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Earnings, income and poverty among welfare leavers in Sweden

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Earnings, income and poverty among welfare leavers in Sweden*

by

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Abstract

Given the trend towards more active policies on reducing the take-up of welfare benefits, the consequences of leaving welfare on individual well-being constitutes a significant issue. This paper studies the disposable income and poverty among welfare leavers in Sweden during 19 years (1990-2008). Using a rich set of register data we are able to accurately measure disposable income and other financial and labor market outcomes and thereby give a well-founded analysis of the financial well-being of these individuals. We find that there are large and significant differences in post welfare financial situation among those that work full time after leaving welfare and those who work only a little or not at all. Labor work is associated with a higher probability of experiencing a financial gain after leaving welfare as well as a lower risk of repeated dependency. This relationship is not sensitive to changes in the business cycle, and is stronger for those that leave welfare after having received relatively high amounts of benefits. Groups that typically have a weaker attachment to the labor market are more sensitive to variations in the business cycle. Leavers who neither work nor receive benefits from social insurance are likely to be financially dependent on family members, and they are also more likely than other leavers to be in poverty. We conclude that leaving welfare is not always associated with becoming financially better off, and post welfare well being depend heavily on labor market outcomes.

Keywords: welfare leavers, poverty, self-sufficiency, disconnected leavers
JEL-codes: I31, J01

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1 Introduction

The trend towards more active policies on reducing the take-up of welfare benefits has raised the issue of how individuals are faring, financially and with respect to health outcomes, after leaving welfare. Some researchers have expressed concern that those that end welfare participation without finding employment might suffer a reduction in disposable income and remain in poverty. Also, it has been shown that a high fraction of welfare leavers return to benefit receipt within a few years. Thus, it is not obvious that reducing welfare participation reduces poverty and increases well-being, neither in the short nor in the long run. In this paper we study the income of welfare leavers, and how this is influenced by the type of labor market outcome the individual moves to. We also look at the risk of returning to welfare, and how this risk varies with post welfare outcomes.

In most (Western) countries, financial support to poor individuals and families, often through cash benefits, has been the dominating strategy to fight (post-transfer) poverty. During the past two decades however, increasing costs and a shift in political preferences has led to more focus being put on encouraging employment and reducing dependency on social benefits, such as welfare benefits and food stamps in the US, and social assistance in Sweden[1]. To this end, various reforms have been implemented to strengthen the incentives for welfare participants to move from welfare to work, and to make this transition easier. The main goal of such policies is twofold and involves both reducing public expenditures and, perhaps most importantly, increasing the well-being of those taking part in the system. Throughout Europe and the United States different methods are used to condition the entitlements to social assistance. This can be done either by setting the benefit level at a low enough level so that it is always below the lowest wage in the economy, or through social control by requiring the recipient to work for benefits. As shown in Lødemel and Trickey (2001) states tend to combine these two schemes. The perceived need for social control seems to be stronger when the

[1] Throughout this paper welfare benefits and social assistance (American and Swedish terms, respectively) will be used interchangeably.

social assistance system is generous, than when benefits are low. Over all, there has been a trend towards extending the compulsory activation of welfare participants and a distancing from the view of poverty relief as a right for all citizens.

This trend has been particularly strong in the US, where a series of reforms transformed the welfare system during the 1990's. Evaluations of the situation of single mothers leaving welfare in the US after the reforms suggests that they are faring quite well, assuming that they receive the tax deductions and allowances they are entitled to while working (Blank and Haskins 2001). Danziger et. al. (2002) finds that moving from welfare to work after the US welfare reform is associated with increased income and reduced material hardships. However, welfare reform might have contributed to an increase in the number of families leaving welfare without starting to work, so called disconnected leavers. According to Blank and Kovacs (2008) these families are very poor, and tend to cycle between benefit receipt and "disconnectedness", without entering the labor market. Harris (1996) finds high rates of re-entry into welfare among single mothers in the US. She also shows that exits to work are not more likely to permanently end welfare dependency than are other exit routes, for example marriage or the aging of children. Moreover, she finds that for those who exit welfare to work, and remain off welfare, wage rates do not increase during the following three years and welfare leavers often remain poor. Danziger et al. (2000) shows that while the fraction of welfare participants fell by 22.6 percent in the US between 1995 and 1997, the number of female headed households whose pre-transfer income was below the poverty line dropped by only 5.4 percent. Thus, it is clear that reducing welfare participation is not equivalent to increaseing income and reducing poverty. Some studies have also found that the advantages of work over welfare are not uniformly distributed over the population, and that single parent households benefit less from moving from welfare to work than do other types of households (see Bauman (2002) and Scott et al. (2004)).

Looking at welfare leavers in Sweden is interesting in several aspects, not least because of the special features of the welfare state, and the unusually rich register data on incomes and transfers. Most previous studies have been done in Anglo-Saxon countries whose welfare system differs substantially from that in the Nordic countries. For example, Swedish minimum wages are high and the problem of working poor, often

discussed in the US setting, is not large in Sweden. We would thus expect that if welfare leavers are able to find employment, they would not remain (or become) poor. The problem, however, is that only very few welfare leavers are able to find full time work when ending benefit take-up.

In comparison to most countries outside of Scandinavia, the social insurance system in Sweden is generous, with high replacement rates (for long durations) and a high take up rate. However, this generosity does not extend to the part of the population without labor market experience who does not have enough previous labor income to qualify for benefits. Instead, this group must rely on means tested benefits from the local welfare office. This distinction gives rise to what has been referred to as the *welfare paradox*, where a high standard of living is guaranteed for some (the working) individuals while others are guaranteed only a minimum income. In this respect the social assistance system resembles the old poor relief, which might contribute to the high stigma that is associated with benefit take up. Moreover, while the social insurance system has been thoroughly evaluated, little is still known about the social assistance system and its participants.

Also, using Swedish data gives us access to a rich set of register information on the whole population over a long time period, 19 years. Thus, we do not have a problem with high non-response rates and difficulties with tracking individuals, a problem that often arises when relying on survey data. We are able to follow individuals over time and capture long run changes in financial variables as well as studying return to welfare participation and multiple exits from benefit take-up. Previous research on welfare dependency and poverty has often focused on single transitions, and re-entry has often been ignored. As pointed out by Stevens (1999) and Hansen and Wahlberg (2004) this may cause a significant underestimation of the number of years in poverty. Stevens (1999) show that within four years half of the individuals that leave poverty have returned. The estimated re-entry rate is lower for Sweden, Socialstyrelsen (2010) shows that half of the exiting population in 1991 had returned within eight years.

The Swedish data provides rich information on incomes and transfers. Our main interest is in the receipt of social assistance benefits and disposable income. Disposable income serves as a measure of post-fiscal income and consumption possibilities, and we

thus measure financial well-being rather than looking at health or consumption. In our data, household disposable income is calculated by Statistics Sweden using register data on the full set of household income. Individual disposable income is calculated using an equivalence scale set by the National Board of Health and Welfare. We can thus avoid the measurement errors that commonly arise when using self-reported information. Following sociological literature, we define an indicator variable of labor market attachment measuring how closely linked the individual is to the labor market and to what extent he or she can support him or herself through labor work. This variable indicates main source of support and labor market participation using the categories *strong* and *weak labor market attachment*, *recipient of sickness insurance benefits* or *unemployment insurance benefits*, *student* or *other/unknown*[2].We use these categories to study to what extent the outcome state determines the financial situation of leavers. We also have data on employment and labor earnings, to further asses labor market attachment. Financial well-being is often discussed in terms of poverty, and thus we also look at the poverty rate, defined as having an (equivalized) disposable income less than 60 % of the median.

We find that leaving welfare with a strong labor market attachment is the only alternative that yields an economically significant increase in income and provides some insurance against repeated dependency on welfare benefits. Other outcomes are associated with lower income and higher poverty rates. Also, returns to welfare are higher, in particular among disconnected leavers. The association between a strong attachment to the labor market and financial well-being is similar for individuals leaving welfare during different states of the business cycle, as well as for different groups within the population.

In the following chapters we will first review the institutional setting and the structure of the Swedish social assistance system. Thereafter we describe the data and variable definitions before discussing the methods used for estimation. We then present the results, starting with an overview of welfare leavers at different states of the business cycle. We then move on to analyzing where in the labor market welfare leavers

[2] These categories were originally defined in Bergmark and Bäckamn (2007) and have (slightly modified) been used in various reports from the National Board of Health and Welfare, see for example Socialstyrelsen (2006).

are more likely to end up, and how these initial labor market outcomes affect disposable income, poverty and repeated welfare dependency. We then look specifically at what we refer to as disconnected leavers, who leave welfare without any attachment to either the labor market or the social assistance system. Lastly, we discuss the results and conclude the paper.

2 Institutional setting

The Swedish welfare state entails an extensive system of social services, such as child care, elderly care and support for disabled individuals. A great part of public expenditure, however, is devoted to income replacement programs such as the unemployment and sick leave insurance. Social insurance is not means tested but relies on actual individual characteristics such as unemployment or established illness. To qualify for these benefits one has to have previous work experience and sufficient previous income (*sjukpenninggrundande inkomst*). Also, to be eligible for unemployment insurance one has to be a member of an unemployment benefit fund, and for sickness insurance it is necessary to have a medical note certifying that the individual is unable to work. Individuals that do not qualify for social insurance might be eligible for social assistance benefits, a financial support system initially intended to provide temporary financial support for households in need.

Unlike the income related social insurance benefit system, which is administered at the national level, social assistance in Sweden is a local responsibility, administered and financed at the lowest level of government, the municipalities. Thus, there is a large degree of municipal discretion although national legislation constitutes the main principles of the social assistance system and states a minimum benefit level. This law ensures all individuals permanently residing in Sweden a “reasonable” standard of living. Eligibility for social assistance is universal in the sense that all individuals may become eligible for benefits, unlike in the US where welfare benefits are only available for families with children, primarily single mothers. Nevertheless, benefit eligibility is subject to strict means testing, and an individual can only become eligible when all other means of support have been exempted and when all other parts of the social

security system has been exploited. Moreover, eligibility for social assistance is determined at the household level which means that if there are two adults in the household, they must both exploit all other alternative support before qualifying for benefits. Due to this, social assistance is commonly referred to as the last piece of the safety net in society. For example, a large fraction of the welfare participants in Sweden are unemployed individuals that do not meet the eligibility criteria for the unemployment insurance. This group has been growing over time and constitutes around 40 percent of the total welfare caseload in 2010 (SCB 2010). The increase started during the recession in the early 1990's when unemployment, especially among young individuals without labor market experience, increased dramatically and thus the number of unemployed in need of welfare benefits also rose. This caused a large increase in municipal expenditure on social assistance, and many local governments faced difficulties in financing the system.

In response to the heavier financial burden some municipalities started to require unemployed welfare participants to take part in mandatory activation programs in order to retain eligibility for benefits. In 1998 the Social Services Act was changed to explicitly allow for these kinds of work requirements, and since then the number of municipalities implementing mandatory work related activities has increased. There is now a large diversification of programs at the local level, and the degree of activation differs substantially between municipalities. On average, about 12 percent of all social assistance participants of working age took part in some activation program during 2002 (Salonen and Ulmestig 2004) but this number varies greatly across municipalities and has grown substantially over time. The development towards more active labor market policies for welfare participants as well as other unemployed individuals is in line with a trend that is common for most Western states, led by the US and the UK. In all these countries the political consensus on the benefits from so called “welfare-to-work” programs has grown during the past decades and these policies are now common throughout Europe and the US.

There is only limited knowledge about the structure and efficiency of the municipal activation programs. One exception is the municipality of Stockholm, where activation requirements for unemployed social assistance participants were implemented

sequentially between 1998 and 2004. These programs are relatively well-documented which have made it possible to study them in greater detail, see Dahlberg, Johansson, and Mörk (2008) and Persson and Vikman (2010).

Newly arrived immigrants are eligible to financial support on somewhat different terms than others living in Sweden. Municipalities can choose to provide "introduction benefits" (*introduktionsbidrag*) for immigrants during their first two years in Sweden. Recipients should be required to participate in introductory language courses or some other labor market introduction. The benefit level is usually equivalent to that of the social assistance benefit, but the means testing process is often simplified. Municipalities are not responsible for financing the introduction benefit system, expenditures should be fully replaced by the national government.

3 Data

3.1 Data registers and variable definitions

The data used in this analysis is gathered from the IFAU database and contains variables from the income and employment registers, administered by Statistics Sweden. The data covers all individuals of working age permanently living in Sweden. Data is collected at a yearly level and contains information on individual characteristics such as year of birth, marital status and number of children in the household. Also, there is register information about income sources, income levels, earnings and employment[3]. The advantage of using registers rather than survey data is that it minimizes the problem of measurement errors that often arise when individuals self-assess income and benefit levels. Disposable income and social assistance benefits are defined at the household level and are individualized using an algorithm determined by the National Board of Health and Welfare. This takes into account the number of adults and children in the household, assuming all household members share the same living standard, and hence these measures are equivalent for individuals and households. All income variables are in real terms, with 1997 being the base year.

[3] Employment is measured by a dummy variable that takes the value one if the individual was employed in November the given year.

Disposable income will be used to measure individual and household post-transfer income. One important aspect is that if social assistance (and income transfer programs in general) is successful in fighting poverty there will be a large difference in pre- and post transfer income. Moreover, if social assistance constitutes an important part of the disposable income, a reduction in benefit take up might reduce disposable income even though labor income increases.

Poverty is defined as having a disposable income below 60 % of the median disposable income. This is a conventional threshold when measuring relative poverty in the OECD, since low income is taken as an indication of being at risk of social exclusion and inability to participate in society.

