up changes during the year. We find that such

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 4.3, we analyze the sensitivity of our results to varying levels of these costs.

## 4.2 Baseline Results

Previous calculations identify eligible families while the data informs about actual SA 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. 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.

We 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 (“missed” eligibility). 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 changes are rare enough not to affect results in any significant way (details available from the authors).

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 and for the year 2003, they are found to be 51% and 43% respectively (first line of Table 3). Figure 2 describes the time trend of NTU1, NTU2 and the balance between eligible and recipient families in the selected sample over the 1996-2003 period. There is a gradual and significant increase in non-take-up from 44% to around 51% according to NTU1 (from 36% to 43% according to the more conservative measure NTU2). When considering years with extreme values, namely 1997 and 2002, NTU1 increases from 40% to 53.5% and NTU2 from 31% to 45%. 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.<sup>7</sup>

### 4.3 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,  $M$ , as a proportion of all recipients, appears to be relatively large in our baseline (cf., Table 3) and requires further investigation. This "missed" eligibility includes beta errors affecting regular SA and recipients of non-regular SA, which is not modeled. In view of the high quality of the data on SA receipt and income levels, beta errors are likely due to incomplete or erroneous information about needs ( $AC + HC_{sa}$ ) or duration of activity status over the year used to construct monthly incomes.

For the year 2003 (results for other years available from the authors), we first investigate the

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<sup>7</sup>We have checked that standard errors obtained when assuming asymptotic normality are not too different from those obtained by brute force bootstrapping (randomly drawing 200 samples with replacement from the original one and each time recalculate non-take-up). We find similar results (2.7 with bootstrap compared to 2.1 for asymptotic standard errors).

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, NTU1 remains in a 50 – 54% range (43 – 45% according to NTU2). Beta errors partly disappear, suggesting that family needs and in particular  $AC$ , are indeed somewhat understated in our baseline simulations.

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). For this group, the specific measurement problems related to multi-adult families disappear and the extent of beta errors is much lower as a result ( $M$  is also smaller because families with children are more likely to receive one-off payments and other types of non-regular SA due to temporary needs).<sup>8</sup> 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, by 2 points for the whole sample and by 4 points for singles, while the proportion of "missed" eligibility drops to half of the baseline numbers. In the case of singles, this proportion drops to very small levels, around 2 – 3%, depending on the assumptions concerning  $AC$  and  $HC_{sa}$ .

This exercise illustrates that errors occur in the simulation of theoretical entitlements despite high-quality data. Importantly, however, non-take-up rates are relatively stable even for larger variations of our ‘needs’ measure. These results confirm that non-take-up rates in Finland fall into the range of previous results for Germany or France, as surveyed in Table 1, but are lower than those found in earlier studies on Nordic countries.<sup>9</sup>

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<sup>8</sup>Note that lower levels of non-take-up for singles may also be due to genuine differences in claiming behavior and not necessarily to lower rate of simulation errors. Also note that 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  $HC_{sa}$ .

<sup>9</sup>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, i.e., the income groups where we observe SA recipients. Not all of these are poor. When identified by a poverty line at 50% of the median income, the poor are essentially in the first vintile (the headcount ratio is slightly less than 5%). 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% of those with incomes below 50% 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.<sup>10</sup> We find that the recipients in these lowest vintiles are composed mostly of single individuals, whose SA entitlements are generally not sufficient to lift them above the poverty line. Income groups in higher vintiles (above the poverty line) are mostly made up of families with children. Recipient families are more likely to escape poverty partly because of relatively more generous SA amounts (the implicit equivalence scale is more favorable to children than the “modified OECD” scale used to calculate poverty). As noted above, ‘missed’ eligibility is also 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.

