The Impact of Active Labor Market Policies and Benefit Entitlement Rules on the Duration of Unemployment

Rafael Gisin*, Jan C. van Ours† and Josef Zweimüller‡

April 29, 1999

Preliminary Version

Abstract

We evaluate the effect of active labor market programs on the duration of unemployment in a reward or punish system. In Switzerland, unemployment benefits are conditional upon program attendance after 7 months of unemployment duration. We control for unobserved heterogeneity by specifying unemployment exits program starts as two dependent processes. Our preliminary results indicate that for repeated unemployed programmes reduce unemployment durations. However, on average we find that programmes prolong unemployment duration.

Keywords: effect of training, treatment effect, bivariate duration model
JEL Classification: C14, C41, J64

*IEW, University of Zurich, Blümlisalpstr. 10, 8006 Zürich, Switzerland, e-mail: rgisin@iew.unizh.ch

†CentER, Department of Economics, Tilburg University, CEPR and Institute for Labor Studies (OSA), email: vanours@kub.nl

‡IEW, University of Zurich and CEPR, email: zweim@iew.unizh.ch.

1 Introduction

There is an increasing consensus among policy makers that actively assisting the unemployed in job search is preferable to simply providing them with passive income support. The danger is that reliance on passive income support may reduce work incentives and job-search activities and therefore increase the risk of long-term unemployment. Active labor market policies (ALMPs) are seen by many as the key to minimize these risks. Despite the agreed importance of ALMPs the success of the adopted programs has been rather mixed. One potentially important factor for the effectiveness of ALMPs may be the way in which benefit recipients are treated during the various stages of their unemployment spell. In particular, the obligations that go hand in hand with entitlement to unemployment insurance benefits (UIBs) and the degree to which these obligations are strictly enforced should be an determinant of the success of an ALMP-measure. As a result, many countries are discussing and/or implementing 'activity tests' to enhance the effectiveness of these measures.

The aim of the present paper is to study the impact of active labor market policies (ALMPs) on the duration of unemployment in Switzerland. The Swiss case is of interest because Switzerland has gone particularly far in activity testing by adopting new rules that link benefit eligibility closely to participation in ALMP-measures. According to the second revision of the national unemployment insurance act (AVIG), enacted in 1997, unemployed individuals are *unconditionally* entitled to UIBs only for a total of seven months in the course of their unemployment spell. For an additional 17 months benefit payments are *conditional* upon participation in an ALMP-measure. After a 'framework period' of 24 months is expired, an individual has to rely on social assistance provided by local authorities.

As mentioned by the OECD (1996), the new Swiss unemployment insurance system is very ambitious and - from an international perspective - unique. While other, in particular Nordic, countries apply measures, that require the unemployed to enter programs in order to be entitled to UIBs, the Swiss rules are different in two important respects. First, the intervention takes place at a rather early stage of the unemployment spell, after seven months. Secondly, UIB payments are strictly conditional upon ALMP-participation and this participation does not lead to a new (unconditional) benefit entitlement.

There are several other reasons why it is interesting to study the Swiss case. Switzerland has had a very distinct unemployment experience. The Swiss unemployment problem started not before the 1990s, which turned out as a decade of economic stagnation and increasing labor market problems. Before 1990, the Swiss labor market was a lucky island characterized by a negligible unemployment rate surrounded by neighbors with high and persistent joblessness. Within a period of three years, from 1990 to 1993, the unemployment rate rose from 0.5 % to 4.5 %. Over the same period, the fraction of long-term unemployed increased from about 5 % to 25 % (Sheldon, 1998). In 1997 the unemployment rate reached a high of 5.2 % together with a share of long-term unemployed of more than 30 %. While these figures are still low by continental-European standards, their increase within such a short period of time, raised the concerns of the public and policy makers alike. The reaction of the Swiss government was to introduce ALMPs on a very large scale: In 1997 one out of two individuals who experienced an unemployment spell participated in a program.. It is per se interesting whether this heavy use of ALMPs has reached its goal reducing the average duration of unemployment. Moreover, in 1998 the unemployment rate went down to3.9 % from 5.2 % in 1997. This reduction coincided with the implementation of economy-wide ALMP-measures. It is therefore suggestive to ask whether these ALMP-measures could have contributed to this decrease in the unemployment rate.

The question how participation in ALMP-measures affects labor market histories of individuals has been the subject of substantial debate over the last years. In this literature the main problem usually concerns the possible endogeneity of ALMP-participation. The problem is that labor market outcomes for participants may be systematically different for non-participants for reasons (other than ALMP-participation as such) that are unobservable to the researcher. This is the well-known selection problem. In Switzerland, like in most European countries, but unlike in the U.S., randomized social experiments are uncommon, so one has to deals with non-experimental data. With such data, the conventional procedure is to model the mechanism that determines selection into a training program together with the process of exit from unemployment.

The present paper employs the 'timing-of-events' method used in several studies (Abbring, Van den Berg and Van Ours (1997), Van den Berg, Van

der Klaauw and Van Ours (1998), Van den Berg, Holm and Van Ours (1999) and Lubyova and Van Ours (1999)). This approach is similar in spirit to the above mentioned conventional approach but goes beyond it in two important respects. First, while the most part of the literature is concerned with a binary treatment framework - participation yes or no - this approach explicitly makes use of the information contained in the timing of the treatment. A treatment can be started at different points of time during an unemployment spell. Variation in the timing of the treatment can be exploited to identify the (causal) treatment effect. Secondly, identification of the treatment effect does neither rely on a conditional independence assumption nor is it necessary to have a valid instrument.[1] Given that economic theory does not suggest a natural instrument, this is a particularly useful feature of this approach.

We use a new data set covering all entrants into unemployment in Switzerland over the three-months period 09/97 until 11/97. The data come from administrative records and contain detailed information not only on a standard set of individual characteristics but also on the timing and duration of ALMP-participation. The large sample size allows us to estimate the treatment effect for different ALMP-measure and/or different sub-populations allowing for maximum interaction between the various explanatory variables. This is important since the various ALMP-measures are likely to have a different impact on different groups of individuals.

The plan of the paper is as follows. In the next section we describe the Swiss labor market policy in more detail and review previous studies on unemployment duration and ALMP-effects in Switzerland. In Section 3 we provide specific information on our data set and show descriptive statistics as well as some graphical information on the exit process from unemployment in connection with ALMP-participation. Section 4 describes the used methodology and points to the assumptions that are necessary to interpret the estimated impact of ALMP-measures as a causal treatment effect. The results of our analysis are presented in Section 5. Section 6 concludes.

[1] The matching approach to evaluation invokes the conditional independence assumption.

2 Labour market policy and unemployment duration in Switzerland

Due to the absence of any serious unemployment problem, there was no need for a labor market policy in Switzerland in previous decades. Even the compulsory unemployment insurance was introduced not before the aftermath of the first oil shock which hit Switzerland particularly hard. Coverage was expanded further with the enactment of the national unemployment insurance act (AVIG) in 1984. This law guaranteed a maximum entitlement to unemployment benefits of 50 weeks provided that one had been employed and had contributed to the insurance system for at least 6 months within the last year prior to the unemployment spell. Active labor market policy measures were practically non-existent.

When unemployment started to rise in the early 1990s, the government's reaction was the introduction of more generous rules of unemployment benefit eligibility. In 1992 and 1993 entitlement to unemployment benefits was increased successively to a maximum of 80 weeks. At the same time one needed to have been employed and contributed to the system still for at least 6 months, but now within the last 24 months prior to unemployment.

The new law constituted a radical change away from passive income maintenance towards active measures aiming at a rapid integration and/or reintegration of job seekers.. This is strongly reflected in aggregate ALMP-expenditures.. In 1990, the total expenditures for ALMP-measures amounted to about 16 Mio SFr (10 Mio Euro), whereas in 1997 this amount had risen to more than 1,600 Mio SFr, or about 0,5 % of GDP.