In the data "families" are constructed by joining together individuals who are registered as living on the same address, starting with the oldest person. A family cannot consist of more than two generations. Unmarried adults living together will only be identified as a family if they have common children, if not they will be identified as two single individuals. These definitions are made by Statistics Sweden, and causes a limitation in the data since it is quite common for couples without children to live together without being married, and thus the number of true "families" is likely be underestimated. This might be problematic since we cannot observe all couples that have some obligation to financially support one another according to the Social Services Act.

We exclude immigrants during their first two years after arriving in Sweden, since they might be eligible for "introduction benefits" during the first 18 months (see section 2). We also exclude individuals that are younger than 18 years old, and older than 64, since we are primarily interested in those individuals that participate in the labor force.

3.2 Labor market attachment

Following various work by Bergmark and co-authors (for example Bergmark and Bäckman, 2007) status of support is defined according to main source of income, and income stability. A slightly different version of this model has been used in studies by the National Board of Health and Welfare, analyzing connections to the labor market and crowding out effects. The definitions given by the model generates seven different categories, presented in *Table 1*, that indicate how strong the individual's attachment to

the labor market is. The categories are constructed to be mutually exclusive within a given year. The basic amount or, more accurately, the price basic amount (*prisbasbelopp*), is calculated by Statistic Sweden based on changes in the general price level. In 1992 the basic amount was SEK 33,700 (around USD 4,800) and SEK 36,400 in 2005. Having a strong labor market attachment can imply full time work all year with low pay, or working some months with a higher pay. The threshold of 3.5 basic amounts of labor income is chosen to represent the amount of labor income that would admit financial self-sufficiency during a year. Being a social assistance recipient is defined as having more than one half of a basic amount of welfare benefits during a year. This definition differs from that made in earlier work, where it is defined as receiving welfare during at least six months during a year. Since we do not have access to monthly information, we cannot use this definition. The "other" category will include those that combine different types of income in a way that does not fit in any of the other categories. This group will also capture those that are on (roughly) full-time early retirement. We will study this in greater detail when we look at those leaving welfare to unknown outcomes. It is also important to note that unemployed and on sick leave are defined based on income, so that individuals that are unemployed or sick without receiving monetary compensation from unemployment and sick leave insurance, respectively, are not included in these categories. The definitions are constructed at the individual level, and will be used to determine individual, rather than household, labor market status.

3.3 The definition of welfare participation

A welfare spell is defined as a period of consecutive years that the individual receives benefits, that is, the length of a spell is the number of years of uninterrupted welfare participation.

The definition of welfare participation will be important in determining what population that is included in the analysis. As shown by Dahl and Lorentzen (2003) the study design, what sample is chosen and the definition of welfare spells will to a large extent determine what results we get and what inference we can draw from them.

Table 1 Labor market attachment

Category	Description
Strong labor market Attachment	Labor earnings of 3.5 basic amounts, less than ¼ of total earnings from sickness benefit, less than 1 basic amount of pension benefits and no unemployment benefit
Weak labor market attachment	Labor earning of at least ½ but less than 3.5 basic amount, otherwise as core labor force
Sick leave benefit and disability pension	Sickness benefit of at least ¼ of the labor income or disability pension benefit of at least one basic amount
Unemployed	Income from unemployment insurance
Student	Income from study grant/loan of at least 1 basic amount, less than ½ basic amount of labor income
SA recipient	More than ½ basic amount of social assistance
Other	Belonging to none of the above categories and having less than ½ basic amount of labor income

To show the heterogeneity with respect to type of spell, *Figure 1* shows the Kaplan-Meier survival estimates for spells of participation and non-participation in social assistance using different definitions. Definition 1 represents the case where an individual is defined as being on welfare if receiving some non-zero amount of benefits during a year and being off welfare if not receiving any benefits. This is a very broad definition and it will capture a very heterogeneous population. Definition 2 represents the threshold presented in *Table 1*. This definition defines a person as being on welfare if receiving more than one half of a basic amount of social assistance benefits, and off welfare if receiving less than that. According to definition 3 an individual is on welfare if social assistance makes up at least 50 percent of disposable income, and off welfare if it is less than 10 percent. In this setting, the definitions are set to be mutually exclusive, so that definition 1 is any welfare benefit larger than zero, less than one basic amount and 50 percent of disposable income, and similarly for the other definitions. Around 75 percent of welfare spells thus belong to definition 1, while the remaining spells are divided equally between the remaining categories.

As indicated by the figure the hazard of leaving a spell of welfare participation is higher for those that receive only small amounts of benefits, more than half of these

leave welfare within a year. After ten years around five percent are still on welfare, according to definition one while 10 and 15 percent remain according to definition two and three, respectively. Individuals with low amounts of benefits also experience a higher risk of returning to receiving benefits (the solid line), around 65 percent have returned within 10 years. For definition two and three, the return rate after ten years is around 40 percent, and they differ very little. Thus, spells with small amounts of benefits tend to be short, but repeated. Excluding those who receive very small amounts of benefits, by using definition two or three, makes a big difference for the estimated duration of benefit receipt, especially for the risk of returning to welfare. However, there is only a small difference between the last two definitions.

This paper will use the first two of these definitions. We use the first category since it includes all welfare participants and can be seen as representing the average welfare participants. The majority of the welfare participants in this group receive only small amounts of benefits, or only for one or two months during a year. When using this definition we modify the categories in *Table 1* to be mutually exclusive, so that each indicator takes the value zero for all years when the individuals receive any benefits. Clearly this group is very diverse and to obtain results for the smaller group that are somewhat dependent on welfare we also use definition two, where welfare participation is defined as having more than half a basic amount of benefits during the year. This is an arbitrary definition, but it has the advantage of including a relatively heterogeneous population while excluding those that receive very small amounts and who are unlikely to *depend* on social assistance for their support. Also, it will not include most of those who are eligible for other social insurance benefits, but have to rely on welfare while waiting for these benefits. We sample all individuals classified as welfare participants according to at least one of the definitions in at least one year between 1990 and 2008.

Throughout the analysis we have the potential complication that eligibility for social assistance is determined at the household level while we are observing individual outcomes. This is problematic since we might observe individuals leaving welfare without experiencing an increase in any income when the individual's partner starts to work or receive other income causing the whole household to lose benefit eligibility. If this is the case those that are supported by a spouse will be identified as being

disconnected, although this is not true at the household level. Still, looking at individual outcomes is relevant in the sense that it determines the individual's ability to be self sufficient. However, for individuals in the “other” category, we also study changes at the household level, and if there are two adults in the household we look at labor income of the spouse.

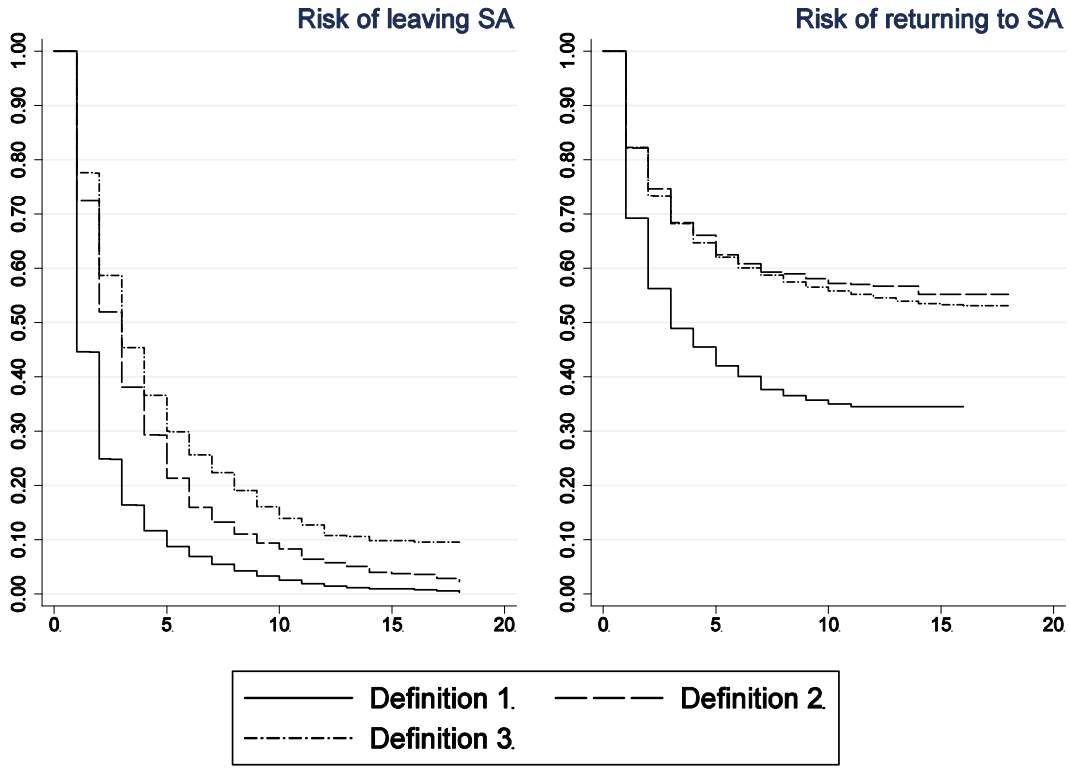

Figure 1 Duration on and off welfare by type of spell. Definition 1 includes all leavers, while definition 2 and 3 includes only those with previous benefits amounting to at least on half basic amount (def 2) and half of disposable income (def 3).

3.4 Descriptive statistics

To illustrate the implications of using a multiple spell framework, *Table 2* shows the number of years with social assistance, divided into single and multiple spells. Note that in both categories left and right censored spells are included. The length of a spell is defined as the number of consecutive years during which the individual receives any non-zero amount of social assistance. As the table indicates, of all single spells, 60 percent last only one year, 17 percent last for two years, etcetera. For those with multiple spells, one fifth experience two years with welfare, that is, two spells of one

year each. 16 percent experience three years on welfare, either in two or three different spells. This indicates that the majority of the spells on social assistance are short, especially among those that experience only one spell. It is also clear that individuals that experience many years with social assistance often do so in several spells, rather than during one uninterrupted spell. Thus, it is important to take the return to welfare into account when looking at welfare dynamics, rather than studying single spells.

Table 2 Number of years with SA, by number of spells 1990-2008

	Single spell	Multiple spells	Total
1	60.606	0.000	40.070
2	17.155	20.874	18.415
3	8.366	16.764	11.211
4	4.270	13.338	7.343
5	2.845	11.084	5.637
6	1.389	8.939	3.947
7	1.189	6.567	3.011
8	0.575	5.144	2.123
9	0.619	3.858	1.717
10	0.446	3.331	1.424
11	0.424	2.767	1.218
12	0.341	1.547	0.749
13	0.339	1.607	0.769
14	0.159	1.186	0.507
15	0.342	1.157	0.618
16	0.298	0.699	0.434
17	0.220	0.868	0.440
18	0.166	0.272	0.202
19	0.251	0.000	0.166
Total	100	100	100

Table 3 shows summary statistics for the sampled population averaged over the time period 1990 to 2008. The left column represents an eight percent random sample of the whole population[4] while the columns to the right represents the fraction that receive any benefits and at least one half basic amount of social assistance benefits at some point between 1990 and 2008. These are the populations the following analysis will focus on, as shown at the bottom of the left column these populations constitutes around 10 percent and 2 percent of the whole population, respectively. This gives us a panel of 19 years containing every individual that received social assistance during at least one year

[4] That is, the population of working age (18-64 years old), excluding newly arrived immigrants. The reason for using an eight percent sample in this case is the fact that using the whole population would give us an intractable amount of data. Since the sample is random it is representative of the population as a whole. This sample is used only to calculate descriptives for the whole population, when constructing the sample of welfare participants the entire population is used.

between 1990 and 2008. From this data we also extract the population that were at some point welfare participants according to the stricter definition presented in *Table 1* above, that is, that received more than one half basic amount during at least one year. "SA" indicates average amount of yearly social assistance in the whole sample while "SA among participants" indicates average amount during the years when receiving some non-zero amount. Being employed is represented by a dummy variable that takes the value one if the individual was employed in November of the given year and is thus a very imprecise measure, but might give some indication of labor market participation. "Immigrant" indicates being born outside of Sweden, "born outside the OECD" indicates being born in a country outside Europe, North America, Australia and New Zealand.

Clearly, welfare participants receive more benefits, both on average and during the year(s) they receive benefits. They also have lower income and are less likely to be employed. Immigrants, single parents and individuals with only compulsory schooling are more likely to be on welfare than other groups. Among those receiving relatively high benefits, there is an over-representation of single parents and individuals with low eduaction. They also tend to older than the average welfare participant.