## 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 function of family characteristics  $X$ . The money-metric disutility of claiming the benefit can be written as a positive cost  $e^{Z\beta+\varepsilon}$  which depends on a vector  $Z$  of household-specific characteristics and a random term  $\varepsilon$  (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 propensity not to take up:

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

is positive. Assuming that  $\varepsilon$  follows a normal distribution of zero mean leads to the standard probit model. The marginal effect of  $\log B$  is *a priori* unknown and not forced to equal unity

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<sup>10</sup>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.

in our estimations.<sup>11</sup>

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 findings 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 results along the lines of Riphahn (2001), who emphasizes 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. It is confirmed that higher amounts of SA entitlements significantly reduce the probability of non-take up in most years.<sup>12</sup> 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 non-take-up probability in the pooled sample. Education variables for the family head can be expected to proxy her long-term earnings potential (but alternative interpretations are possible). Low education is found to be a fairly stable determinant of take-up behavior (with only few years exception), associated with lower non-take-up probabilities. 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

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<sup>11</sup>In general the entitlement level  $B$  is only identified by parametric restriction (log) or possible non-linearity or discontinuity in the function  $B(X)$ . Exclusion restrictions may also apply if vector  $Z$  does not overlap with family characteristics  $X$  used in the benefit computation. See Pudney (2001).

<sup>12</sup>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). Also, Figure 4 (top) reports the SA amounts for claimants and non-claimants, confirming the very small differences found in average amounts (cf. Table 2). Other variables seem to have more influence. Overall, the distribution of the predicted propensity not to claim,  $\widehat{N}^*$ , shows marked differences between claimants and non-claimants, as can be seen in Figure 4 (bottom).

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.<sup>13</sup> 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.

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. 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.<sup>14</sup>

## 5.2 Time Trend: A Decomposition Approach

Finally 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

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<sup>13</sup>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).

<sup>14</sup>Other variables have more minor effects. The presence of children reflects greater needs and possibly a greater willingness of parents 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. 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.



consideration. Negative stigma effects associated with claiming welfare benefits may be felt more acutely when unemployment declines during periods of economic recovery (direct survey evidence shows that it is affected by the perceived normality of the behavior and the number of people experiencing economic hardship, cf. Gustafsson, 2002). 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 (see Figure 1), i.e., a group characterized by a higher propensity to claim, drives the result.

To shed some light on the relative merit of these explanations, 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 (see Fairlie, 2005). Results presented in Table 5 show that the change in coefficients explains almost all of the time change (96% in the baseline, and little variation with alternative specifications), possibly reflecting increasing stigma of relying on SA during economic upturns. The change in the composition of the eligible population is marginal. We conjecture that while the proportion of long-term unemployed in the population as a whole saw a marked decline, this did 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

We have provided some evidence of substantial non take-up of social assistance 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 post-recession years, leading to a decline in the number of recipients.

Our study confirms that measuring non-take-up is a difficult task, even when using high-quality register data. Were complete and robust data available on household characteristics, incomes, benefits and their timing, some important uncertainties would remain when modeling entitlements. In particular administrative practices are likely to be decisive in determining the outcomes of entitlement decisions. Further research is necessary, for instance by exploiting

regional variation in SA payments to study potential differences in relevant practices between benefit offices. A longitudinal perspective could also 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.