The policy changes concerned both passive and active measures. On the passive side, entitlement to benefits was increased to a maximum of 104 weeks. One requirement to qualify for this maximum period was, that the individual has been employed and had contributed for at the least 12 months within the 24 months prior to the unemployment spell. Furthermore, a job-seeker may decline a job-offer without loosing benefits, provided that the offered employment was not a 'suitable job'. An important part of the new law is a tighter definition of what is considered as 'suitable'. Work which pays 70 per cent of previous earnings is regarded as 'suitable' and has to be accepted by the job-seeker. Even a job that pays less than 70 per cent has to be accepted but then the job-seeker can claim limited earnings

support ('intermittent pay compensation'). Moreover, the maximum period of benefit sanctions for uncooperative behavior has been increased from 40 to 60 days.

The most significant and ambitious changes, however, took place on the active side. First, the new law lead to the creation of regional placement offices. The objectives of these offices is to provide services to both job seekers and employers. In particular, to keep a close contact with job-seekers and try to reintegrate them in a 'fast and lasting' way. Human resource consultants should be assigned between 75 and 150 unemployed at the employment offices are expected to meet once a month for a in-depth personal interview with each job-seeker. This is rather ambitious and matched only be few other European countries (OECD, 1996, Curti, 1998).

Secondly, the new law obliged the Swiss cantons to supply a minimum number of ALMP-places per year. Economy-wide, these requirements add up to a stock of 25,000 places. This compares to an average stock of unemployment in 1997 of about 188,000 individuals. In 1997, about 390,000 individuals experienced an unemployment spell. From these, about 210,000 or more than 50 % participated in a program.

Thirdly, and certainly the most radical step, the new law created a close link between unemployment entitlement and participation in an active measure. For a newly unemployed the maximum entitlement period amounts to 104 weeks.[2] This period of 104 weeks is divided into two different parts. For at most 30 weeks the job-seeker can receive UIBs, unconditional upon participation in an active measure. For the remaining 74 weeks UIBs are paid only if the unemployed is participating in a measure.[3] An unemployed individual can be forced to enter an active measure after 30 weeks of unconditional UIB-payments, otherwise he looses his entitlement. However, the timing of the conditional and unconditional UIB-period is to some extent at the discretion of the job-seeker. He can choose freely to enter a program within the first 30 weeks of unemployment, thus postponing the unconditional benefit-payments to a later stage in the unemployment spell.

[2]The maximum entitlement period is substantially longer for older workers whereas for younger job-searchers it amounts to 7 months.

[3]The actual application of this rule is not as rigid and mechanic. If no appropriate ALMP-slots are available for an unemployed worker whose unconditional entitlement is exhausted, the unemployed continues to receive benefits without participating in a measure.

For instance, if the job-seeker decides to take part in a 5-week measure after having received UIBs for 20 weeks, then the remaining unconditional UIBs-weeks amount to 10 (=30 minus 20) weeks, whereas the remaining conditional UIBs-weeks amount to 69 (= 74 minus 5) weeks. To become eligible to the maximum entitlement period of 104 weeks, a job-seeker has to participate in some ALMP-measure. After the framework period of 24 months has expired, the job-seeker has exhausted UIB-entitlement and has to rely on social assistance.

The above entitlement regulation holds for an individual who has been employed and contributed to the insurance system for at least 12 within the last 24 months. For such person a new 'framework period', amounting to 104 weeks of conditional and unconditional UIB-entitlement starts with the beginning of the spell. The situation is different for an individual who becomes repeatedly unemployed within that framework period. In that case, UIB-entitlement depends on the previous unemployment spell and UIB-history counts. With respect to UIB-entitlement, the new spell is treated as if the old unemployment episode would continue.

It may be helpful to consider the various possible cases two possible unemployment histories in Figure 1. *Individual 1* is unemployed for 70 weeks. During the first 30 weeks does not attend programs and enjoys UIB-payments. After week 30 she has to attend a program to get further UIBs. *Individual 2* is also unemployed for 70 weeks, but attends a programs during weeks 20 to 70 and gets a job thereafter. The job of both individuals turns out to be not stable and both reenter the unemployment register in week 90. Both individuals are still within their original 'framework period' since neither of them satisfies the necessary employment and contribution requirement. However, *Individual 2* is still entitled to 10 weeks of unconditional UIB-payments, whereas for *Indivdiual 1* UIB-payments are conditional upon program-participation. The distinction between individuals starting a new framework period and those who are still in their original framework period when starting a new unemployment spell will become important in the empirical analysis below.

After an unemployment spell starts the individual cannot start immediately to collect benefits. Instead, there is a 'waiting time' of one or two weeks. This waiting period is longer for young school leavers who have not yet contributed to the insurance system. They have to wait for 6 months

before they can collect unemployment benefits. This gives them an incentive to attend a special type of subsidized job, the "motivation semester". Participating in that program guarantees them earnings equivalent to an apprenticeship salary right from the start of the unemployment spell.

For obvious reasons, studies on the duration of unemployment in Switzerland are scarce and studies on the impact of ALMP-measures do not yet exist.[4] Among the few papers focusing on the exit process from unemployment are Sheldon (1989, 1990) who analyzes the pre-1990 experience and finds no evidence for duration dependence. Gerfin and Schellhorn (1995) focus on the the years 1991-1994 using data from the Swiss Labour Force Survey. Their findings indicate that older and less qualified individuals have a lower transition rate from unemployment to employment. No significant differences are found between men and women, as well as between Swiss and non-Swiss individuals. Moreover, there are significant regional differences. They do not find any negative duration dependence. In a recent study, Sheldon (1998) confirms that age and qualification are significant determinants of the exit rate from unemployment. However, in this study it turns out that there is strong negative duration dependence. Sheldon (1998) covers the period 1990-95 and uses administrative data from the Swiss unemployment office.

3 Data

The data set on which our empirical analysis is based, covers all entrants into unemployment over the period September 1997 to November 1997 in Switzerland. The data come from administrative records of the Office for Economic Development and Labour (AVAM- and ASAL-data base) and follows these individuals up the end of December 1998. 56,063 individuals started an unemployment spell during 09/97 to 11/97. From these data we excluded all individuals for whom AVAM stock- and flow-data contain contradictory information. This concerns primarily the very short-term unemployed. We then ended up with about 48,000 observations of which 38,310 received unemployment benefits, the remaining job-seekers were either not entitled or their records do not show any benefit payments over the ob-

[4] Currently, several groups of researchers - among them the authors of the present paper - are independently evaluating the impact of Swiss ALMP-measures.

served period. Since our focus is on the impact of UIB-rules in connection with ALMP-participation our focus in the empirical analysis is on UIB-recipients.. Our econometric estimates are based on a 20 % sample of these, resulting in 7662 observations for the whole sample.

The data contain a limited number of individual characteristics - like gender, citizenship, age, qualification, type of last job, labor market status before unemployment, family status, among others. Table 1 presents the descriptive statistics for all benefits recipients separate for ALMP-participants in training courses and employment-programs as well as non-participants. As can be seen from Table 1, there is substantial variation in ALMP-participation across the various groups. Selection into training has to account for this observed heterogeneity.

Table 1: Descriptive Statistics for Participants and Non-Participants

The various ALMP-measures supplied by the regional placement offices can be divided into five broad categories: (i) courses to improve basic skills (aiming at improving the effectiveness of individual job search and self-esteem), (ii) language courses (mostly offered to non-Swiss unemployed), (iii) computer courses (basic word processing and spreadsheet calculation), (iv) other skills, and (v) employment programs and subsidized jobs.