Table 3 Summary statistics, 1990-2008

	All (8)	SA participants, all	SA participants, def 2
SA	1,054	4,233	12,672.39
SA among participants	17,501	17,501	27,725.22
Disp income	129,549	104,363	91,564.45
Employed	0.750	0.596	0.3899818
Age	40.724	37.758	38.36857
Age$<$26	0.161	0.197	0.0937165
Female	0.493	0.504	0.4163931
Immigrant	0.069	0.213	0.2039146
Born outside the OECD	0.023	0.110	0.1069378
Parent	0.384	0.422	0.3476355
Single parent	0.046	0.102	0.1518428
Compulsory schooling or less	0.234	0.297	0.3661374
Post secondary schooling	0.276	0.178	0.1083335
Share w SA, all	0.103	.	.
Share w SA, def 2	0.020	.	.
N	5,024,939	25,034,164	2,395,748

In column 1 a 5 % random sample of the total data set is used
SA participants are defined as receiving any benefits during at least one year (column 2) and as receiving more than one half basic amount of benefits during at least one year (column 3)

4 Estimation methods

The probability of leaving welfare will be modeled using a multivariate discrete choice model, where there are six different outcomes; strong and weak labor market attachment, sick leave, unemployment, studies, and other. The last category essentially captures all cases where we cannot determine the main source of income. The "other" category is used as the base category, and thus the resulting parameter estimates can be interpreted as a series of binary logit models with comparison being done to the base category. Thus, the probability of observing alternative *j* given that either alternative *j* or the base category is chosen is

$$\Pr(y_i = j \mid y_i = j \; or \; 1) = \frac{\Pr(y_i=j)}{\Pr(y_i=j)+\Pr(y_i=1)} = \frac{\exp(x_i\beta_j)}{1+\exp(x_i\beta_j)} \quad (1)$$

where y_{ij} indicates outcome *j* for individual *i*.

To study how the probability of experiencing an increase in income and being in poverty varies between the different post welfare outcomes, we estimate standard logit models. For all non-linear models we present the average marginal (partial) effects of the regressors, rather than their coefficients, that is

$$ME_j = \frac{\partial E[y|\boldsymbol{x}_i=\boldsymbol{x}_i^*]}{\partial x_j} \quad (2)$$

for continuous **x** and

$$ME_j = E[y_i|\boldsymbol{z}_i = \boldsymbol{z}_i^*, d_i = 1] - E[y_i|\boldsymbol{z}_i = \boldsymbol{z}_i^*, d_i = 0] \quad (3)$$

for discrete regressors, where **x**=(**z**, d) and **z** denotes all regressors but the binary regressor *d*. Odds ratios for all non-linear regressions are presented in the appendix.

The covariates in the **x**-vector includes dummy variables for being female, younger than 26 years old, having only compulsory schooling, having immigrated to Sweden from a non-OECD country, and being a single parent. To control for the (presumably

large) impact of the business cycle and unobserved differenced between municipalities, fixed effects for ending year of the spell and municipality of residence at the end of the spell are included. In the heterogeneity analysis, where we estimate changes for young individuals and immigrants separately, we exclude the variables indicating these groups from the vector of covariates.

5 Results

This section will first present a graphical analysis of how income changes after leaving welfare. To illustrate this we sample all leavers in 1991 and 1996, that is, everyone that received benefits in 1990 but not in 1991, and 1995 but not in 1996, respectively. These years are somewhat arbitrarily chosen, but will represent different states of the overall economy, where 1991 was at the beginning of a financial crisis and recession which started to come to an end in the middle of the 1990's. Thus, leavers in 1991 and 1996 will face very different labor market conditions. The exit rates from welfare only differs slightly between the two years, however - defining welfare participation as receiving any benefits during a year 41 percent of all welfare participants in 1990 had left welfare the following year, whereas the exit rate was 43 percent for the welfare caseload in 1995 (defining welfare participation as having more than one half basic amount of benefits during a year (definition 2) the exit rates were 34 percent and 36 percent, respectively). In this initial analysis we focus on three labor market outcomes, strong labor market attachment (which is what we are most interested in) and weak labor market attachment and the category referred to as “other”, the so called disconnected leavers, which are outcomes where most of the welfare leavers who have received higher benefit amounts end up.

After the illustration of post welfare income during different economic conditions, we move on to estimating the probabilities of different outcomes. Our main interest is the financial post welfare situation of welfare leavers, and how this relates to labor market outcomes. Thus, we begin by estimating the probability of various demographic groups to leave welfare to the various labor market states defined in *Table 1*. That is, we study where in the labor market welfare leavers are more likely to end up. Thereafter we

move on to study how the initial labor market outcome correlates with disposable income and poverty, both in the short and in the longer run. We also look at the probability of returning to welfare. This will tell us how former welfare participants are faring, and how their situation differs depending on labor market outcome.

As a heterogeneity analysis, we perform the analysis separately for a period of financial downturn (1992-1994) and a period when the economy was stronger (1998-2000). This analysis will illustrate if and how the labor market conditions affect the post welfare situation of welfare leavers. We also perform separate estimations for young individuals and individual who have immigrated to Sweden from a country outside the OECD. These groups are chosen because they are commonly thought of as being particularly disadvantaged, and they have unusually high rates of welfare participation. Also, it is often argued that these groups are more affected by business cycle fluctuations than are other groups in the population.

Before concluding the section we study the disconnected leavers, that is, those who leave welfare to the "other" category defined in *Table 1*, in more detail. Primarily, we try to determine the importance of income earned by other family members, since, given the structure of the data, we might suspect that some of those that become disconnected are in fact living with someone who are determined by the welfare office to have sufficient income to support the whole household.

5.1 Characterizing post welfare outcomes

Figure 2 shows the development of individual disposable income for welfare leavers in 1991 (to the left) and 1996 (to the right), separated by some demographic characteristics. We present both the more generous definition (welfare participation defined as receiving any benefit, top panel) and the definition presented in *Table 1* (receiving at least one half basic amount of welfare during a year). This figure shows a clear difference between the two definitions of welfare, the average leavers (definition 1) start out at a higher income level and this difference remains throughout the whole time period. Leavers who were previously receiving higher benefit levels do worse, in particular those that left during the weaker economy in the early 1990's. Throughout, immigrants and single parents have a lower income than the average, but overall, and in particular for those who have received high benefits, the differences between the

demographic groups are small. Naturally, the increase that is observed in these graphs needs to be related to the income development of those that remain on welfare. Plotting the same income paths of welfare participants in 1991 and 1996, respectively, that remain on welfare shows that these individuals experience only very small growth in disposable income, which reaches levels above SEK 90 000 for only a few individuals during the last years of the data (graph not shown, available on request).

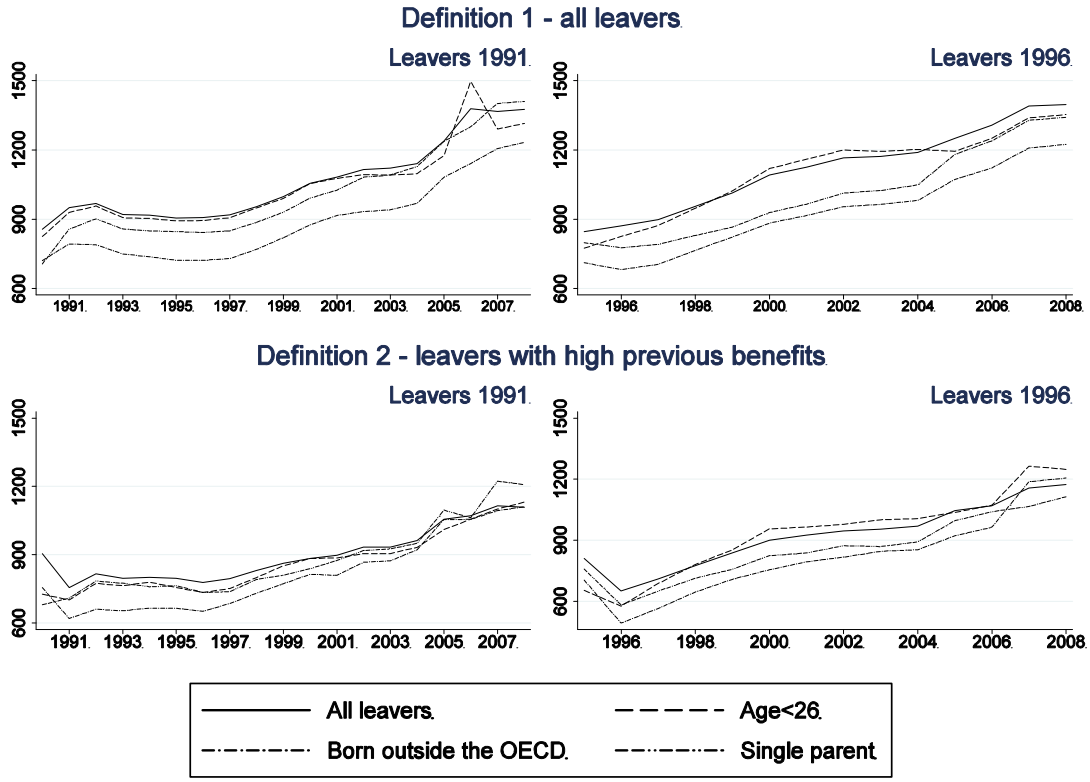

Figure 2 Leavers 1991 and 1996 - disposable income by demographic characteristics (SEK 100'). Definition 1 includes all leavers, while definition 2 includes only those with previous benefits amounting to at least one half basic amount.

Figure 3 shows the same income development as in *Figure 2*, but separated by some of the initial post welfare outcomes. Clearly, having a strong labor market attachment is associated with a higher disposable income than any other outcome. In the long run there is a substantial financial gain in all outcome states, but in the short run some leavers suffer financial losses. This is the case especially for welfare leavers with high previous benefits in the financial downturn in 1991, where all groups loose income at some point within the first few years. Since the groups are constructed using the initial

outcome, that is, labor market position in 1991 and 1996, respectively, the decrease in disposable income can be explained by that individuals move back to welfare or into some of the other categories.

Figure 4 illustrates the returns to welfare, where we plot the (cumulative) fraction of leavers that have returned to welfare after having left in 1991 and 1996. This shows that leaving with a strong labor market attachment is associated with a lower risk of return, among all leavers in 1991 the return rate for those leaving to a strong labor market attachment the return rate is around 40 percent, compared to above 50 percent for the other groups. The difference is even bigger for those leavers who have received higher benefits, the return rate is around 10 percent for those with a strong labor market attachment compared to an average of 30 percent. The differences between the groups are similar for leavers in 1996, but the overall return rate is lower. Especially, welfare participants who have received higher benefits and leave welfare to work in 1996, when the economy is strong, show a risk of repeated welfare dependency of less than 10 percent within the following 12 years.

Hence, the main message from these graphs is that having a strong labor market attachment is associated both with higher post welfare disposable income and with lower risk of returning to welfare. While the differences between the post welfare outcomes are substantial, there are only small deviations between demographic groups.

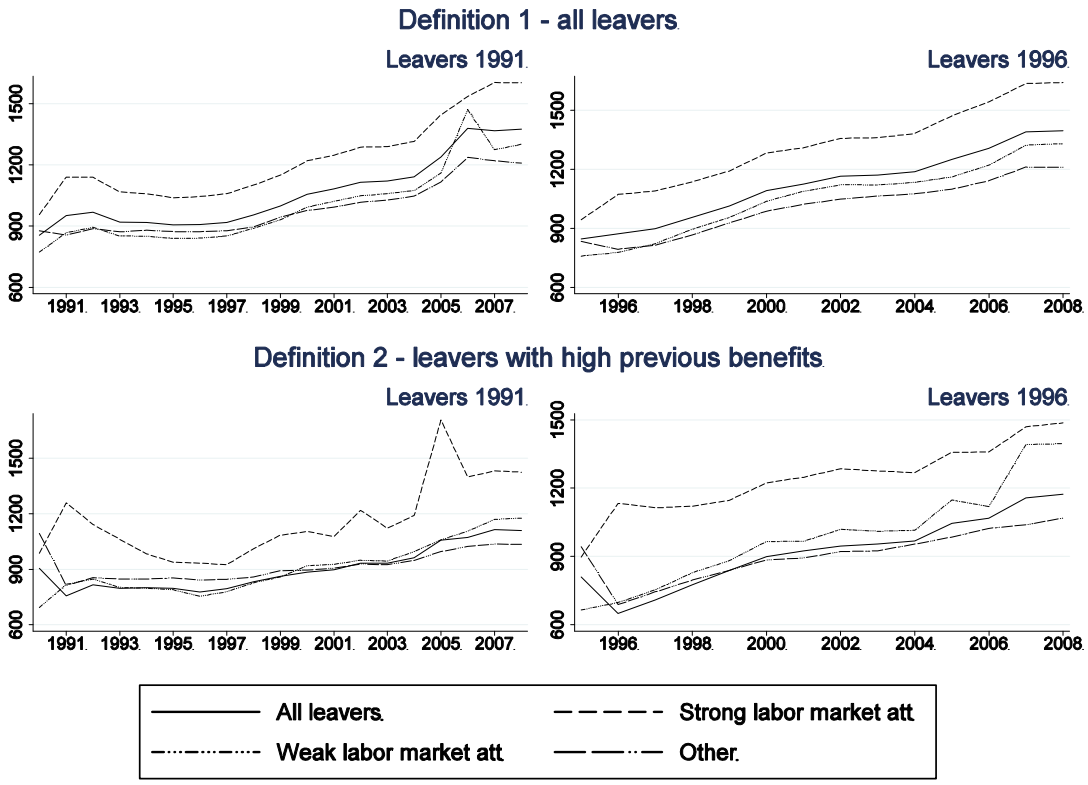

Figure 3 Leavers 1991 and 1996 - disposable income by demographic characteristics (SEK 100'). Definition 1 includes all leavers, while definition 2 includes only those with previous benefits amounting to at least one half basic amount.

5.2 Labor market outcomes

This section presents estimates of the probabilities of exiting welfare to different states, and how these probabilities vary within the population of leavers. In these estimations we use the whole time period covered by our data, that is, we include everyone that received and left welfare payments at any point between 1990 and 2008. To control for yearly and regional differences in the labor market conditions year and municipality fixed effects are included in the estimations. The estimates are interpreted as average marginal effects (see equation 2 and 3). In *Table 17* in the appendix we present estimates interpreted as exponentiated coefficients (odds-ratios).