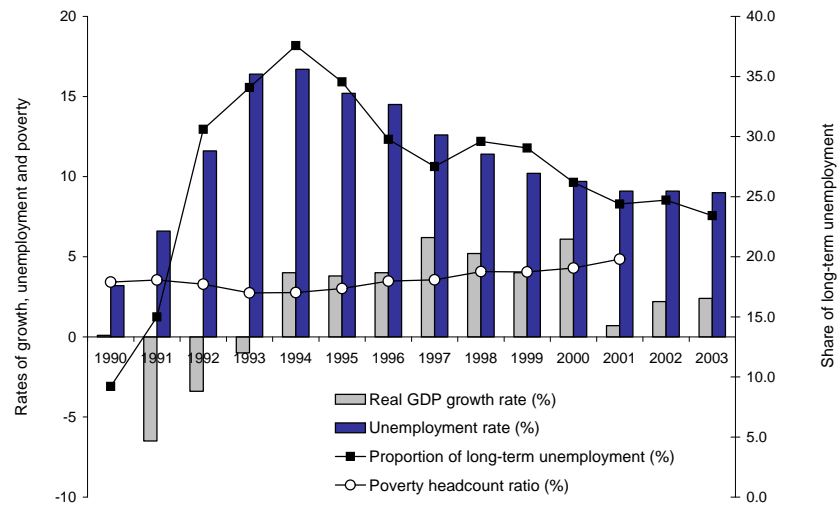
This raises broader issues related to the appropriate measurement and interpretation of non-take-up rates. Large rates, as found in the present study, have important implications for the target efficiency of anti-poverty programs but do not necessarily point to the non-optimality of the systems in force. A more likely explanation is the acceptance of stigma/transaction costs by governments as a way to reducing program enrolment (see Kleven and Kopczuk, 2008, for a modeling of social program complexity as a policy instrument). The recent empirical literature has precisely focused on the role of administrative hassle 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 (e.g., Currie, 2004). Our estimates show that the Finnish system tends to perform relatively well in this respect. Also, future studies will have to deal with the fact that households' claiming behavior is not the only factor affecting apparent non-take-up. Indeed many OECD countries have recently 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), 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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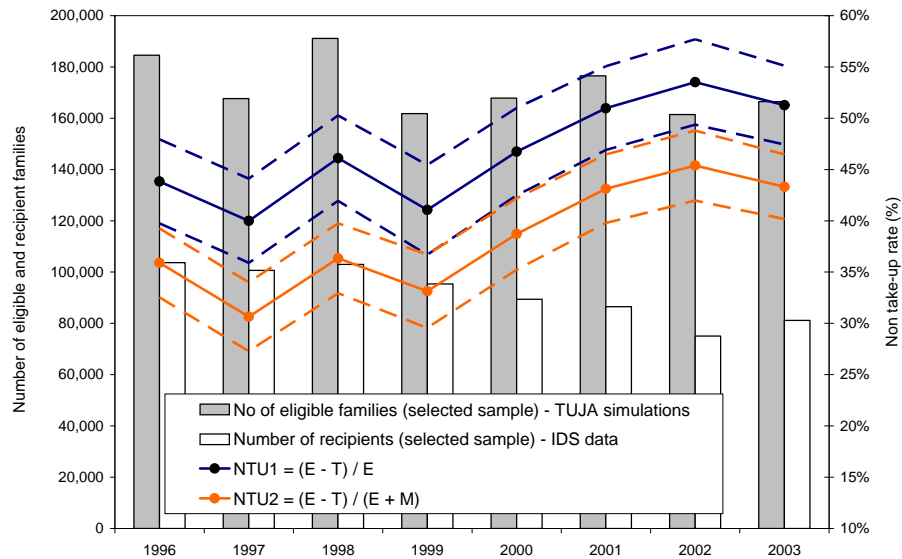
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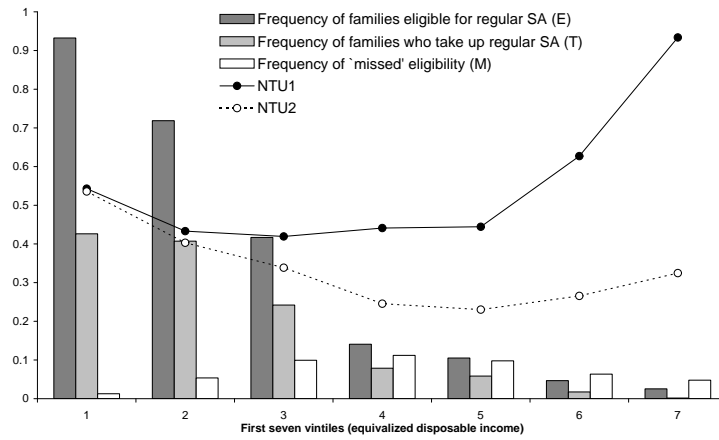
Sources: OECD; Income Distribution Survey; own calculations. Poverty line: 50% of the median of equivalised income (modified OECD scale). Remark: in the first half of the 90s, poverty headcount ratio decreases as the recession hits middle/high income as much as the poorest (Riihelä et al., 2001); absolute poverty however increases substantially over the period. Second half of the 90s: rise of relative poverty explained by a relatively faster recovery for higher income groups.

Figure 1: Growth, Unemployment and Poverty in Finland



Note: non take up measures (NTU) based on number of eligible families (E), claiming families (T) and number of missed eligibility (M, which correspond to non-regular SA and beta-error). Dashed lines represent std. err.