Table 2 shows the distribution of all 13,178 ALMP-participants (who were eligible to unemployment benefits) across these broad categories. We chose to examine the effect of the first ALMP an unemployed entered which lasted for at least one week, because evaluating multiple program attendance would have been very cumbersome.

Courses to improve basic skills make up 28.3 % of all measures - more than a third of all supplied courses. Somewhat more than 20 % of all measures are language courses. Computer courses and the category 'other courses' each account for about 15 % of all measures[5], where somewhat more than 20 % of all measures are employment programs or subsidized jobs.

Table 2: Descriptive Statistics of the Active Labor Market Programmes

[5]They include specific computer training, business administration, technical training, trainee-ships, financial aid for setting up your own business - this is a group of very heterogeneous, but each quantitatively relatively small programmes.

4 The empirical model

In order to establish the effect of ALMP-jobs and retraining on the exit rate from unemployment to a regular job we have to set-up a model that accounts for possible selectivity in the inflow into the programs of active labor market policy. In our model we exploit information with respect to the duration of unemployment, the duration of the stay in an ALMP-program and the destinations after that (see Lancaster (1990) for an overview of methods of duration analysis).

From an econometric point of view the problem we analyze is similar to that in Van den Berg, Holm and Van Ours (1998). In this paper an analysis is presented of a part of the Dutch medical system. In the Netherlands, to become a medical doctor, students with an undergraduate medical degree have to apply for a trainee position. While searching for a trainee position they may accept a temporary job as a medical assistant. The paper by Van den Berg, Holm and Van Ours (1998) uses a micro data set to investigate whether accepting such a temporary job speeds up the process of finding a trainee position. A major problem is the possible endogeneity of the temporary job, since the enrollment into such a job may be selective. To account for possible selectivity, they simultaneously model the transitions from unemployment to medical trainee, from unemployment to medical assistant, from medical assistant to medical trainee and from medical assistant to unemployment. By allowing for correlation between unobserved heterogeneity in the various transition rates they account for possible selectivity, which indeed turns out to be important. Overall, they find that a job as medical assistant is improving the speed by which medical undergraduates find a trainee position.

Other examples of the use of similar multivariate duration models are Abbring, Van den Berg and Van Ours (1997) and Van den Berg, Van der Klaauw and Van Ours (1998). In these studies the effect of benefit sanctions on the transition rate from unemployment to employment is modeled. Here too, the issue of selectivity is very important. Again, selectivity is accounted for by modeling both the exit rates out of unemployment and the rate by which unemployed get a sanction imposed and investigate the correlation between the unobserved heterogeneity terms. Both studies find a significant positive effect of benefit sanctions on the transition rate from unemployment to a job. In the study by Van den Berg, Van der Klaauw and Van Ours (1998)

it is shown that if unobserved heterogeneity is not accounted for, no effect of sanctions is found.

A final example is Lubyova and Van Ours (1999) in which the system of active labor market policies in the Slovak Republic is investigated. The treatment system consists to a large extent of the creation of socially purposeful and publicly useful jobs and of retraining unemployed workers. Again, the main issue is whether the inflow into the treatment program is selective. Lubyova and Van Ours find that selectivity is important. If in the estimation selectivity is not accounted for a negative treatment effect is found. If selectivity is accounted for a positive effect is found.

Generally, in the multivariate duration models the variation in the durations at which treatment is administered to individuals, and data on the corresponding pre- and post-treatment durations can be exploited to identify the treatment effect. A formal proof of this is given in Abbring and Van den Berg (1998).

The set-up of our model is similar to the one used in the paper by Lubyova and Van Ours (1999). The starting point of the analysis of the Swiss labor market data is **Model 1,** a proportional hazard model with a flexible baseline hazard. Differences between unemployed individuals in the transition rate from unemployment to a job can be characterized by the observed characteristics x, the elapsed duration of unemployment itself, and a variable indicating whether or not the individual started in a training program (= course) . If t_a is the time at which the individual starts participating in a training program and $I(t_a < t)$ is the dummy variable indicating whether the individual has already started participating, the transition rate from unemployment to a job at time t conditional on x and t_a can be specified as follows:

$$\theta_j(t;x) = \lambda_j(t) \cdot \exp(x'\beta_j + \delta \cdot I(t_a < t)) \tag{1}$$

where $\lambda_j(t)$ represent individual duration dependence and d measures the effect that participation in a training program has on the transition rate from unemployment to a regular job. We model flexible duration dependence by using a step function

$$\lambda_j(t) = \exp(\Sigma_k(\lambda_{j,k} \cdot I_k(t)) \tag{2}$$

where $k(= 1, .., 4)$ is a subscript for time-intervals and $I_k(t)$ are time-

varying dummy variables that are one in subsequent time-intervals. We distinguish four time intervals: 1-4 months, 4-8 months, 8-12 months and 12+ months. Because we also estimate a constant term, we normalize $\lambda_{j,1} = 0$.

The basic assumption in **Model 1** is that the inflow into the training program is a random process in the sense that it is independent of the process by which unemployed find jobs. The selection into the program is exogenous and does not depend on unobserved characteristics that also affect the job finding rate. In other words, conditional on observed characteristics and the duration of unemployment the quality of the unemployed flowing into a training program is as good (or as bad) as the quality of the unemployed that remain unemployed. Then, if We measure an effect of a training program ($\delta \neq 0$), this is a 'true' effect. This effect could go both ways. If $\delta < 0$ the training program has a negative effect on the re-employment hazard, which could be caused by stigmatization. If $\delta > 0$ the course-participants have a higher exit rate to a job than the non-participants. Note that in the specification of the hazard in equation (1) the effect of a training program occurs immediately. Also note that we consider the duration of a stay in a training program as an extended unemployment duration. This concept may not coincide with the official statistics but we take the point of view of labor economists: a person is unemployed until he or she finds a job or leaves the labor market.

The density of completed unemployment durations is simply:

$$f_j(t) = \theta_j(t;x) \exp(-\int_0^t \theta_j(s;x)ds) \tag{3}$$

In a similar way we model the transition rate to a training program at time t conditional on observed characteristics x as:

$$\theta_a(t;x) = \lambda_a(t) \exp(x'\beta) \tag{4}$$

where $\lambda_a(t) = \exp(\Sigma_k(\lambda_{a,k} \cdot I_k(t))$ and the normalization is $\lambda_{a,1} = 0$. The density of completed duration of 'search' for a training program is equal to:

$$f_a(t) = \theta_a(t;x) \exp(-\int_0^t \theta_a(s;x)ds) \tag{5}$$

Then, the log-likelihood of Model 1 is specified as:

$$lnL = d_1 \Sigma log(f_j(1-F_a)) + d_2 \Sigma log(f_j f_a) + d_3 \Sigma log(1-F_j) f_a \qquad (6)$$
$$+ d_4 \Sigma log(1-F_j)(1-F_a)$$

where d_1 is a dummy variable with a value of 1 if the unemployed did not participate in a training program but still found a job, d_2 is a dummy variable with a value of 1 if the unemployed participated in a training program and then found a job, d_3 is a dummy variable with a value of 1 if the unemployed participated in a training program but did not find a job and d_4 is a dummy variable with a value of 1 if the unemployed neither participated in a training program nor found a job. Note that we could have estimated the parameters of both hazard rates separately since the likelihood factorizes.