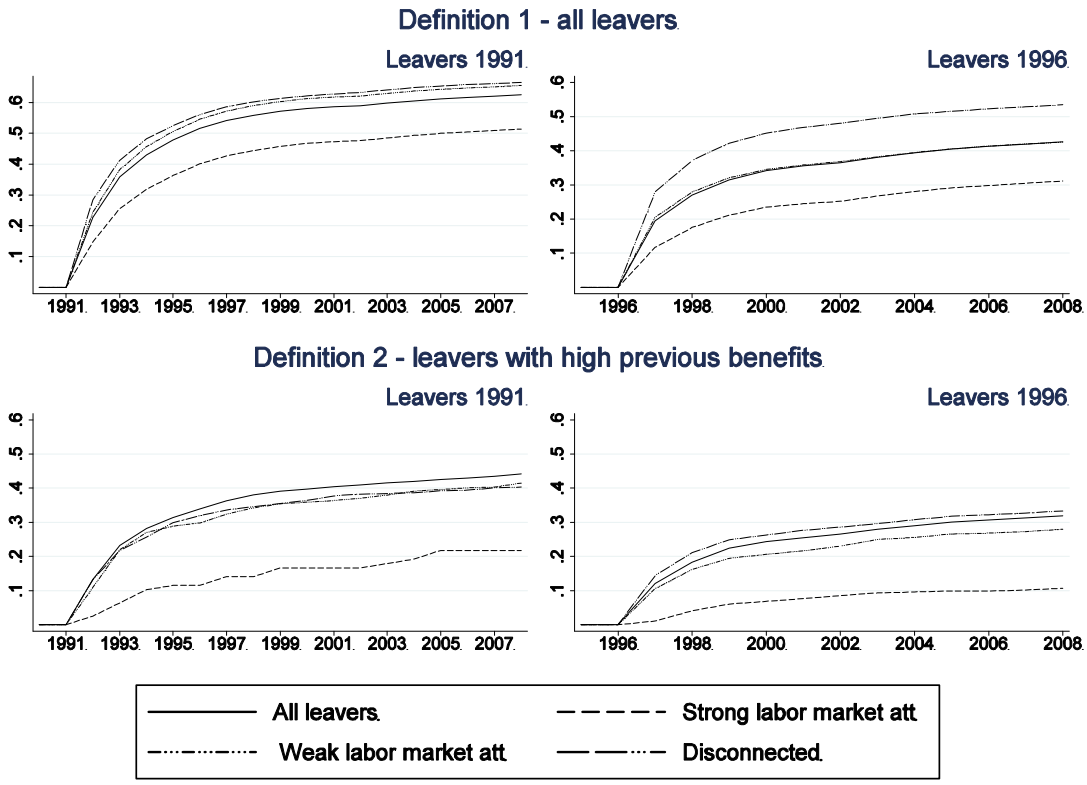

Figure 4 Leavers 1991 and 1996 - disposable income by demographic characteristics (SEK 100'). Definition 1 includes all leavers, while definition 2 includes only those with previous benefits amounting to at least one half basic amount.

Table 4 shows the probabilities of the different labor market outcomes for individuals the first year after leaving welfare. The results are obtained in a multinomial logit model where the dependent variable indicates labor market outcome. Panel one presents results where welfare participation is defined as having received any benefits during a given year. In panel two, participation is defined as in *Table 1*, that is, as having more than a half basic amount of benefits during a year. In each panel the top line presents the probability of a baseline individual (with all covariates set to zero) to leave welfare to each of the labor market states. Among the average welfare leavers, who have received any positive amount of benefits (panel 1), the most common post welfare outcome is a strong labor market attachment. Around 45 percent of these leavers have a strong connection to the labor market, and essentially work full time, in the first year after they leave welfare. This is more uncommon for women, who are 8.8 percentage points less likely to have a strong labor market attachment, as well as

younger individuals, immigrants born outside the OECD and those with low education. Some of these groups are instead more likely to have a weak labor market attachment, that is, work part time during a year. The baseline probability for this outcome is almost nine percent, and this is especially common for young welfare leavers, who are, on the margin, 11.8 percentage points more likely to have a weak labor market connection. However, immigrants are less likely to have any connection to the labor market.

Having a strong labor market attachment is less common as an initial outcome among those that leave welfare after having received higher amounts of benefits (more than one half basic amount during a year). The most common outcome for these leavers is having a weak labor market attachment, this category captures around 33 percent of theses leavers while only eleven percent have a strong labor market. With this definition of welfare participation all groups represented by the covariates have a lower probability of having a strong labor market attachment compared to the baseline, especially females and individuals with low education (they are 3.7 and 4 percentage points less likely to have a strong attachment to the labor market, respectively). Welfare leavers who have received higher amounts of assistance are also more likely to transition to the category referred to as “other”, the baseline probability is 24.6 percent and women and individuals with low education are both more than 10 percent more likely to move to this outcome. That is, more than one third of the leavers in these groups become disconnected when they leave welfare.

Thus, individuals who leave welfare after having received relatively high benefits are less likely than average leavers to become a part of the stable labor force, at least initially. Instead, they are more likely to have unstable work and to move to the category we refer to as “other”. Having a strong labor market attachment is more uncommon among women, immigrants and individuals that are young or have low education. In the following section we move on to see how these initial outcomes affect short and long run post welfare financial well-being.

Table 4 Multinomial logit analysis of post welfare outcomes

	Strong labor force att	Weak labor force att	Sick leave benefits	Unemp-loyment benefits	Student	Other
			Panel 1: Definition 1 – all leavers			
Baseline probability	0.449	0.087	0.135	0.179	0.179	0.012
Female	-0.088***	0.044***	0.012***	-0.002	0.008***	0.050***
	(0.009)	(0.003)	(0.003)	(0.001)	(0.001)	(0.003)
Age<26	-0.121***	0.118***	0.070***	0.028***	0.033***	0.011**
	(0.008)	(0.001)	(0.001)	(0.005)	(0.001)	(0.004)
Born in outside the	0.110***	0.006***	0.037***	0.073**	0.014***	-0.008
OECD	(0.007)	(0.002)	(0.004)	(0.004)	(0.001)	(0.004)
Single parent	0.010*	0.017***	0.012***	0.067***	0.001	0.081***
	(0.003)	(0.002)	(0.002)	(0.002)	(0.001)	(0.001)
Compulsory schooling	-0.096***	0.003***	0.043***	-0.029***	-0.014***	0.093***
or less	(0.002)	(0.001)	(0.001)	(0.001)	(0.001)	(0.002)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
N	2,140,674	2,140,674	2,140,674	2,140,674	2,140,674	2,140,674
			Panel 2: Definition 2 – leavers with high previous benefits			
Baseline probability	0.110	0.335	0.117	0.129	0.059	0.246
Female	-0.037***	-0.054***	-0.018***	-0.014***	0.016***	0.108***
	(0.003)	(0.002)	(0.002)	(0.001)	(0.001)	(0.003)
Age<26	-0.008***	0.110***	-0.085***	-0.028***	0.056***	-0.043***
	(0.001)	(0.003)	(0.002)	(0.003)	(0.002)	(0.003)
Born in outside the	-0.016***	-0.033***	-0.021***	0.014**	0.023***	0.030***
OECD	(0.002)	(0.005)	(0.002)	(0.005)	(0.002)	(0.008)
Single parent	-0.008***	0.045***	-0.016***	0.020***	0.028***	-0.069***
	(0.001)	(0.006)	(0.004)	(0.002)	(0.002)	(0.005)
Compulsory schooling	-0.040***	-0.024***	0.012***	-0.050***	-0.018***	0.119***
or less	(0.002)	(0.002)	(0.001)	(0.001)	(0.002)	(0.004)
Year FE	Yes	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes	Yes
N	530,921	530,921	530,921	530,921	530,921	530,921

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta method
* p<0.05, ** p<0.01, *** p<0.001

5.3 Post welfare financial situation

5.3.1 Changes in income levels and poverty rates

In this section we analyze the financial situation of individuals after they leave welfare to different outcomes and follow them forward in time to see how their financial situation changes. Specifically, we look at the probability that welfare leavers in each outcome category will experience an increase in disposable income relative to the income they had during the last year of welfare participation and the risk of being in poverty. Since poverty is defined in terms of disposable income, these two measures will be affected similarly, and if some group remains poor even while their disposable income increases it reflects only the fact that the poorer group had an initially lower

income level and higher poverty rate. Thus, and due to spatial constraints, we present estimates of changes in income and poverty only for the average population, when studying sub-groups we only present estimates for changes in disposable income. Intuitively, one would expect that leaving welfare is strongly associated with a better financial situation. However, for this to occur the reduction in benefits must be accompanied by an increase in other income that compensates for the lost welfare income. Thus, there is a possibility that income decreases and the risk of poverty increases when an individual leaves welfare, at least initially. However, one could also argue that, if individuals are well-informed and rational, they would not choose to leave benefits if they were not able to increase for example labor income proportionally (or, that an individual will only be denied benefits if the caseworker correctly perceives that the family can get sufficient income from other sources).

As in the multinomial logit specification, the following estimations include fixed effects for year and municipality, in an attempt to distinguish the effect of the transition off welfare from yearly and regional effects. Again we here present average marginal effects, estimates interpreted as odds-ratios can be found in the appendix.

Table 5 shows the results, interpreted as average marginal effects, from a logit estimation of the probability of experiencing an increase in income relative to the last year with social assistance, given being in a specified initial state. The baseline category is the group we refer to as “other” or “disconnected”, so estimations are to be interpreted relative to the outcome for individuals in this group. Panel 1 shows results using the broader definition of welfare participation while panel 2 shows results for the definition presented in *Table 1*, that is, those leavers who have received relatively high benefit levels. The top line of each panel shows the baseline probability of the outcome in the reference group, that is, among individuals in the “other” category. These statistics tell us that among those leaving to the baseline category after having received any benefits around 43 percent experience an increase in income during the first year off welfare (57 percent does not). For those who have received higher benefits (panel 2), the corresponding number is 32.5 percent. After ten years off welfare 70 percent of all disconnected leavers and 63 percent of those disconnected leavers that were previously receiving relatively high benefits have a higher income than when they were on welfare.

Thus, the difference between the groups is persistent over time, after ten years off welfare the group who were more reliant on benefits is still worse off in terms of disposable income, at least among those in the baseline category.

Having a strong labor market attachment have a larger positive contribution for the previously more welfare reliant leavers. Compared to the baseline, income is 55 percent more likely to increase for those with a strong labor market attachment after the first year while for the average leavers the difference relative to the baseline is 31 percent. For both groups this positive association is stronger than for any other outcome, but the difference decreases over time off welfare and after ten years weak and strong labor market attachment are associated with almost the same chances of an increased income, relative to the income during their last year on welfare. Since these two outcomes are relatively similar, it is possible that individuals move between them, which can explain why the groups converge in income.

For both definitions, those leaving welfare to be supported by sick leave benefits are initially worse off than any other group, with only small deviations from the baseline category (the disconnected leavers) and among all leavers (definition 1) those leaving to the sick leave insurance are less likely than the baseline to experience an increase in income (1.3 percentage points less likely in the initial year, thereafter the estimates are positive but insignificant).

The results for the probability of being in poverty (defined as having a disposable income below the median) are presented in *Table 6*. These results are essentially the inverse of those for disposable income, but also taking the relative level of income into account. In the baseline category, that is, among those in the "other" category, the probability of being poor is around 18.7 and 41 percent, respectively for the two definitions, as shown in the top line of each panel (which can be compared to an overall poverty rate of around 14 percent in the economy as a whole). That is, poverty among welfare leavers is much more common among those that leave welfare after having received higher amounts of benefits. These leavers also depend more on having a strong labor market attachment in order to avoid poverty, and for both definitions of welfare participants essentially no one who have a strong labor market attachment are in poverty after leaving welfare.

Table 5 Probability of increased income

	Year 1	Year 2	Year 5	Year 10
		Panel 1: Definition 1 – all leavers		
Baseline probability	0.432	0.494	0.607	0.791
Strong labor market attachment	0.314***	0.245***	0.162***	0.113***
	(0.001)	(0.003)	(0.002)	(0.002)
Weak labor market attachment	0.128***	0.138***	0.107***	0.092***
	(0.002)	(0.001)	(0.002)	(0.003)
Sick leave benefits	-0.013**	0.002	0.009*	0.008
	(0.004)	(0.004)	(0.005)	(0.005)
Unemployment benefits	0.084***	0.077***	0.061***	0.042***
	(0.002)	(0.002)	(0.001)	(0.002)
Student	0.048***	0.029***	0.054***	0.052***
	(0.004)	(0.003)	(0.005)	(0.005)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	2,140,674	1,692,341	1,113,983	642,497
		Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.325	0.396	0.517	0.630
Strong labor market attachment	0.546***	0.403***	0.249***	0.147***
	(0.008)	(0.007)	(0.012)	(0.010)
Weak labor market attachment	0.346***	0.287***	0.223***	0.171***
	(0.008)	(0.004)	(0.004)	(0.005)
Sick leave benefits	0.031***	0.021**	0.040***	0.033***
	(0.007)	(0.006)	(0.005)	(0.005)
Unemployment benefits	0.106***	0.074***	0.059***	0.033***
	(0.004)	(0.005)	(0.005)	(0.006)
Student	0.266***	0.158***	0.121***	0.104***
	(0.005)	(0.005)	(0.007)	(0.006)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	530,921	424,318	280,951	150,954

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

For leavers who have received higher benefits having a weak labor market attachment, being unemployed and being a student are all associated with a reduction of the risk of poverty of around 22 percentage points in the initial year, that is, the poverty rate in these groups is less than half of that experienced by individuals in the baseline category (the disconnected individuals). The differences between the outcomes are smaller and vary more in size in the larger sample of all welfare leavers. However, in both panels we see that the risk of poverty is higher than the baseline for those who leave to be supported by the sick leave insurance, reflecting the fact that this group is also less likely to experience an increase in income, as shown in *Table 5*. However, this

difference is attenuated over time, probably since most individuals do not stay on sick leave benefits for more than a few year and then move to another category.