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



Note: incomes equivalized using modified OECD scale. For definitions of Non-Take-up rates (NTU), see Figure 2

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

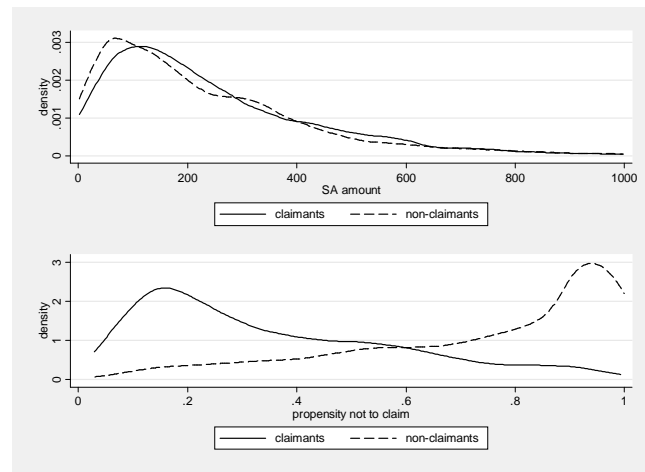


Figure 4: SA Amounts and Non-Take-Up Propensity

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	AFDC	Single mothers	55%
Blank and Ruggles (1996)	US	SIPP	1986-87	AFDC	Single mothers	30% - 38%
Blank (1997)	US	CPS and admin. data	mid 70s to mid 80s	AFDC	Families with children	10% - 40%
Kim and Mergoupis (1997)	US	SIPP	1976-88-89	AFDC	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 (2002)	France	ECHP	1994-96	Minimum Income ( <i>Revenu Minimum d'Insertion</i> )	All	35% - 48%
Neuman and Hertz (1998)	Germany		1991	Social Assistance ( <i>Hilfe zum Lebensunterhalt</i> )	All	52.3% - 58.7%
Kayser and Frick (2000)	Germany	GSOEP	1996	Social Assistance ( <i>Hilfe zum Lebensunterhalt</i> )	All	62.9%
Riphahn (2001)	Germany	EVS	1993	Social Assistance ( <i>Hilfe zum Lebensunterhalt</i> )	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 ( <i>Toimeentulotuki</i> )	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.

AFDC stands for Aid to Families with Dependent Children

\* 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
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
Household head:			
age	40	37	36
farmer or self-employed (%)	0.11	0.03	0.23
primary education (%)	0.22	0.39	0.29
lower secondary education (%)	0.41	0.44	0.47
upper sec. or tertiary education (%)	0.37	0.17	0.25
no. months unemployed during year	1	7	3
family receives unemployment benefit (%)	0.19	0.24	0.22
family receives unemployment assistance (%)	0.13	0.71	0.34
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

Sources: IDS administrative data and simulations using the microsimulation model TUJA.



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

		Whole selected sample			Unchanged status over the year*		
		NTU 1	NTU 2	M/(M+E)	NTU 1	NTU 2	M/(M+E)
<i>All family types:</i>							
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
<i>Singles:</i>							
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

Note: Sensitivity analysis for the year 2003. Non-take-up measures (NTU) based on the number of eligible families (E), of eligible families who receive SA (T) and of non-regular SA & beta-errors (M), with:

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

$$NTU 2 = (E - T) / (E + M)$$

and M/(M+E): number of "missed" eligibility over total number of recipients (i.e., recipients deemed eligible, T, or not, 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 (ref: 1996)											
	1997									-0.007	-0.007
	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.

Table 5: Decomposition of the Time Change in Non-Take-Up

Sample	Specification	Non-take-up rates			Decomposition	
		1997	2002	gap	Charact.	Coeff.
Whole selection	(1)	40.0%	53.5%	13.5	4%	96%
	(2)	-	-	-	-2%	102%
	(3)	-	-	-	7%	93%
	(4)	-	-	-	3%	97%
Long term unemployed	(1)	31.7%	44.5%	12.8	30%	70%

Note: Oaxaca-Blinder decomposition of the change in non take-up probability over time; we report the contribution of the change in characteristics (explained part) versus change in coefficients; see Fairlie (2005). Specifications: (1): baseline; (2): with detailed regional dummies; (3): omitting unempl. assistance recipient; (4): omitting log SA