In **Model 2** we allow for unobserved heterogeneity to affect the transitions to both a job and to a training program:

$$\begin{aligned} \theta_j(t;x,u) &= \lambda_j(t)\exp(x'\beta + \delta I(t_a) + u) \qquad (7) \\ \theta_a(t;x,u) &= \lambda_a(t)\exp(x'\beta + v) \end{aligned}$$

where u and v are the components of unobserved heterogeneity in the transition rates to a regular job and to a training program. Now we can allow for selectivity in the inflow into a training program. If the unobserved characteristics have a negative effect on the job finding rate and a positive effect on the transition rate to a training program, then conditional on the observed characteristics and the elapsed duration of unemployment the average quality of the workers in a training program is lower than the average quality of workers who do not enter a training program. Then, if we would simply compare the transition rates to regular jobs of both groups we would compare workers with unfavorable characteristics and training with workers with more favorable characteristics and non-training. Therefore, we would underestimate the true effect of participating in a training program. The opposite effect is also possible. One could imagine that the people in control of the training programs want their programs to be a success. Therefore they prefer workers with good characteristics to flow into their program. This would imply that there is a positive correlation between the unobserved heterogeneity components in both transition rate. Then, we would overestimate the effect of training programs.

We define $G(u, v)$ to be the joint distribution of the unobserved characteristics u, v. Then, the joint density function of t_j, t_a conditional on x equals

$$f_{j,a}(t_j, t_a|x) = \int_u \int_v f_j(t_j|x, u, t_a) f_a(t_a|x, v) dG(u, v) \tag{8}$$

We assume G to be a discrete distribution of unobserved heterogeneity. Work by Heckman and Singer (1984) suggests that discrete distributions can approximate any arbitrary distribution function G. We assume that G has two points of support $(u_a, v_a), (u_b, v_b)$. The associated probabilities are denoted as follows:

$$Pr(u = u_a, v = v_a) = p \quad Pr(u = u_b, v = v_b) = 1 - p \tag{9}$$

where $0 \leq p \leq 1$. We modeled $p = \exp(\alpha)/(1 + \exp(\alpha))$ to have a logit specification. The set-up of the likelihood is similar to the one presented in equation (6). However, because of the introduction of unobserved heterogeneity it is not possible to factorize the likelihood.

5 Results

In this section, we discuss the effect of active labor market programs on the transition rate from unemployment to jobs. We start by presenting results for a 20 % sample of the unemployment inflow 09/97 to 11/97 in Switzerland. We then discuss the results for interesting subgroups.

The first interesting subgroup are individuals who suffered a repeated unemployment spell within their 24 months 'framework period' and thus have already used up part of their unconditional benefit entitlements. This group is of particular interest because it allows us to take a closer look at the impact of the activity test on the transition rate from unemployment to a job.

The applied ALMP-policies are targeted towards specific groups. For instance, language courses are predominantly attended by foreign workers. Similarly, employment programs are attended predominantly by the young unemployed. Young as well as non-Swiss workers represent specific problem groups on the Swiss labor market. The empirical analysis below will therefore analyze the impact of ALMP-measures separately for these two groups.

5.1 The Effect of ALMPs on Unemployment Duration

Table 3 shows the results for 20 percent sample for all unemployment entrants. Columns 1 and 2 show the results for Model 1, where we assume that selection into courses and the duration of unemployment are two independent processes and that there is no unobserved heterogeneity. Colums 3 and 4 show the results for Model 2, where these restrictions are no longer imposed. Both models account for possible duration dependence both in the process of ALMP-access and transition to a job by allowing the corresponding hazard rates to shift over the course of the unemployment spell.

Treatment effect. The results in Table3 draws a very negative picture on the success of the Swiss ALMP-measures. Model 1 estimates that ALMP-participation lowers the transition rate to a job by about 14 per cent. In Model 2 the situation is even worse, the hazard rate shift by more than 30 per cent. It turns out that there is significant heterogeneity both with respect to the transition from unemployment to a job and with respect to the inflow into ALMP-measure. This is indicated by the estimates of the points of support of the distribution of unobservables. The coefficient 'Alpha' estimates the probability that a randomly chosen individual belongs to Type a to somewhat more than 90 %.[6] In the job-hazard it turns out that there is a big difference between the two groups. Type a are those who find jobs relatively quickly, whereas Type b have no chance to find a job. The ALMP-inflow rate is relatively high for Type a and low for Type b workers. Therefore, we find positive selection: those who find jobs more quickly are also more likely to enter an ALMP-measure. This also explains why the treatment effect is even worse in Model 2 as opposed to Model 1. Once we account for heterogeneity, conditional on observed characteristics and the elapsed duration of unemployment, workers who enter a program have better characteristics than workers have who did not enter a program.. So Model 1 overestimates the treatment effect.

So far,the analysis is incomplete since several potentially important aspects have not yet been taken into account. First, the specification in Table 3 assumes that all ALMP-measures have the same effect on the exit rate. However, it could well be that some courses have a different impact than others. Moreover, this specification assumes that the treatment effect is

[6]Recall that $\Pr(u = u_a, v = v_a) = \exp(\alpha)/(1 - \exp(a))$.

equal irrespective of the timing the ALMP. However, it could well be that the treatment effect according to whether an individual enters an ALMP voluntarily (before unconditional benefit eligibility expires) or whether this happens to ensure continued benefit payments.

Table 4 contains the estimates for the treatment effect when we do no longer impose the above two restrictions. The upper panel of Table 4 shows the results once we allow the treatment effect to vary across ALMP-types. Here it turns out that the point estimate of the treatment effect is still negative for all 5 ALMP-types. However, there are significant differences between ALMP-types. For instance, language courses and employment programs have a strong negative impact on the chances to find a job. Basic courses and the rather heterogeneous group of 'other courses' also show a significantly negative impact, but the impact is somewhat smaller. Computer courses are the only measures that do not prolong unemployment duration.. The lower panel of Table 4 allows for the separate treatment effect according to benefit entitlement. Again it turns out that irrespective of the timing, ALMP-participation has a significantly negative impact on the transition rate from unemployment to a new job. The point estimate, however, is somewhat smaller for those who enter a program in the early stage of the unemployment spell.

A possible explanation for the negative treatment effect is that it is estimated under the assumption that the treatment starts immediately and goes on forever[7]. However, we have to investigate whether the treatment effect is constant and starts immediately. It could be that unemployed workers stay some sort of minimum time in a program so that the exit rate to a regular job is zero during the initial period and positive afterwards. Then, the size of the treatment effect increases of the duration of the treatment. Or, it could be that workers get stigmatized if they stay in a program too long so that the exit rate to a regular job, and thus the treatment effect decreases over time. We investigate the possibility of duration dependence in the treatment effect by allowing the effect of the program to change over time.

The bottom panel of Table 4 presents the impact of the treatment effect once we let the treatment effect be different *during* and *after* ALMP-

[7]Technically: it is specified as a time-varying dummy variable that takes the value one from the point of time when the participant *enters* the program.

participation. Here it turns out that the exit rate from unemployment to a job is particularly low during attendance of a program.. However, the exit rate after the end of the program is not significantly different from the one for an otherwise identical non-participant with the same elapsed unemployment duration. This result explains the puzzle of the negative treatment effect: there is a trade-off between searching and training. On the one hand, ALMP-participants have a lower exit rate, because they have no time to search during participation. On the other hand, there is no impact of participation on the duration of unemployment after the end of the program.. The average effect is a longer duration for ALMP-participants because participation in a program is time consuming.

Duration dependence. The results in Table 3 account for possible duration dependence by allowing the two hazard rates to shift over the course of the unemployment spell. The estimated exit rate from unemployment starts at a relatively low level and is particularly high between a duration of 4 to 8 months of unemployment. Thereafter, there is negative duration dependence. Also the entry rate into ALMP-measures is highest during the interval 4 to 8 months. Thereafter, the inflow rate into ALMP-measures drops again rather strongly and is not significantly different from the inflow rate during the initial 4 months of the unemployment spell. The latter result is striking. We would expect that individuals with an elapsed unemployment duration of 9 months or more have to enter program, given the activity test rules specified by the law. However, there are two reasons why this need not be the case. First, ALMP-participation during the first seven months leads to delay the period when UIB payment are activity tested. Secondly, and perhaps more importantly, whether or not an individual will actually be forced to enter a program does also depend on the supply of measures. These results indicate that the regional employment offices apparently are not (yet) in a position to provide the necessary supply of ALMP-slots.