The estimates above only concern those individuals that stay off welfare, for two, five and ten years respectively. However, as shown in *Figure 4*, a substantial fraction of those who leave welfare return to benefit receipt within a few years. The graphical illustration also shows that the return rate differs between individuals in different outcomes. To illustrate this further *Table 7* presents estimates for the probability of return within two, five and ten years after leaving welfare, and how this differs between post welfare outcomes.

Table 6 Probability of poverty

	Year 1	Year 2	Year 5	Year 10
		Panel 1: Definition 1 – all leavers		
Baseline probability	0.187	0.148	0.110	0.103
Strong labor market attachment	-0.196***	-0.135***	-0.075***	-0.067***
	(0.002)	(0.001)	(0.001)	(0.001)
Weak labor market attachment	-0.003	-0.003	0.007***	0.001
	(0.002)	(0.002)	(0.001)	(0.001)
Sick leave benefits	0.095***	0.082***	0.064***	0.042
	(0.004)	(0.004)	(0.004)	(0.003)
Unemployment benefits	-0.065***	-0.035***	-0.007***	-0.007***
	(0.002)	(0.002)	(0.001)	(0.001)
Student	-0.008**	0.029***	0.036***	0.019***
	(0.003)	(0.002)	(0.002)	(0.002)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	2,140,674	1,692,341	1,113,983	642,497
		Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.410	0.335	0.242	0.203
Strong labor market attachment	-0.475***	-0.324***	-0.167***	-0.118***
	(0.004)	(0.004)	(0.003)	(0.004)
Weak labor market attachment	-0.250***	-0.136***	-0.069***	-0.051***
	(0.003)	(0.003)	(0.003)	(0.003)
Sick leave benefits	0.064***	0.067***	0.046***	0.015*
	(0.010)	(0.010)	(0.008)	(0.007)
Unemployment benefits	-0.216***	-0.141***	-0.076***	-0.062***
	(0.003)	(0.002)	(0.004)	(0.003)
Student	-0.214**	-0.086***	-0.027***	-0.029***
	(0.004)	(0.004)	(0.004)	(0.003)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	530,921	424,318	280,951	150,954

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

The baseline probability of return, as shown in the top line of each panel in *Table 7*, shows that the risk of going back to receiving benefits is around 22 percent for the average welfare participant (panel one), which implies that slightly above one fifth of welfare leavers are self-sufficient for only one year before returning to benefit receipt. After five years 42 percent have experienced at least one year of repeated welfare receipt, and after ten years around half of all leavers have returned. For those having a strong labor market attachment in the first year after leaving welfare the probability of repeated dependency is substantially lower, almost 13 percentage points lower in the first period, and 45 percentage points lower after ten years. The risk of returning to welfare is higher for those on sick leave benefits and for students.

The baseline return rate is lower for welfare leavers who have received higher amounts of benefits (panel 2), 18 percent have returned within one year and 36 and 44 percent after five and ten years, respectively. The pattern observed for the average leavers in panel 1 still holds, with very low risk of return for those with a strong labor market attachment, which is consistent with the illustration in *Figure 4*. This indicates that cycling into and out of welfare participation is more uncommon for those that receive higher amounts of benefits (and can thus be said to *depend* on benefits), while it is more common for those who need only small amounts of social assistance to, for example, cover temporary expenditures. Also, it is clear that those who leave welfare to outcomes that are associated with low probabilities of a higher income are also more likely to return to benefit dependency.

Thus, the results this far clearly shows that working full time in the first year off welfare implies both doing well financially, in terms of disposable income, and in terms of avoiding repeated dependency. This is true both in the short run and in the long run. This might in part be explained by the fact that leaving welfare for work yields a higher income and promotes self sufficiency, but it is also the case that those welfare reliant individuals that transition into the labor market are likely to exhibit some unobserved characteristics that makes them more likely to experience a positive outcome. That is, there might be a selection of individuals with higher “ability” out of welfare participation. Also, one should keep in mind that, at least among those leavers who have received relatively high amounts of benefits, having a strong labor market attachment is

not very common as an initial outcome. Instead, most of these previously welfare reliant leavers are more likely to have a weak attachment to the labor market or become disconnected, both of which are outcomes associated with substantially lower probabilities of increased income and higher risk of repeated dependency.

Table 7 Probability of return

	Year 2	Year 5	Year 10
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.221	0.426	0.515
Strong labor market attachment	-0129***	-0.355***	-0.455***
	(0.001)	(0.003)	(0.002)
Weak labor market attachment	-0.040***	-0.302***	-0.473***
	(0.001)	(0.003)	(0.001)
Sick leave benefits	0.014***	-0.222*	-0.334
	(0.002)	(0.002)	(0.002)
Unemployment benefits	-0.035***	-0.266***	-0.456***
	(0.002)	(0.003)	(0.002)
Student	0.048***	-0.202***	-0.444***
	(0.003)	(0.005)	(0.005)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	2,042,811	1,706,064	1,113,267
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.187	0.356	0.437
Strong labor market attachment	-0.291***	-0.336***	-0.358***
	(0.007)	(0.004)	(0.004)
Weak labor market attachment	-0.033***	-0.284***	-0.414***
	(0.004)	(0.003)	(0.002)
Sick leave benefits	0.013**	-0.224***	-0.331***
	(0.004)	(0.002)	(0.003)
Unemployment benefits	-0.094***	-0.318***	-0.459***
	(0.004)	(0.004)	(0.005)
Student	0.044***	-0.192***	-0.406***
	(0.004)	(0.005)	(0.007)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	502,361	403,169	239,461

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

5.3.2 Differences over the business cycle

In this section we try to determine how the situation of welfare leavers varies with the state of the economy. During the time period covered by our data there were substantial business cycle fluctuations with very high unemployment levels during the beginning of the 1990's, peaking at above eight percent in 1993 and reaching quite low levels (around four percent) towards the end of the decade. To study if and how the situation of welfare

leavers differs between those that leave during different states of the economy we limit the analysis to individuals leaving welfare during a time when unemployment levels were very high (1992-1994) and during a time of low unemployment and a growing economy (1998-2000). In *Table 8* and *Table 9* we present the estimates of the probability of experiencing an increase in income for leavers at these different points in time. For the latter time period we are not able to follow individual for as long as ten years after leaving welfare. Hence, for consistency we choose a five year perspective when we separate leavers at different time periods.

Table 8 shows the estimated probability of an increase in disposable income for individuals who leave benefits during the financial downturn of the early 1990's. The fact that the baseline probability, that is, the probability of an increase in income for those individuals how transition to the "other" category, is lower than the average presented in *Table 5* indicates that these leavers do worse in a recession than when the labor market is stronger. Also, the marginal effect of having a strong labor market attachment is lower than those estimated in *Table 5*. However, the chances of a higher income increases over time and approaches that of the average. This can probably be explained by the fact that the labor market gets stronger and those who do not initially enter the labor force are able to do so when the economy improves.

Individuals leaving welfare during the stronger economy around 1998 to 2000 experience a slightly better initial situation. As shown in *Table 9*, the probability for the baseline category (those leaving to "other") to have a higher disposable income in the year after leaving welfare is 46 and 34 percent in the initial year for each definition. This is higher than what is estimated in *Table 5*. The relative differences between the different outcome categories are similar to those estimated for the pooled years. Thus, over all, individuals who leave welfare during a stronger economy seems to be doing somewhat better than leavers on average in the sense that a larger fraction of these leavers experience an immediate increase in income.

Table 8 Probability of increased income, leavers 1992-1994

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.407	0.442	0.537
Strong labor market attachment	0.268***	0.216***	0.176***
	(0.006)	(0.006)	(0.002)
Weak labor market attachment	0.120***	0.132***	0.118***
	(0.003)	(0.003)	(0.003)
Sick leave benefits	-0.006**	0.010***	0.020***
	(0.003)	(0.003)	(0.005)
Unemployment benefits	0.070***	0.053***	0.047***
	(0.002)	(0.002)	(0.001)
Student	0.057***	0.038***	0.076***
	(0.004)	(0.003)	(0.005)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	654,980	520,395	353,624
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.288	0.320	0.404
Strong labor market attachment	0.524***	0.384***	0.257***
	(0.010)	(0.013)	(0.019)
Weak labor market attachment	0.355***	0.287***	0.239***
	(0.009)	(0.009)	(0.008)
Sick leave benefits	0.072***	0.065**	0.082***
	(0.009)	(0.009)	(0.007)
Unemployment benefits	0.103***	0.051***	0.028**
	(0.006)	(0.010)	(0.009)
Student	0.280***	0.179***	0.132***
	(0.012)	(0.010)	(0.015)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	104,864	85,015	60,791

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

The differences that are observed between these time periods are possibly explained by the conditions on the labor market, but there might also be the case that different types of individuals choose to leave welfare (or for some reason looses eligibility) at different time periods. Those that leave welfare during a recession might differ from those that choose to leave when the economy is stronger, both with respect to observed and unobserved characteristics. However, it is not clear how one would expect this to influence on the results.

Table 9 Probability of increased income, leavers 1998-2000

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.464	0.551	0.684
Strong labor market attachment	0.322***	0.238***	0.145***
	(0.005)	(0.003)	(0.002)
Weak labor market attachment	0.109***	0.120***	0.080***
	(0.003)	(0.002)	(0.004)
Sick leave benefits	-0.018**	-0.005	-0.002
	(0.006)	(0.006)	(0.006)
Unemployment benefits	0.092***	0.005***	0.070***
	(0.003)	(0.003)	(0.002)
Student	0.039***	0.023***	0.035***
	(0.006)	(0.005)	(0.006)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	598,675	503,498	369,608
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.338	0.444	0.592
Strong labor market attachment	0.542***	0.392***	0.235***
	(0.007)	(0.008)	(0.008)
Weak labor market attachment	0.343***	0.277***	0.205***
	(0.004)	(0.003)	(0.004)
Sick leave benefits	0.021**	0.001***	0.014**
	(0.009)	(0.007)	(0.006)
Unemployment benefits	0.092***	0.005***	0.078***
	(0.005)	(0.006)	(0.006)
Student	0.283***	0.147***	0.099***
	(0.006)	(0.005)	(0.007)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	169,159	143,806	112,523

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

It is also important to note that the fraction of welfare leavers who have a strong labor force attachment during the first year without welfare benefits is lower in the earlier time period, and higher during the latter, compared to the average across time (as shown by the baseline probability in *Table 4*). It seems that those with higher previous benefits are more sensitive in terms of how the business cycle affect post welfare outcomes, during the early 1990's the share leaving to the core labor force was four percent, compared to 13 percent during the later time period and 11 percent on average. The corresponding numbers for all leavers (defintion 1) are 41 percent during 1992-1994, 48 percent during 1998-2000 and 45 percent on average. The share of leavers

having a weak labor market attachment also decreases in the financial downturn, while the group of disconnected leavers grows.

Hence, the results indicate that post welfare outcomes differ among individuals that leave welfare in a strong relative to a weak economy. However, the differences diminishes over time and those that leave during the recession are not worse off than the average in the longer run.

5.3.3 Heterogeneity among groups

In this section we focus on groups whose welfare participation is commonly regarded to be following different patterns than the average population, and are also considered to have a weaker position on the labor market. In particular we study young individuals (who are younger than 26 years old) and individuals that have immigrated to Sweden from a country outside the OECD. Young individuals typically have higher participation rates in social assistance, but their spells tend to be shorter than the average. Thus, it is interesting to study if their post welfare situation is different from that experienced by the average welfare participant. Immigrants, on the other hand, tend to have longer spells of benefit receipt and leave welfare at a lower rate than the average. Often it is also argued that groups that in general have a more unstable attachment to the labor market are those that are more affected by business cycle fluctuations. To see if this is true also for individuals leaving welfare we again extract years that we argue represent a strong and weak labor market in the Swedish economy, and look separately at young and immigrant leavers during these years.

Table 10 and *Table 11* shows estimations for individuals younger than 26 years old and immigrants born outside the OECD, respectively. For young individuals the baseline probability to experience an increase in income is similar to that of the whole population (see *Table 5*), but younger welfare leavers seem to benefit less from having a strong attachment to the labor market, which increases their probability of an increase in income by 29 and 54 percentage points for average young leavers and young leavers with high previous benefits, respectively. Among all young welfare leavers, including those only receiving small benefits, the differences among most of the initial outcomes become small and insignificant after ten years. This implies that for young individuals

the initial outcome is not as strongly associated with future income as for other groups, at least among those that receive smaller amounts of benefits.

For immigrants, the baseline probability of increased income is also similar to that of the average population, at least in the short run. The marginal increase for those having a strong labor market attachment is about the same as for the total population, at least in the short run. However, as for the younger welfare leavers, the differences between the initial outcomes are attenuated over time, especially for those with lower amounts of previous benefits. Since immigrants on average have a lower level of income, they are more likely than other welfare leavers to be poor when they stop collecting benefits, both in the short and in the longer run (estimates not shown, available on request).