Control variables. Table 3 also shows the results for the impact of a number of control variables on the exit rate to a job and to an ALMP-measure. It turns out that accounting for unobserved heterogeneity does not change the influence of the various determinants of the two processes.

The job chances of foreign workers is worse than that for the native Swiss. Our results indicate that exit rates for non-Swiss workers are about

20 % lower than those for natives. A possible explanation is the access to jobs for non-Swiss workers is more difficult due to immigration legislation; firms that want to hire foreign workers have to prove that no Swiss worker is available who could do the job. Alternatively, this could be a result of discrimination. Interestingly, citizenship does not make a difference with respect to entrance into ALMP-measures.

While the overall unemployment rate of women is well above the unemployment rate for men (in 1997: 5,7 % for women, 4,9 % for men), our results suggest that there is no difference with respect to unemployment duration. The higher female unemployment rate must therefore be due to a higher risk (or a higher frequency) of becoming unemployed. Moreover, we do not find a significantly different process for men and women with respect to training access.

The older the unemployed worker the lower his or her chances to find a job. This stylized fact is also clearly represented in the Swiss labor market. The exit rate is particularly low for the group older than 45. While there is no difference in the entry-rate to training between young and prime-age individuals, the older unemployed are significantly less likely to enter an ALMP-measure.

There is some indication that the family background is important to explain unemployment exits, but not entry to training. Individuals who are married are less likely to find a job. We do not find a significant effect of the presence of dependents (predominantly children), neither on the exit rate to jobs nor on entry rate to ALMP-measures.

We also included earnings in the last job as a potential determinant of unemployment exit and training access. Individuals who earn a higher wage have a somewhat better chance to find a new job. However, such an effect is only present for individuals with a relatively high previous wage and once we account for heterogeneity. Interestingly, earning a higher wage significantly increases the likelihood to enter a program.. Note that the estimated impact of the previous wage is conditional on the replacement rate. The replacement rate itself is of no importance to explain the exit rate from unemployment. This is in conformity with the view the impact of the unemployment insurance systems comes predominantly from benefit duration rather the level of benefits. The replacement rate is not important to explain ALMP-access.

Worker quality strongly affect the transition from unemployment to a job. Table 3 contains two different measures for worker quality. The first is a formal skill measure. The second measure is assessment of the worker's 'employability' by the program administrator. It turns out that both variables contribute significantly to the exit process from unemployment into a regular job. Workers with low or no formal skills have an exit rate which is 30 % lower than the one of a skilled worker. Not surprisingly, workers who are easily employable face much better employment prospects, than those whose employability are found to be bad. More surprisingly, there are no significant differences between the two groups with respect to ALMP-entrance. Only persons with average employability enter ALMP-measures at a significantly higher rate.

A further important predictor of unemployment exit is the previous labor market history. Individuals who were previously employed face a significantly better chance to get a job, whereas school-leavers, labor market re-entrants (mostly women) do worse. Moreover, individuals who experienced unemployment in the recent past are less likely to find a new job. The previous labor market status is even more important for the explanation of access to ALMPs. In particular, new entrants and re-entrants have a rather high inflow rate. Also those who were recently unemployed have a significantly higher probability to start an ALMP.

Differences in the size of communities are not very important to explain the two inflow rates. Only in very small communities the results show a higher transition rate from unemployment to jobs. This could be the result of the fact that social control and the corresponding social pressure to accept a job is higher in small communities.

Not surprisingly, local labor market conditions are a significant determinant of the exit rate from unemployment into jobs. There is no indication, however, that in high-unemployment cantons the entry rate to ALMPs is lower than in low-unemployment cantons.

We also included the referendum results by Canton for the 1997-vote on benefits cuts as an explanatory variable. This variable should control for possible regional heterogeneity in the handling of the benefit rules. The hypothesis is that in a canton where the public is strongly in favor of cutting of benefits the rules are likely be handled more strictly and a positive impact on both transition rates should be the result. Interestingly, no effect with

respect to the outflow from unemployment can be detected. However, the ALMP inflow-rate is significantly higher in cantons which were strongly in favor of cutting benefits.[8]

Table 3: The Effect of ALMPs on Entrants

5.2 Accounting for the 'Activity Test'

The results in Table 3 and 4 have their limitations. In particular, we have not yet accounted for the close link that the new law creates between UIB-entitlement and ALMP-participation. In this section we take a closer look at this particular issue. We will focus on the entire subpopulation of individuals who re-entered unemployment within their two-years framework period. These individuals are not unconditionally entitled to seven months of benefits. As far as unconditional benefits entitlement is concerned, the current and the previous unemployment spell are lumped together and treated as if this was a single spell. As a consequence, there is considerable variation in the time to exhaustion of unconditional benefit entitlement among the individuals in this group.[9]. (Here we focus on the total population of re-entrants over the inflow period 09/97 to 11/97. This is why the number of observations in Table 5 is larger than in Table 3).

Focusing on this particular group of re-entrants allows us to separate the effect of duration dependence from the effect of activity testing. We can estimate a separate treatment effect for the group of individuals who have to enter programs as well as for the group of voluntary entrants more precisely. Moreover, we can account for the importance of the activity test per se, both on the transition rate from unemployment to a job and on the rate at which the unemployed actually enter a training program.. As mentioned above, there is no 1:1 relationship between ALMP-participation and the exhaustion of unconditional benefits. If the public employment office

[8]The 1997 referendum on cutting unemployment benefits was rejected by the voters.

[9]There is much less variation in the corresponding time-to-exhausiton of unconditional UIB-payments for the complementary group of individuals who started a *new* framework period when entering the current unemployment spell. The point of time when their unconditional entitlement expires is concentrated at the end of the 7th months in unemployment for those who did not enter a programme until that date. For those who did, the end of unconditional entitlement is delayed for the duration in an ALMP. Consequently, the variation in time-to-exhaustion is comparably small.

cannot supply an appropriate training-slot, we still observe UIB-payment to individuals who have exhausted their unconditional entitlement but do not attend an ALMP-measure.

The first two columns in Table 5 show the results when we do not account for unobserved heterogeneity and correlation between unemployment-exit and program-inflow. Again, the treatment effect turns out significantly negative. Once we account for heterogeneity and correlated processes - as do the estimates in columns 3 and 4 -, the treatment effect becomes significantly positive and rather strong. As soon as an individual has entered a program the hazard rate doubles ($\exp(0.741) = 2,04$). The two mass points of the unobserved heterogeneity distribution are significantly different from each other and differ quantitatively quite strongly, in particular the mass points for ALMP-entry. The Type a group has a low exit rate to a job, but a relatively high ALMP-inflow rate. The parameter 'Alpha' is not significantly different from zero, implying that the two groups are roughly of equal size. As can be seen from the log-likelihood, the introduction of unobserved heterogeneity improves the estimation results considerably. The perfect negative correlation of the unobservables is the explanation for the differences between Model 1 and Model 2. Conditional on observed characteristics and the elapsed duration of unemployment, individuals with bad job prospects are more likely to enter programs.. Therefore, selectivity is responsible for the apparently negative treatment effect in Model 1.

As mentioned above, focusing our analysis on the group of the repeatedly unemployed allows us to estimate the impact of the 'activity test', both on the transition rate to jobs and the entry-rate to a program.. In Table 5 this impact is indicated by the variable 'UBE exhausted'. This is a time-varying dummy-variable that takes the value 1, when unconditional benefit-eligibility (UBE) has run out. We find that the job-hazard rate is smaller after benefit exhaustion. Most likely this is due to the fact that those who could have left unemployment by finding a job have done so prior to benefit exhaustion. In future research we will look at this phenomenon in more detail. After benefit exhaustion the inflow rate to ALMPs is increased significantly. This effect is to be expected, since the activity test forces individuals to enter programs after their unconditional entitlement has expired.

The pattern of duration dependence is similar to the results for the whole

population (Table 3) in the case of the job-exit rate. The highest exit rate is during the 4 to 8 months interval, thereafter we find negative duration dependence. However, in the case of the ALMP-entry rate, the duration pattern is now different. The inflow rate decreases very strongly after an elapsed duration of 8 months.

Table 4: The Impact of Exhausting Passive Benefits

Table 6 provides additional information on the treatment effect. Allowing the treatment effect to differ across the different types of ALMP-measures yields a positive treatment effect for all measures. Their relative performance is identical to the one displayed in Table 4 for the whole population. Computer courses have the highest exit rates whereas language course and employment programs perform worst. The lower panel of Table 6 shows that the treatment effect is higher if an individual enters a program on a voluntary (before eligibility expires) or a non-voluntary basis.

6 Conclusions

Previous research documents a bewildering range of possible effects of training on the duration of unemployment (see Hübler (1997)). Some studies find that training programs reduce the duration of unemployment, some find the opposite. From theory, we would expect this result. Training programs increase chances of finding jobs by reducing mismatch. On the other hand, they reduce chances of finding a job, because trainees have higher reservation wages than non trainees.

Nevertheless, it is of utmost importance to know which programs work and which programs do not work. We use a new dataset on training and unemployment for Switzerland which has two important benefits. First, we can exploit the punish or reward property of the Swiss active labor market policy. Second, we can distinguish between the effects of five types of training programs..

We compare the effect of training programs for repeated unemployed and workers that enter unemployment for the first time. The first group of workers has a shorter benefit entitlement period than the second one. At first, there seems to be no reason to suspect a differential impact if training programs are applied according to the same criteria. However, we find a

stark difference. For first-time unemployed after finishing a program we find no effect on the transition rate to a job. However, since the transition rate to a job is very low during program participation the overall effect is even negative. So, because program participation is time consuming and therefore probably reducing search intensity, programme participation increases unemployment duration. For repeated unemployed the effects are quite the opposite. Here we find that programme participation has a significant and large positive effect on the transition rate to a job.

These results are only a first step. Future research has to address especially two problems. First, the estimation was performed under the restriction that the selection mechanism is equal across the various measures. However, it might well be that, say, computer courses attract individuals with good unobserved characteristics, whereas employment programs attract workers with unfavorable characteristics. Secondly, we look only at the effect of the first attended measure. In fact, multiple ALMP-participation is quite common and taking account for that might lead to different results.

7 References

- Abbring, Jaap H., Van den Berg, Gerard J., and Van Ours, Jan C.(1997), The Effect of Unemployment Insurance Sanctions on the Transition Rate from Unemployment to Employment, *Working Paper,* Tinbergen Institute, Amsterdam/Rotterdam.

- Abbring, Jaap H. and Gerard J. van den Berg (1998), The Non-Parametric Identification of Treatment Effects in Duration Models, *mimeo*, Vrije Universiteit Amsterdam.

- Curti, Monica (1998), *Evaluating Active Labour Market Policy - The Swiss Experience*, Swiss Office of Economic Development and Labour, Berne.

- Gerfin, Michael and Martin Schellhorn (1995), Duration Dependece of the Exit from Unemployment, in Steiner, Viktor and Lutz Bellmann (1995), *Microeconomic Studies of the Labour Market*, Beiträge zur Arbeitsmarkt- und Berufsforschung, Nürnberg.

- Gritz, Mark (1993), The Impact of Training on the Frequency and Duration of Employment, *Journal of Econometrics*, 57, 21-51.

- Heckman, James and Burton Singer (1984), A Method for Minimizing the Impact of Distributional Assumptions in Econometric Models for Duration Data, *Econometrica*, 52, 271-320.

- Hübler, Olaf (1997), An Evaluation of Employment Measures in East Germany, *Jahrbücher für Nationalökonomie und Statistik*, 216, 21-44.

- Lubyova, Martina and Jan C. van Ours (1999), Effects of Active Labour Market Programmes on the Transition Rate from Unemployment into Regular Jobs in the Slovak Republic, *Journal of Comparative Economics*, 27, 90-112.

- OECD (1996), *Labor Market Policies in Switzerland*, Paris.

- Sheldon, George (1989), *Dynamics of the Labor Market*, Berne: Haupt.

- Sheldon, George (1990), The Duration Dependence of the Exit Rate from Unemployment, *mimeo*, Swiss Federal Office of Economic Development and Labour, Berne.

- Sheldon, George (1998), The Efficiency of Public Employment Services: A Nonparametric Matching Function Analysis for Switzerland, *mimeo*, Labor Market and Industrial Organisation Research Unit (FAI), Basle.

- Van den Berg, Gerard J., Van der Klaauw, Bas, and Van Ours, Jan C. (1998) Punitive Sanctions and the Transition Rate from Welfare to Work, *Discussion Paper*, no. 9856, CentER for Economic Research, Tilburg University.

- Van den Berg, Gerard J., Holm, Anders, and Van Ours, Jan C. (1999), Does Work Experience Help to Become a Medical Specialist?, *Discussion Paper*, No. 9919,CentER for Economic Research, Tilburg University.

Table 1. Descriptive Statistics of All, Participants and Non-Participants

	All	Non-Participants	Participants
Citizenship			
Foreign [%]	40.83	38.85	44.60
Gender			
Female [%]	44.40	43.56	46.01
Age [yrs]	33.77	33.43	34.43
Married [%]	44.25	42.37	47.84
Number of Dependents [#]	1.00	92.47	1.14
Previous Earnings [US$]	2282.97	2289.73	2270.09
Replacement Ratio [%]	77.18	77.08	77.37
Skills			
High Skilled [%]	60.77	62.61	57.27
Low Skilled [%]	12.64	12.49	12.92
Unskilled [%]	26.59	24.90	29.81
Employability			
Good Employability [%]	24.22	26.59	19.68
Medium Employability [%]	52.68	51.37	55.19
Bad Employability [%]	9.54	8.53	11.47
Employability Unknown [%]	13.56	13.50	13.66
Previous Labor Market Status			
Previously Employed [%]	88.36	90.24	84.79
First time on Labour Market [%]	7.96	6.65	10.46
Re Entering Labour Market [%]	3.68	3.11	4.76
Unemployed in previous two years	5.40	4.37	7.38
Degree of Urbanization			
Lives in Large City [%]	16.76	16.26	17.70
Lives in Small City [%]	21.05	20.32	22.45
Lives in Village [%]	53.38	54.31	51.59
Unemployment Rate [%]	5.18	5.24	5.06
Cut Benefits [%]	47.66	47.36	48.24
N	38310	25132	13178

Source: Register Data, Swiss Office for Economic Development and Labour.