Table 10 Probability of increased income, age<26

	Year 1	Year 2	Year 5	Year 10
		Panel 1: Definition 1 – all leavers		
Baseline probability	0.424	0.476	0.614	0.726
Strong labor market attachment	0.294***	0.202***	0.071***	-0.006
	(0.007)	(0.009)	(0.005)	(0.007)
Weak labor market attachment	0.101***	0.120***	0.071***	0.044***
	(0.005)	(0.005)	(0.005)	(0.003)
Sick leave benefits	-0.060***	-0.042***	-0.043***	-0.051***
	(0.007)	(0.007)	(0.009)	(0.007)
Unemployment benefits	0.071***	0.059***	0.026***	-0.005
	(0.004)	(0.004)	(0.004)	(0.011)
Student	0.042***	0.032***	0.030***	0.011
	(0.010)	(0.008)	(0.009)	(0.005)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	379,993	302,121	215,601	150,614
		Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.306	0.396	0.498	0.634
Strong labor market attachment	0.541***	0.384***	0.215***	0.103***
	(0.018)	(0.015)	(0.019)	(0.021)
Weak labor market attachment	0.338***	0.272***	0.195***	0.131***
	(0.006)	(0.008)	(0.006)	(0.007)
Sick leave benefits	0.044***	0.021**	0.028***	0.018*
	(0.008)	(0.007)	(0.007)	(0.009)
Unemployment benefits	0.095***	0.050***	0.009	-0.008
	(0.007)	(0.009)	(0.006)	(0.010)
Student	0.285***	0.155***	0.111***	0.094***
	(0.009)	(0.010)	(0.012)	(0.013)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	75,832	61,172	43,692	29,394

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

Table 11 Probability of increased income, born outside the OECD

	Year 1	Year 2	Year 5	Year 10
		Panel 1: Definition 1 – all leavers		
Baseline probability	0.426	0.494	0.614	0.707
Strong labor market attachment	0.309***	0.225***	0.119***	0.081
	(0.005)	(0.004)	(0.005)	(0.007)
Weak labor market attachment	0.111***	0.115***	0.070***	0.058***
	(0.004)	(0.005)	(0.005)	(0.007)
Sick leave benefits	-0.085***	-0.080***	-0.051***	-0.017*
	(0.003)	(0.005)	(0.008)	(0.008)
Unemployment benefits	0.076***	0.057***	0.029***	0.018**
	(0.005)	(0.004)	(0.007)	(0.006)
Student	0.052***	0.026***	0.020*	0.012
	(0.005)	(0.005)	(0.009)	(0.018)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	236,937	184,446	118,912	54,254
		Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.317	0.391	0.539	0.680
Strong labor market attachment	0.514***	0.386***	0.217***	0.110***
	(0.007)	(0.009)	(0.008)	(0.017)
Weak labor market attachment	0.334***	0.258***	0.164***	0.102***
	(0.009)	(0.006)	(0.008)	(0.009)
Sick leave benefits	-0.049***	-0.074***	-0.046***	-0.404***
	(0.007)	(0.007)	(0.008)	(0.007)
Unemployment benefits	0.092***	0.052***	0.021**	-0.006
	(0.006)	(0.008)	(0.007)	(0.013)
Student	0.280***	0.159***	0.084***	0.058***
	(0.008)	(0.008)	(0.008)	(0.009)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	112,343	90,167	64,639	35,430

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

Since we believe that immigrants and young individuals in general have a weaker labor market position and that they might thus be more affected by business cycle fluctuations, we are interested in how this translates to welfare leavers in these groups. Thus, we again extract years from the sample that we argue represent time periods of different labor market conditions and separately look at young and immigrant leavers in the years 1992-1994 and 1998-2000. The results are presented in *Table 12* through *Table 15*.

Young individuals who leave welfare during the financial downturn seem to experience a higher probability of increasing their income in the baseline category, both compared to the average of young leavers and compared to other leavers in the same

time period. In the first year around 43 percent (definition 1) and 32 percent (definition 2) increase their disposable income relative to the last year with welfare. However, the gain from having a strong labor market attachment is 26 and 52 percentage points for each definition of welfare participants. This is lower than the estimates in *Table 10* and thus having a strong labor market attachment seem to be associated with a lower financial payoff. This is true also for those with a weak labor market attachment which indicates that those leaving to the labor market are slightly worse off in the recession than on average. The difference is persistent over time, and after five years those who left during the recession are still less likely to have increased their income.

For the group of young individuals who leave welfare in the stronger economy between 1998 and 2000, the situation seems to be quite similar to the average across all years. However, having a labor market attachment seems to be associated with a larger marginal increase in the probability of an increase in the disposable income, the estimates for the first year are 31 and 57 percentage points for each definition of welfare participation (compared to 29 and 54 percentage points, respectively, when pooling all years). As during the recession, the differences are persistent and still remain after five years.

The situation among immigrants (defined as being born outside the OECD) that leave welfare is persistently worse for those who leave during the recession, both with respect to the baseline outcome and the marginal gain for those with a strong or weak labor market attachment. As shown by the top lines in each panel of *Table 14* the probability that an individual leaving welfare to the baseline ("other") category will experience an increase in disposable income during the first year is 42 and 31 percent, respectively, for each definition of welfare participation. The marginal increase in this probability if having a strong labor market attachment is 25 and 46 percentage points, respectively. All these estimates are lower than the average for the immigrant leavers, presented in *Table 11*. These differences remain after several years off welfare, those leaving during the recession are after five years still worse off than the average.

Table 12 Probability of increased income, leavers 1992-1994 age<26

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.434	0.471	0.604
Strong labor market attachment	0.260***	0.161***	0.037***
	(0.008)	(0.009)	(0.007)
Weak labor market attachment	0.104***	0.132***	0.051***
	(0.007)	(0.006)	(0.005)
Sick leave benefits	-0.088***	-0.064***	-0.073***
	(0.007)	(0.008)	(0.006)
Unemployment benefits	0.046***	0.021***	-0.017***
	(0.005)	(0.005)	(0.006)
Student	0.042***	0.025**	0.017***
	(0.011)	(0.010)	(0.012)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	172,949	138,108	97,810
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.306	0.396	0.498
Strong labor market attachment	0.541***	0.384***	0.215***
	(0.018)	(0.015)	(0.019)
Weak labor market attachment	0.338***	0.272***	0.195***
	(0.006)	(0.008)	(0.006)
Sick leave benefits	0.044***	0.021**	0.028***
	(0.008)	(0.007)	(0.007)
Unemployment benefits	0.095***	0.050***	0.009
	(0.007)	(0.009)	(0.006)
Student	0.285***	0.155***	0.111***
	(0.009)	(0.010)	(0.012)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	28,899	23,344	16,896

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

On the other hand, immigrants who left between year 1998 and 2000 have a higher probability of financial improvement than the average among immigrant leavers, as shown in *Table 15*. The baseline probability of increased income is higher, 43 percent during the first year and 64 percent after five years when defining welfare participants as anyone who received any benefits (29 and 51 percent if using definition 2). The marginal increase in this probability among those who have a strong labor market attachment is also larger than for the average.

Table 13 Probability of increased income, leavers 1998-2000 age<26

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.437	0.510	0.640
Strong labor market attachment	0.313***	0.219***	0.110***
	(0.009)	(0.010)	(0.007)
Weak labor market attachment	0.092***	0.110***	0.065***
	(0.007)	(0.005)	(0.009)
Sick leave benefits	-0.044**	-0.026	-0.015
	(0.010)	(0.009)	(0.011)
Unemployment benefits	0.102***	0.111***	0.077***
	(0.006)	(0.006)	(0.007)
Student	0.036***	0.035***	0.022***
	(0.012)	(0.010)	(0.014)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	95,539	79,728	58,009
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.290	0.379	0.511
Strong labor market attachment	0.570***	0.411***	0.250***
	(0.026)	(0.018)	(0.021)
Weak labor market attachment	0.366***	0.289***	0.210***
	(0.006)	(0.009)	(0.009)
Sick leave benefits	0.074**	0.047***	0.056**
	(0.012)	(0.012)	(0.010)
Unemployment benefits	0.144***	0.111***	0.082***
	(0.011)	(0.012)	(0.010)
Student	0.307***	0.150***	0.110***
	(0.012)	(0.014)	(0.027)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	21,390	17,972	13,403

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

Table 14 Probability of increased income, leavers 1992-1994 born outside the OECD

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.420	0.456	0.547
Strong labor market attachment	0.252***	0.184***	0.117***
	(0.007)	(0.007)	(0.008)
Weak labor market attachment	0.103***	0.109***	0.078***
	(0.007)	(0.010)	(0.008)
Sick leave benefits	-0.083***	-0.065***	-0.048***
	(0.007)	(0.007)	(0.009)
Unemployment benefits	0.061***	0.026***	-0.004
	(0.006)	(0.007)	(0.008)
Student	0.035***	0.023	0.042*
	(0.012)	(0.016)	(0.018)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	59,906	46,377	29,083
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.312	0.338	0.447
Strong labor market attachment	0.461***	0.355***	0.208***
	(0.014)	(0.018)	(0.023)
Weak labor market attachment	0.313***	0.236***	0.164***
	(0.015)	(0.013)	(0.014)
Sick leave benefits	-0.056***	-0.055**	-0.046**
	(0.014)	(0.014)	(0.014)
Unemployment benefits	0.078***	0.030*	-0.024
	(0.007)	(0.013)	(0.020)
Student	0.267***	0.166***	0.087***
	(0.013)	(0.012)	(0.029)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	22,321	17,803	12,584

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

The results indicate that the association between the business cycle fluctuations and post welfare outcomes is stronger for young individuals and immigrants. However, as mentioned earlier, it is not clear that this is an effect of a stronger labor market or due to unobserved differences between the groups who leave welfare during different economic conditions. The differences are quite small in economic terms, but seems to be persistent and remains several years after the individual stops collecting benefits. However, when pooling all years the initial outcome of immigrants and young welfare leavers seems to be less correlated with long run outcomes than for the average population (with a ten year time span).

Table 15 Probability of increased income, leavers 1998-2000 born outside the OECD

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Baseline probability	0.460	0.555	0.689
Strong labor market attachment	0.324***	0.222***	0.098***
	(0.006)	(0.004)	(0.007)
Weak labor market attachment	0.094***	0.096***	0.052***
	(0.006)	(0.006)	(0.007)
Sick leave benefits	-0.010**	-0.088	-0.061***
	(0.006)	(0.006)	(0.011)
Unemployment benefits	0.074***	0.061***	0.035***
	(0.007)	(0.006)	(0.007)
Student	0.040***	0.026***	0.002
	(0.011)	(0.009)	(0.013)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	80,978	66,941	47,510
	Panel 2: Definition 2 – leavers with high previous benefits		
Baseline probability	0.336	0.440	0.602
Strong labor market attachment	0.519***	0.383***	0.204***
	(0.011)	(0.012)	(0.010)
Weak labor market attachment	0.331***	0.253***	0.153***
	(0.007)	(0.007)	(0.010)
Sick leave benefits	-0.058***	-0.081***	-0.049**
	(0.009)	(0.009)	(0.012)
Unemployment benefits	0.094***	0.054***	0.037**
	(0.010)	(0.012)	(0.012)
Student	0.274***	0.138***	0.058***
	(0.008)	(0.007)	(0.010)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	46,566	39,033	30,343

Logit estimates, average marginal effects
Standard errors in parentheses, calculated using the Delta-method
* p<0.05, ** p<0.01, *** p<0.001

5.4 Disconnected leavers – leavers with unknown outcomes

In this section we look more closely at those leavers who enter the "other" category when ending benefit take-up and who are thus not supported neither by labor work nor some social insurance scheme. Following previous literature we refer to this group as disconnected leavers. *Table 16* shows the average labor income, disposable income and the fraction of households below the poverty threshold among disconnected leavers, and the whole group of leavers, excluding the disconnected. In this table we define welfare participants as those who have received more than one half basic amount of benefits (definition 2), since it is in this group of leavers that disconnectedness is one of the most common initial outcomes (among those leavers that have collected only small amounts

of benefit being disconnected is very uncommon, as shown in *Table 4*). Clearly, both income from labor (partly by definition of the outcome states) and disposable income is lower for leavers in the "other" category, and the poverty rate in this group is almost twice as high in this group compared to the average in the remaining categories. As shown in *Table 4* single parents and young individuals are less likely to become disconnected when leaving welfare, indicating that income pooling with a partner might be important for this group of leavers. This, and the fact that we are studying outcomes at the individual level, while welfare eligibility is determined at the household level, implies that it is important to also study the income and labor market outcomes of a potential partner. It could be the case that an individual whose partner leaves welfare by moving to work is categorized as a disconnected leaver, since she/he is no longer eligible for benefits when the partner is working. To assess if it is the case that most leavers categorized as disconnected are actually supported by a working spouse, we also look at the labor income and post welfare outcomes of the partners of disconnected leavers. This is indicated by the fact that disconnected leavers complement other income with welfare benefits to a lesser extent than do leavers that are not disconnected (in fact, their social assistance benefits are only half of those of non disconnected leavers). Thus, we also look at the income and labor market attachment of the partners of disconnected leavers that we can observe in our data. This is also included in *Table 16*, indicating that the partners of disconnected leavers have a higher labor income and are more likely to have a strong labor market attachment. However, the poverty rate is higher than average among the married disconnected leavers, indicating that the income of the working spouse is not sufficient to help the family leave financial hardship. This analysis is of course limited by the fact that we do not observe all partner relations, unmarried cohabiting individuals without common children are identified as two single individuals rather than as a couple.

Table 16 Income among disconnected leavers

	Disconnected	Not disconnected
Labor income	2 778	49 142
	(9 901)	(53 920)
SA (amount)	8 141	16 858
	(6 929)	(19 165)
Disposable	66 687	80 169
income	(57 242)	(38 448)
Family disposable	140 788	135 961
income	(170 846)	(92 240)
Fraction in poverty	0.410	0.197
	(0.492)	(0.398)
-- if married	0.557	0.340
	(0.497)	(0.474)
Partner's labor	47 924	39 913
income	(71 343)	(66 401)
Partners w strong	0.158	0.124
labor market att	(0.364)	(0.330)
Returned to SA	0.310	0.262
within 5 years	(0.462)	(0.440)

Standard deviations in parentheses

As shown in *Figure 4*, the return rate from the disconnected state is substantially higher than that from full-time work. Also, the bottom line of *Table 16* shows that around 31 percent of all disconnected leavers have returned to welfare after five years, while only 28 percent of leavers in other post welfare outcomes have done so. There are also transitions to other labor market states, some of those leavers that initially become disconnected eventually get a stronger connection to the labor market, which is shown in *Figure 5*. In this figure we illustrate the transitions in to other categories among those who left welfare to the "other" category in 1991 and 1996. We also show the share that remain disconnected. The fraction that get a strong labor force attachment vary substantially, both over time and between the two definitions of welfare participation. Clearly, welfare leavers with high previous benefits in 1991 are more likely to remain disconnected from the labor market than are those leaving in 1996. The difference between the years is smaller for the average leavers (definition 1), and their risk of remaining disconnected is lower overall.

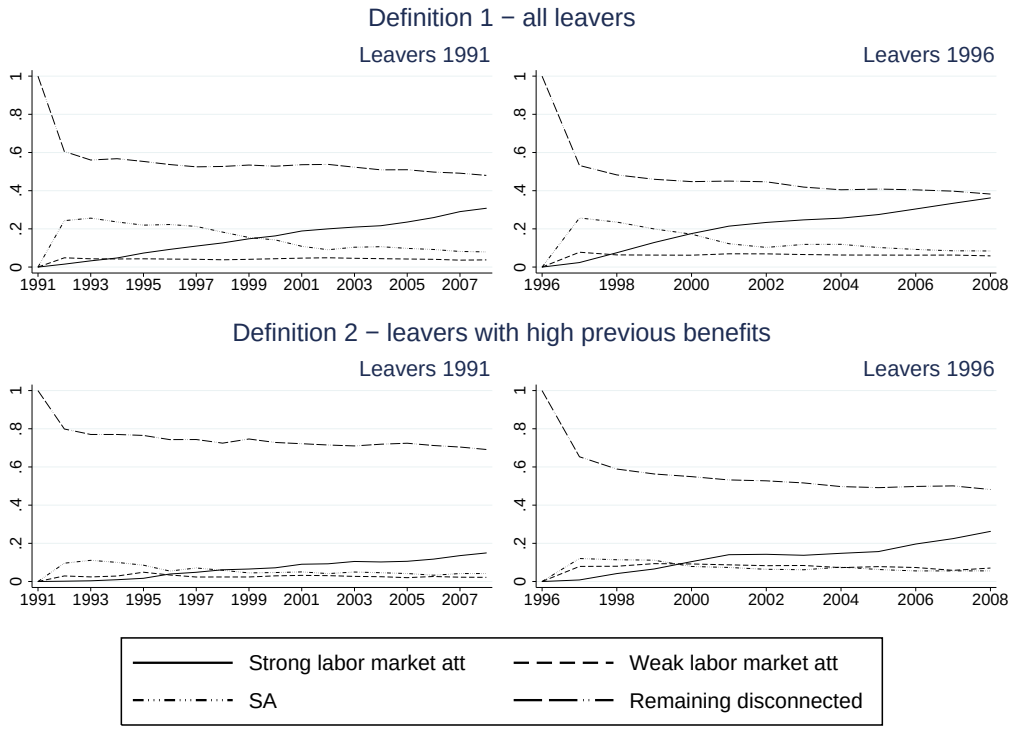

Figure 5 Transitions among those initially leaving welfare to "disconnectedness" in 1991 and 1996. Definition 1 includes all leavers, while definition 2 includes only those with previous benefits amounting to at least one half basic amount.

6 Conclusions

In this paper we have used Swedish register data to look at post welfare outcomes for individuals leaving social assistance between 1990 and 2008. Having access to a large set of income variables we can fully characterize the post welfare income at the individual and household level. Unlike most earlier studies, both in the US and Europe, our data covers a long time period, giving us the opportunity to study repeated welfare dependency as well as how results vary across business cycle fluctuations.

Earlier research and theoretical predictions suggest that it is likely to be difficult for individuals that stop collecting welfare to compensate completely for lost welfare income with labor income. Thus, if the financial incentives are not altered by policy, welfare leavers are may suffer a loss in disposable income, and remain or become poor. Moreover, studies from the US indicate that the benefits from leaving welfare are not equally distributed across population groups. For example, groups that are generally

more disadvantaged (for the US primarily single mothers) also have worse post welfare outcomes. The fact that the social assistance system in Sweden is universal, rather than targeting families with children, implies that we can extend the analysis and study heterogeneous effects for other groups.

We study how income and the risk of falling below the (relative) poverty line changes when leaving welfare, and how this depends on the post welfare outcome. We define a set of outcome states by identifying the main source of income for each individual. Mainly, we are interested in the group with a strong labor market attachment and the group we refer to as disconnected, for which we cannot identify the main source of financial support. Having a strong labor market attachment is meant to imply that the individuals have a yearly income from labor that is high enough for the individual to be self-sufficient. Someone who is disconnected is not receiving sufficient income from either labor work or social insurances, and is thus disconnected both from the labor market and welfare and social insurance programs.

Firstly, post welfare outcomes depend heavily on the state of the economy and the labor market. Those who left welfare at the start of the financial crisis in the early 1990's do worse, even in the long run, than those that left in the stronger economy a few years later, especially among those who received higher amounts of benefits prior to leaving welfare. This is probably driven by the fact that labor market attachment is important in order to experience an increase in disposable income, and it is harder to become a part of the stable labor force in a recession. Labor market attachment is particularly important for those who have been more dependent on benefits (that is, who have received higher amounts of welfare) and thus are probably further from the labor market initially. However, since only about one in ten welfare leavers with high previous benefits are able to support themselves through work the year after leaving welfare, these leavers on average have lower income than those that have been less welfare reliant.

Among those not having any attachment to the labor market when leaving welfare the majority seems to face difficulties to fully compensate for the lost social assistance benefits with other income. This is not surprising since there is, in practice, a tax rate of 100 percent on labor income when receiving social assistance. This means that welfare

benefits are discounted by the exact amount of the additional labor income (or any other type of income), so that before earning enough to completely replace the welfare income, disposable income will not be affected when increasing the number of hours worked.

Our analysis clearly shows that a financially successful exit from welfare, where disposable income increases and the risk of poverty is reduced, is most likely to be realized for those leaving welfare with a strong labor market attachment. Being able to support oneself through labor market work is an efficient insurance against future returns to welfare dependency and most leavers in this outcome are almost certain to experience an increase in disposable income. There is a clear distinction between those that leave welfare with a weaker labor market attachment, who work only part of the year, and those with a strong labor market attachment. Working only part time does not guarantee an increase in income, and cannot be seen as an insurance against future return to welfare. However, if a person with a weak labor market attachment does not return to welfare the connection to the labor market might be strengthened and thus lead to stable employment and better financial outcomes in the long run. This is indicated by the fact that the situation of those who initially have a weak and strong attachment to the labor market, respectively, have relatively similar long run financial outcomes.

The distinction between the initial outcomes are the same regardless of the state of the economy and the labor market situation, each post welfare outcome is associated with about the same probability of a higher income for individuals leaving welfare in the recession during the early 1990's as for those leaving welfare at the end of the decade, when the economy was stronger. That is, the relative gain in each post welfare outcome does not depend on the state of the economy, even though the level of post welfare income might vary over the business cycle. However, welfare leavers who are younger or born outside the OECD, suffer more in terms of financial situation during the recession than does the average welfare leaver, and their chances of a higher income also increases more when the economy is stronger. The differences between the groups are quite small, but are persistent and remain at least five years after the last year of benefit receipt.

It is important to note that while a strong labor market attachment leads to an improved financial situation, most welfare leavers do not have full time work. Rather, a large number of welfare leavers transition in to a state where they combine incomes in a way that makes it difficult to determine what their main source of support is, we refer to these as disconnected leavers. In this group, poverty is high and relative to the last year with benefit take-up, disposable income decreases when leaving welfare (at least initially). For some of these individuals it is the case that they leave welfare because their partner finds employment and the household income thus increases so that eligibility for welfare benefits is lost. Indeed, the labor income of those who have a partner who is disconnected is higher. This indicates that these leavers move from dependence on social assistance to being financially dependent on their spouse. However, being supported by a spouse does not seem to provide long term insurance form repeated welfare dependency, since the return to welfare participation is high among disconnected leavers. In this group around 32 percent receive welfare benefits again after five years, while among other leavers the corresponding figure is only around 12 percent. The low return rate for the last group is driven mostly by those who leave welfare with a strong labor market attachment and thus can support themselves through work.

We conclude that having a strong labor market attachment after leaving welfare is the only post welfare outcome that is associated with a strong financial improvement at the individual level both in the short and long run. Also, it is important to note that post welfare outcomes differ between those that are more or less dependent on welfare benefits, the heterogeneity of the welfare caseload is reflected in heterogeneous post welfare outcomes. Average welfare participants, who typically get only small amounts of benefits, are more likely to be completely self sufficient after ending benefit take-up whereas those who have been eligible for higher benefit levels face more difficulties in the labor market. It is also clear that while the majority of welfare leavers experience an increased disposable income, there is a substantial fraction whose income does not rise and who is still in poverty after leaving welfare.

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Appendix

In the appendix we present the results from the estimations interpreted as odds-ratios (exponentiated coefficients). These are the underlying coefficients that have been used to calculate the marginal effects presented in the *Table 5* through *Table 15*.

Table 17 Multinomial logit analysis of post welfare outcomes

	Strong labor force att	Weak labor force att	Sick leave benefits	Unemployment benefits	Student
			Panel 1: Definition 1 - previously receiving any benefits		
Baseline probability	0.449	0.087	0.135	0.179	0.179
Female	0.570***	1.030***	0.678***	0.739	1.036***
	(0.026)	(0.010)	(0.006)	(0.014)	(0.023)
Age<26	0.636***	2.208***	0.515***	1.099***	4.097***
	(0.029)	(0.053)	(0.011)	(0.035)	(0.124)
Born in outside the	0.745***	1.01***	1.409***	1.579**	1.878***
OECD	(0.032)	(0.030)	(0.034)	(0.068)	(0.081)
Single parent	1.649*	1.814***	1.439***	2.346***	1.520
	(0.021)	(0.036)	(0.021)	(0.035)	(0.041)
Compulsory schooling	0.434***	0.597***	0.834***	0.491***	0.330***
or less	(0.008)	(0.013)	(0.019)	(0.007)	(0.016)
Year FE	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
N	2,140,674	2,140,674	2,140,674	2,140,674	2,140,674
			Panel 2: Definition 2 - previously dependent on benefits		
Baseline probability	0.110	0.335	0.117	0.129	0.059
Female	0.470***	0.593***	0.596***	0.603***	0.906***
	(0.019)	(0.010)	(0.009)	(0.009)	(0.014)
Age<26	1.018***	1.676***	0.474***	0.889***	2.600***
	(0.025)	(0.032)	(0.011)	(0.025)	(0.073)
Born in outside the	0.706***	0.814***	0.741***	1.067**	1.276***
OECD	(0.042)	(0.031)	(0.022)	(0.065)	(0.058)
Single parent	1.104***	1.450***	1.031***	1.465***	1.851***
	(0.033)	(0.046)	(0.035)	(0.029)	(0.072)
Compulsory schooling	0.380***	0.634***	0.792***	0.445***	0.531***
or less	(0.013)	(0.012)	(0.013)	(0.009)	(0.014)
Year FE	Yes	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes	Yes
N	530,921	530,921	530,921	530,921	530,921

Multinomial logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 18 Probability of increased income

	Year 1	Year 2	Year 5	Year 10
	Panel 1: Definition 1 - previously receiving any benefits			
Strong labor market attachment	4.182***	3.155***	2.335***	1.951***
	(0.107)	(0.051)	(0.016)	(0.024)
Weak labor market attachment	1.794***	1.911***	1.748***	1.724***
	(0.015)	(0.018)	(0.022)	(0.030)
Sick leave benefits	0.944**	1.009	1.052	1.049
	(0.019)	(0.022)	(0.030)	(0.033)
Unemployment benefits	1.467***	1.435***	1.378***	1.280***
	(0.014)	(0.012)	(0.010)	(0.016)
Student	1.245***	1.144***	1.328***	1.364***
	(0.025)	(0.018)	(0.035)	(0.043)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	2,140,674	1,692,341	1,113,983	642,497
	Panel 2: Definition 2 - previously dependent on benefits			
Strong labor market attachment	13.799***	6.586***	3.399***	2.233***
	(0.685)	(0.241)	(0.175)	(0.121)
Weak labor market attachment	5.271***	3.825***	2.987***	2.537***
	(0.186)	(0.081)	(0.063)	(0.071)
Sick leave benefits	1.177***	1.102***	1.217***	1.200***
	(0.038)	(0.031)	(0.027)	(0.031)
Unemployment benefits	1.663***	1.414***	1.337***	1.198***
	(0.031)	(0.034)	(0.032)	(0.042)
Student	3.593***	2.090***	1.812***	1.767***
	(0.108)	(0.055)	(0.061)	(0.062)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	530,921	424,318	280,951	150,954