Table 2. Descriptive Statistics of First Acitve Labor Market Programme

	N	[%]	Length [Weeks]
Basic Skills	3617	27.5	3.0
Language Course	2573	19.5	10.0
Computer Course	2019	15.3	3.5
Other Courses	1917	14.6	9.7
Employment Programme	3052	23.2	19.7
Total	13178	100	

Table 3. The effect of ALMPs on the Transition Rate into Regular Jobs

	Without Het.		With Het.	
	To Job	To ALMP	To Job	To ALMP
Effect of ALMP	-0.141 **		-0.346 **	
	(0.066)		(0.103)	
Masspoints				
Type a	-1.718 **	-2.875 **	-1.667 **	-2.831
Married [%]	(0.259)	(0.448)	(0.283)	(0.460)
Type b	-	-	-inf	-3.669 **
	-	-	-	(0.713)
Replacement Ratio [%]	-		2.273 **	
	-		(0.438)	
Duration Dependence (0 to 4 Months)				
4 to 8 Months	0.311 **	0.342 **	0.461 **	0.405 **
	(0.133)	(0.080)	(0.167)	(0.088)
8 to 12 Months	0.015	-0.203 **	0.309 **	-0.059
	(0.074)	(0.100)	(0.137)	(0.115)
12 + Months	-0.586 **	-0.474 **	-0.200	-0.274
	(0.085)	(0.149)	(0.188)	(0.181)
Control Variables				
Foreign	-0.188 **	-0.024	-0.213 **	-0.033
	(0.074)	(0.058)	(0.079)	(0.057)
Female	0.038	0.070	0.065	0.085
	(0.047)	(0.051)	(0.051)	(0.052)
Age (below 30)				
30 to 45	-0.182 **	-0.017	-0.206 **	-0.029
	(0.044)	(0.090)	(0.049)	(0.091)
45+	-0.619 **	-0.183	-0.689 **	-0.212 **
	(0.063)	(0.096)	(0.063)	(0.094)
Married	-0.099 **	0.056	-0.118 **	0.053
	(0.038)	(0.050)	(0.040)	(0.049)
Children	-0.064	0.036	-0.063	0.034
	(0.046)	(0.046)	(0.055)	(0.046)
Wage [SFr.] (below 2000)				
2000 to 4000	0.025	0.137 *	0.043	0.141 *
	(0.043)	(0.074)	(0.052)	(0.071)
4000+	0.076	0.175 **	0.105 *	0.187 **
	(0.054)	(0.068)	(0.054)	(0.071)
Replacement Ratio 80%	-0.030	-0.015	-0.007	-0.007
	(0.036)	(0.058)	(0.036)	(0.055)
Skills (High Skilled)				
Low Skilled	-0.316 **	-0.051	-0.344 **	-0.065
	(0.067)	(0.056)	(0.072)	(0.058)
Unskilled	-0.284 **	-0.058	-0.331 **	-0.082
	(0.075)	(0.065)	(0.077)	(0.065)
Employability (Good)				
Medium	-0.194 **	0.163 **	-0.220 **	0.152 **
	(0.056)	(0.071)	(0.063)	(0.072)

Table 3. (Continued)

Bad	-0.569 **	0.144 *	-0.625 **	0.119
	(0.088)	(0.075)	(0.094)	(0.079)
Unknown	-0.062	0.167	-0.056	0.169
	(0.101)	(0.116)	(0.129)	(0.110)
Prev. LM Status (Employed)				
Education	-0.169 **	0.574 **	-0.201 **	0.563 **
	(0.040)	(0.075)	(0.054)	(0.078)
Nonemployment	-0.302 **	0.407 **	-0.328 **	0.400 **
	(0.113)	(0.080)	(0.126)	(0.081)
Unemployed	-0.362 **	0.221 **	-0.424 **	0.196 **
	(0.057)	(0.088)	(0.061)	(0.090)
Lives in (Large City)				
Small City	-0.088	-0.014	-0.131	-0.031
	(0.074)	(0.099)	(0.080)	(0.098)
Village	0.197 **	-0.039	0.197 **	-0.039
	(0.066)	(0.055)	(0.080)	(0.055)
Inflow Period (September 1997)				
October 1997	0.125	0.020	0.145	0.032
	(0.074)	(0.069)	(0.091)	(0.072)
November 1997	0.210 **	0.021	0.254 **	0.038
	(0.057)	(0.076)	(0.081)	(0.079)
Unemployment Rate	-0.339 **	-0.263	-0.312 **	-0.254
	(0.126)	(0.209)	(0.139)	(0.208)
Cut Benefits[b)] [%] (below 45)				
45 to 55	0.094	0.045	0.133	0.061
	(0.079)	(0.116)	(0.090)	(0.120)
55 +	0.163	0.514 *	0.242 *	0.551 *
	(0.114)	(0.280)	(0.127)	(0.278)
Log Likelihood	-25667.9		-25648.9	
N	7662		7662	

Note: Joint Estimation of selection into ALMP and transition into job.

**, * indicate coefficient is significant at the 5% or 10% level.

a) This is the logit specification for Prob(u=ua, v=va) = exp(alpha)/(1+exp(alpha)).

b) Percent voting to cut benefits by canton in September 1997.

Source: Swiss Federal Office of Economic Development and Labour, own calculations.

Table 4. Effects by Type, Timing and Participation Status

	All
Type	
Basic Skills	-0.275 **
	(0.115)
Language Course	-0.563 **
	(0.142)
Computer Course	-0.088
	(0.102)
Other Course	-0.307 **
	(0.131)
Employment Programme	-0.439 **
	(0.148)
Timing	
Unconditional Benefit Eligibility	-0.325 **
	(0.098)
Conditional Benefit Eligibility	-0.448 **
	(0.149)
Participation Status	
During Programme	-0.820 **
	(0.082)
After Programme	-0.083
	(0.071)
N	7662

Table 5. The effect of ALMPs for the Repeatedly Unemployed

	Without Het.		With Het.	
	To Job	To ALMP	To Job	To ALMP
Effect of ALMP	-0.282 **		0.714 **	
	(0.037)		(0.115)	
Masspoints				
Type a	-2.911 **	-1.990 **	-4.180 **	-1.755 **
	(0.149)	(0.242)	(0.218)	(0.271)
Type b			-2.173 **	-5.463 **
			(0.191)	(0.983)
Replacement Ratio [%]			-0.016	
			(0.076)	
Duration Dependence (0 to 4 Months)				
4 to 8 Months	0.878 **	0.142 **	1.146 **	0.091 *
	(0.035)	(0.055)	(0.040)	(0.054)
8 to 12 Months	0.281 **	-1.341 **	0.867 **	-1.384 **
	(0.050)	(0.099)	(0.071)	(0.099)
12 + Months	-0.227 **	-2.264 **	0.442 **	-2.297 **
	(0.082)	(0.151)	(0.103)	(0.150)
Control Variables				
UBE Exhausted	-0.129 **	0.123 **	-0.118 **	0.201 **
	(0.035)	(0.053)	(0.038)	(0.056)
Foreign	0.033	-0.020	0.006	-0.004
	(0.034)	(0.055)	(0.043)	(0.059)
Female	0.226 **	0.037	0.270 **	0.040
	(0.041)	(0.068)	(0.052)	(0.075)
Age (below 30)				
30 to 45	-0.040	-0.033	-0.086 **	-0.004
	(0.033)	(0.055)	(0.043)	(0.060)
45+	-0.311 **	-0.030	-0.368 **	-0.019
	(0.045)	(0.071)	(0.056)	(0.079)
Married	0.138 *	0.045	0.259 **	-0.033
	(0.078)	(0.123)	(0.100)	(0.134)
Female*Married	-0.104	-0.384 **	-0.234 *	-0.250
	(0.105)	(0.165)	(0.133)	(0.180)
Female*Children	-0.107	0.252	-0.016	0.153
	(0.106)	(0.165)	(0.134)	(0.181)
Children	-0.038	-0.059	-0.151	-0.006
	(0.083)	(0.131)	(0.106)	(0.142)
Wage [SFr.] (below 2000)				
2000 to 4000	0.213 **	-0.060	0.248 **	-0.052
	(0.045)	(0.070)	(0.059)	(0.078)
4000+	0.115 **	-0.014	0.130 *	0.026
	(0.057)	(0.090)	(0.074)	(0.100)
Replacement Ratio 80%	-0.086 *	-0.111	-0.061	-0.125
	(0.047)	(0.078)	(0.060)	(0.085)