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 19 Probability of poverty

	Year 1	Year 2	Year 5	Year 10
	Panel 1: Definition 1 - previously receiving any benefits			
Strong labor market attachment	0.122***	0.198***	0.354***	0.378***
	(0.003)	(0.002)	(0.005)	(0.008)
Weak labor market attachment	0.969	0.967	1.103***	1.008
	(0.017)	(0.019)	(0.018)	(0.017)
Sick leave benefits	2.772***	2.686***	2.404***	1.844***
	(0.132)	(0.142)	(0.120)	(0.080)
Unemployment benefits	0.499***	0.660***	0.904***	0.907***
	(0.008)	(0.012)	(0.014)	(0.016)
Student	0.914**	1.411***	1.645***	1.336***
	(0.025)	(0.032)	(0.045)	(0.047)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	2,140,674	1,692,341	1,113,983	642,497
	Panel 2: Definition 2 - previously dependent on benefits			
Strong labor market attachment	0.055***	0.132***	0.300***	0.389***
	(0.002)	(0.004)	(0.007)	(0.012)
Weak labor market attachment	0.286***	0.427***	0.609***	0.663***
	(0.006)	(0.008)	(0.013)	(0.016)
Sick leave benefits	1.479***	1.519***	1.392***	1.131*
	(0.094)	(0.094)	(0.084)	(0.061)
Unemployment benefits	0.268***	0.413***	0.579***	0.610***
	(0.005)	(0.009)	(0.016)	(0.012)
Student	0.272***	0.583***	0.821***	0.794***
	(0.008)	(0.015)	(0.025)	(0.019)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	530,921	424,318	280,951	150,954

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 20 Probability of return

	Year 2	Year 5	Year 10
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	0.387***	0.158***	0.046***
	(0.004)	(0.003)	(0.002)
Weak labor market attachment	0.743***	0.209***	0.041***
	(0.005)	(0.004)	(0.001)
Sick leave benefits	1.112***	0.315***	0.104***
	(0.014)	(0.004)	(0.002)
Unemployment benefits	0.772***	0.251***	0.046***
	(0.010)	(0.005)	(0.002)
Student	1.427***	0.349***	0.050***
	(0.035)	(0.011)	(0.002)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	2,042,811	1,706,064	1,113,267
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	0.099***	0.151***	0.106***
	(0.005)	(0.004)	(0.003)
Weak labor market attachment	0.764***	0.203***	0.074***
	(0.023)	(0.004)	(0.001)
Sick leave benefits	1.106**	0.284***	0.126***
	(0.037)	(0.005)	(0.003)
Unemployment benefits	0.471***	0.167***	0.056***
	(0.016)	(0.003)	(0.002)
Student	1.424***	0.340***	0.078***
	(0.028)	(0.010)	(0.004)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	502,361	403,169	239,461

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 21 Probability of increased income, leavers 1992-1994

	Year 1	Year 2	Year 5	Year 10
		Panel 1: Definition 1 – all leavers		
Strong labor market attachment	3.189***	2.546***	2.264***	1.996***
	(0.093)	(0.062)	(0.027)	(0.036)
Weak labor market attachment	1.683***	1.769***	1.731***	1.785***
	(0.019)	(0.023)	(0.023)	(0.045)
Sick leave benefits	0.975	1.046***	1.099***	1.042
	(0.013)	(0.013)	(0.024)	(0.033)
Unemployment benefits	1.353***	1.256***	1.246***	1.262***
	(0.016)	(0.022)	(0.018)	(0.025)
Student	1.280***	1.178***	1.424***	1.585***
	(0.030)	(0.034)	(0.059)	(0.072)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	654,980	520,395	353,624	250,292
		Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	11.540***	5.574***	3.115***	2.044***
	(0.673)	(0.356)	(0.265)	(0.164)
Weak labor market attachment	5.243***	3.601***	2.877***	2.510***
	(0.282)	(0.170)	(0.113)	(0.104)
Sick leave benefits	1.403***	1.341***	1.440***	1.379***
	(0.060)	(0.054)	(0.045)	(0.059)
Unemployment benefits	1.619***	1.254***	1.130**	1.108*
	(0.048)	(0.058)	(0.046)	(0.048)
Student	3.695***	2.223***	1.801***	1.774***
	(0.229)	(0.108)	(0.123)	(0.108)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	104,864	85,015	60,791	44,065

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 22 Probability of increased income, leavers 1998-2000

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	4.615***	3.357***	2.410***
	(0.131)	(0.054)	(0.036)
Weak labor market attachment	1.674***	1.845***	1.628***
	(0.021)	(0.022)	(0.035)
Sick leave benefits	0.915**	0.975	0.985
	(0.027)	(0.029)	(0.034)
Unemployment benefits	1.545***	1.622***	1.536***
	(0.022)	(0.021)	(0.022)
Student	1.201***	1.129***	1.241***
	(0.031)	(0.027)	(0.045)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	598,675	503,498	369,608
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	14.202***	6.711***	3.533***
	(0.692)	(0.287)	(0.157)
Weak labor market attachment	5.372***	3.842***	3.009***
	(0.153)	(0.079)	(0.064)
Sick leave benefits	1.110*	1.007	1.076^
	(0.050)	(0.033)	(0.033)
Unemployment benefits	1.780***	1.531***	1.525***
	(0.046)	(0.046)	(0.046)
Student	4.005***	2.041***	1.707***
	(0.137)	(0.054)	(0.066)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	169,159	143,806	112,523

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 23 Probability of increased income, age<26

	Year 1	Year 2	Year 5	Year 10
	Panel 1: Definition 1 - previously receiving any benefits			
Strong labor market attachment	3.682***	2.427***	1.388***	0.971
	(0.148)	(0.103)	(0.034)	(0.032)
Weak labor market attachment	1.561***	1.686***	1.391***	1.255***
	(0.030)	(0.025)	(0.035)	(0.033)
Sick leave benefits	0.767***	0.832***	0.818***	0.771***
	(0.025)	(0.025)	(0.033)	(0.031)
Unemployment benefits	1.368***	1.298***	1.125***	0.975
	(0.023)	(0.021)	(0.021)	(0.026)
Student	1.206***	1.152***	1.147**	1.059
	(0.052)	(0.042)	(0.048)	(0.063)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	379,993	302,121	215,601	150,614
	Panel 2: Definition 2 - previously dependent on benefits			
Strong labor market attachment	12.658***	5.550***	2.640***	1.675***
	(1.267)	(0.395)	(0.235)	(0.173)
Weak labor market attachment	4.888***	3.369***	2.414***	1.924***
	(0.197)	(0.128)	(0.065)	(0.065)
Sick leave benefits	1.228***	1.098**	1.137***	1.097*
	(0.047)	(0.034)	(0.037)	(0.050)
Unemployment benefits	1.564***	1.252***	1.044	0.962
	(0.053)	(0.050)	(0.029)	(0.046)
Student	3.812***	1.996***	1.653***	1.602***
	(0.175)	(0.094)	(0.080)	(0.106)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	75,832	61,172	43,692	29,394

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 24 Probability of increased income, born outside the OECD

	Year 1	Year 2	Year 5	Year 10
	Panel 1: Definition 1 - previously receiving any benefits			
Strong labor market attachment	4.022***	2.758***	1.768***	1.552***
	(0.095)	(0.052)	(0.042)	(0.057)
Weak labor market attachment	1.648***	1.674***	1.397***	1.370***
	(0.028)	(0.039)	(0.034)	(0.053)
Sick leave benefits	0.682***	0.696***	0.785***	0.910*
	(0.010)	(0.015)	(0.031)	(0.039)
Unemployment benefits	1.407***	1.294***	1.150***	1.104**
	(0.032)	(0.021)	(0.037)	(0.034)
Student	1.263***	1.122***	1.098*	1.070
	(0.029)	(0.028)	(0.047)	(0.106)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	236,937	184,446	118,912	54,254
	Panel 2: Definition 2 - previously dependent on benefits			
Strong labor market attachment	11.569***	5.833***	2.749***	1.803***
	(0.536)	(0.265)	(0.105)	(0.165)
Weak labor market attachment	4.922***	3.240***	2.150***	1.725***
	(0.266)	(0.102)	(0.080)	(0.087)
Sick leave benefits	0.791***	0.712***	0.806***	0.805***
	(0.028)	(0.024)	(0.030)	(0.031)
Unemployment benefits	1.553***	1.267***	1.105**	0.970
	(0.043)	(0.046)	(0.034)	(0.067)
Student	3.794***	2.062***	1.481***	1.368***
	(0.158)	(0.078)	(0.056)	(0.064)
Controls	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes	Yes
N	112,343	90,167	64,639	35,430

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 25 Probability of increased income, leavers 1992-1994 age<26

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	3.088***	1.987***	1.178***
	(0.119)	(0.078)	(0.038)
Weak labor market attachment	1.463***	1.558***	1.255***
	(0.043)	(0.039)	(0.031)
Sick leave benefits	0.682***	0.762***	0.722***
	(0.023)	(0.025)	(0.023)
Unemployment benefits	1.218***	1.095***	0.928**
	(0.028)	(0.022)	(0.023)
Student	1.198***	1.111*	1.081
	(0.054)	(0.046)	(0.056)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	172,949	138,108	97,810
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	11.248***	4.786***	2.298***
	(0.963)	(0.379)	(0.241)
Weak labor market attachment	4.341***	2.800***	1.994***
	(0.198)	(0.111)	(0.085)
Sick leave benefits	1.182**	1.059	0.970
	(0.064)	(0.054)	(0.051)
Unemployment benefits	1.399***	1.024	0.737***
	(0.064)	(0.050)	(0.032)
Student	3.227***	1.851***	1.365***
	(0.191)	(0.112)	(0.080)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	28,899	23,344	16,896

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 26 Probability of increased income, leavers 1998-2000 age<26

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	4.106***	2.751***	1.745***
	(0.209)	(0.149)	(0.063)
Weak labor market attachment	1.518***	1.655***	1.391***
	(0.044)	(0.041)	(0.061)
Sick leave benefits	0.818***	0.886**	0.928
	(0.036)	(0.037)	(0.054)
Unemployment benefits	1.587***	1.672***	1.476***
	(0.042)	(0.048)	(0.053)
Student	1.178**	1.174**	1.120
	(0.064)	(0.057)	(0.079)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	95,539	79,728	58,009
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	15.842***	6.511***	3.230***
	(2.284)	(0.614)	(0.325)
Weak labor market attachment	5.903***	3.722***	2.689***
	(0.236)	(0.183)	(0.123)
Sick leave benefits	1.434***	1.238***	1.299***
	(0.079)	(0.070)	(0.076)
Unemployment benefits	2.008***	1.660***	1.469***
	(0.117)	(0.106)	(0.073)
Student	4.424***	1.977***	1.674***
	(0.283)	(0.133)	(0.214)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	21,390	17,972	13,403

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 27 Probability of increased income, leavers 1992-1994 born outside the OECD

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	3.013***	2.248***	1.713***
	(0.097)	(0.070)	(0.065)
Weak labor market attachment	1.571***	1.615***	1.425***
	(0.047)	(0.071)	(0.057)
Sick leave benefits	0.695***	0.750***	0.801***
	(0.021)	(0.024)	(0.035)
Unemployment benefits	1.307***	1.124***	0.981
	(0.032)	(0.035)	(0.040)
Student	1.165**	1.108	1.215*
	(0.063)	(0.077)	(0.101)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	59,906	46,377	29,083
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	8.613***	4.998***	2.532***
	(0.611)	(0.421)	(0.293)
Weak labor market attachment	4.318***	2.914***	2.082***
	(0.341)	(0.182)	(0.140)
Sick leave benefits	0.772***	0.780***	0.813***
	(0.050)	(0.049)	(0.050)
Unemployment benefits	1.443***	1.146*	0.898
	(0.049)	(0.068)	(0.079)
Student	3.472***	2.124***	1.473**
	(0.241)	(0.116)	(0.193)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	22,321	17,803	12,584

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

Table 28 Probability of increased income, leavers 1998-2000 born outside the OECD

	Year 1	Year 2	Year 5
	Panel 1: Definition 1 – all leavers		
Strong labor market attachment	4.443***	2.819***	1.658***
	(0.149)	(0.060)	(0.057)
Weak labor market attachment	1.540***	1.561***	1.313***
	(0.040)	(0.046)	(0.049)
Sick leave benefits	0.632***	0.662***	0.727***
	(0.016)	(0.017)	(0.042)
Unemployment benefits	1.405***	1.333***	1.200***
	(0.044)	(0.041)	(0.045)
Student	1.201***	1.128**	1.008
	(0.062)	(0.049)	(0.070)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	80,978	66,941	47,510
	Panel 2: Definition 2 – leavers with high previous benefits		
Strong labor market attachment	12.115***	5.900***	2.700***
	(0.769)	(0.362)	(0.143)
Weak labor market attachment	4.904***	3.223***	2.107***
	(0.215)	(0.113)	(0.111)
Sick leave benefits	0.758***	0.687***	0.785***
	(0.035)	(0.028)	(0.042)
Unemployment benefits	1.574***	1.284***	1.197***
	(0.072)	(0.070)	(0.063)
Student	3.739***	1.893***	1.324***
	(0.151)	(0.070)	(0.068)
Controls	Yes	Yes	Yes
Year FE	Yes	Yes	Yes
Municipality FE	Yes	Yes	Yes
N	46,566	39,033	30,343

Logit estimates, exponentiated coefficients
Standard errors in parentheses, clustered on municipality
* p<0.05, ** p<0.01, *** p<0.001

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