Table 5. (Continued)

Skills (High Skilled)				
Low Skilled	0.076 **	0.251 **	0.148 **	0.201 **
	(0.037)	(0.061)	(0.048)	(0.067)
Unskilled	-0.113 **	0.100	-0.080	0.081
	(0.047)	(0.075)	(0.060)	(0.083)
Employability (Good)				
Medium	-0.045	-0.226 **	-0.101 *	-0.147
	(0.045)	(0.085)	(0.058)	(0.092)
Bad	-0.266 **	0.075	-0.335 **	0.111
	(0.043)	(0.076)	(0.055)	(0.083)
Unknown	-0.607 **	0.087	-0.754 **	0.124
	(0.061)	(0.093)	(0.080)	(0.103)
Prev. LM Status (Employed)				
Education	-0.277 *	0.715 **	-0.324 *	0.616 **
	(0.141)	(0.151)	(0.168)	(0.170)
Nonemployment	-0.548 **	0.043	-0.739 **	0.086
	(0.113)	(0.143)	(0.139)	(0.164)
Unemployed	-0.156 **	0.164 *	-0.231 **	0.241 **
	(0.064)	(0.089)	(0.080)	(0.101)
Lives in (Large City)				
Small City	-0.101 **	-0.110	-0.155 **	-0.040
	(0.044)	(0.067)	(0.055)	(0.074)
Village	0.182 **	-0.070	0.183 **	-0.001
	(0.033)	(0.053)	(0.042)	(0.059)
Inflow Period (September 1997)				
October 1997	0.170 **	-0.231 **	0.169 **	-0.184 **
	(0.048)	(0.072)	(0.061)	(0.080)
November 1997	0.269 **	-0.200 **	0.277 **	-0.121
	(0.049)	(0.075)	(0.063)	(0.083)
Unemployment Rate	0.027	-0.547 **	-0.045	-0.440 **
	(0.063)	(0.101)	(0.079)	(0.117)
Cut Benefits[b)] [%] (below 45)				
45 to 55	0.142 **	-0.067	0.098 **	0.004
	(0.035)	(0.060)	(0.046)	(0.066)
55 +	0.352 **	0.150	0.366 **	0.241 **
	(0.058)	(0.094)	(0.073)	(0.103)
Log Likelihood	-25986.0		-25859.2	
N	8137		8137	

Note: Joint Estimation of selection into ALMP and transition into job.
**, * indicate coefficient is significant at the 5% or 10% level.
a) This is the logit specification for Prob(u=ua, v=va) = exp(alpha)/(1+exp(alpha)).
b) Percent voting to cut benefits by canton in September 1997.
Source: Swiss Federal Office of Economic Development and Labour, own calculations.

Table 6. Effects of Benefit Exhaustion and Effects of ALMP

Effect of ALMPs	0.714 **
	(0.115)
UBE Exhaustion	-0.118 **
	(0.038)
Basic Skills	0.733 **
	(0.126)
Language Course	0.643 **
	(0.137)
Computer Course	0.934 **
	(0.134)
Other Course	0.752 **
	(0.134)
Employment Programme	0.581 **
	(0.130)
Timing	
Unconditional Benefit Eligibility	0.813 **
	(0.117)
Conditional Benefit Eligibility	0.611 **
	(0.120)
N	8137

Table A1. Definition of Variables

Foreign	
	Non Swiss Citizenship
Children	
	Has more than zero Dependents
Wage	
	Earnings in previous job for employed or equivalent earnings for nonemployed
Replacement Rate	
	Either 70% for high (> 2500 US$) income or 80% for low income unemployed
Skills	
	Degree of Professional qualification
Employability	
	5 point scale rating by placement office at the beginning of unemployment spell 1 needs no help 2 easily employable 3 medium 4 bad 5 special case about 10 % do not have a rating
Previous Labor Market Status	
	Employed First time entering the labor market Nonemployment: Mothers, Prisoners, etc
Unemployed	
	Has been unemployed at least once in last two years
Lives in	
	Large City more than 100,000 inhabitants Small City, from 10,000 to 99,999 inhabitants Village, less than 9999 inhabitants
Inflow Period	
	Month when registering at the unemployment office
Unemployment Rate	
	Cantonal unemployment rate 09/1997
Cut Benefits	
	Percentage voting yes to proposal to cut the replacement rate by 1 to 3 percent held on September 28, 1997

Table A2. Descriptive Statistics of All, Participants and Repeatedly Unemployed

	All				Repeatedly Unemployed[a)]			
Variable	Mean	Std. Dev.	Min	Max	Mean	Std. Dev.	Min	Max
Participants	0.34	0.48	0.00	1.00	0.25	0.43	0.00	1.00
Foreign	0.41	0.49	0.00	1.00	0.47	0.50	0.00	1.00
Female	0.44	0.50	0.00	1.00	0.40	0.49	0.00	1.00
Age [yrs]	33.77	11.53	14.74	64.86	34.42	10.66	17.01	64.86
Married	0.44	0.50	0.00	1.00	0.47	0.50	0.00	1.00
Number of Dependents [#]	1.00	1.27	0.00	11.00	1.02	1.27	0.00	9.00
Previous Earnings [SFr.] [b)]	3424.45	1640.05	0.00	8100.00	3421.00	1335.58	0.00	8100.00
Replacement Ratio [%]	77.18	4.33	70.00	80.00	77.05	4.43	70.00	80.00
High Skilled	0.61	0.49	0.00	1.00	0.54	0.50	0.00	1.00
Low Skilled	0.13	0.33	0.00	1.00	0.14	0.34	0.00	1.00
Unskilled	0.27	0.44	0.00	1.00	0.32	0.47	0.00	1.00
Good Employability	0.24	0.43	0.00	1.00	0.28	0.45	0.00	1.00
Medium Employability	0.53	0.50	0.00	1.00	0.49	0.50	0.00	1.00
Bad Employability	0.10	0.29	0.00	1.00	0.11	0.31	0.00	1.00
Employability Unknown	0.14	0.34	0.00	1.00	0.12	0.32	0.00	1.00
Previously Employed	0.88	0.32	0.00	1.00	0.97	0.18	0.00	1.00
First time on Labour Market	0.08	0.27	0.00	1.00	0.01	0.11	0.00	1.00
Re Entering Labour Market	0.04	0.19	0.00	1.00	0.02	0.15	0.00	1.00
Previously Unemployed	0.05	0.23	0.00	1.00	0.06	0.23	0.00	1.00
Lives in Large City	0.17	0.37	0.00	1.00	0.15	0.36	0.00	1.00
Lives in Small City	0.21	0.41	0.00	1.00	0.19	0.39	0.00	1.00
Lives in Village	0.53	0.50	0.00	1.00	0.56	0.50	0.00	1.00
Inflow September	0.29	0.45	0.00	1.00	0.10	0.30	0.00	1.00
Inflow Ocotber	0.42	0.49	0.00	1.00	0.53	0.50	0.00	1.00
Inflow November	0.29	0.45	0.00	1.00	0.37	0.48	0.00	1.00
Unemployment Rate [%]	5.18	1.45	1.60	7.90	5.30	1.49	1.60	7.90
Cut Benefits [%]	47.66	9.67	19.60	74.60	47.36	9.28	19.60	74.60
N	38310				8137			

Notes: a) A repeatedly unemployed has more than zero payments during the last two years at the time she or he enters unemployment again.
b) 1 US$=1.5 SFr. Censored at SFr. 8100