Do ALMPs Increase the Probability
of Job Interviews?

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Abstract

This paper calculates the impact of Active Labour Market Programmes through the use of three new indicators which measure the application performance of the unemployed. These indicators can be measured repeatedly and therefore allow the usage of Panel Regression methods, cancelling out any unobserved individual heterogeneity. To implement the new approach, data on 30,000 applications has been collected. Using this data, a large positive effect for unemployed with a long term unemployment forecast was estimated. For unemployed without such a forecast, the effect is small. This indicates that ALMP resources should mainly be used when the case worker suspects long unemployment duration. Regarding the new evaluation approach, the paper shows that it fulfils the requirements of a good controlling instrument.

1. Introduction

With an annual budget allocation of over 500 million Swiss Francs, the Swiss unemployment insurance uses a big proportion of its budget on ALMPs (Active Labour Market Programmes), with the intention to make reintegration of unemployed persons quicker and longer lasting. Indeed, it is the most expensive instrument it employs, costlier than counselling and placement through case workers combined.

In order to improve the quality of these programs, a good controlling instrument is needed. This controlling instrument should estimate the ALMP effects in an unbiased way. It should be easy to understand and communicate and therefore being trusted by everyone involved; the unemployed, the ALMP provider and the insurance case workers. It should be detailed so that its findings can be used to tell which ALMP is successful for which group of unemployed. Ideally, the instrument goes further even and indicates why an ALMP is successful or unsuccessful, so existing programs can be adapted and modified rather than just eliminating the bad ones. It should be relatively cheap so it can be applied on a regular basis, to keep the results updated and relevant for the current labour market.

Unfortunately, such an instrument doesn't exist yet. In some ways this is not surprising, as the challenges are nontrivial: A direct comparison between participants and non-participants of a certain ALMP is not possible, as it is very likely that characteristics which influenced the decision of participation (by the unemployed or case worker) also influence the outcome on the labour market. Comparing only very similar participants and non-participants as done through the often used matching approach has limits because it can only rely on the characteristics recorded in databases. Often, many important features and skills of the unemployed are missing in these records.

This study tries another attempt at the old research question; how can one measure the effect of an ALMP accurately? It doesn't do this by more sophisticated statistical tools, but rather through different indicators and different data. As part of this study, a nine months data collection period was carried out at an agency of the Swiss unemployment insurance, Zurich-Staffelstrasse. During this time, all applications written by the unemployed at Zurich-Staffelstrasse, their characteristics and outcome were documented. A sample of 30,000 applications was then coded and recorded electronically. Further data on the unemployed and the ALMP was collected through surveys among the case workers and the persons responsible for the ALMP. Through this, a very rich dataset was assembled.

Based on the idea of Falk, Lalive and Zweimüller (2005), this paper measures changes in the application process of the same person rather than comparing the different individuals. It does this by measuring the probability of a job interview and the frequencies of applications and interviews per week. While Falk et al. applied an experimental design (by adding ALMP diplomas to randomly chosen applications, comparing the impact of the diploma on the success rate) this new approach measures the impact on a purely observational base, comparing applications before, during and after ALMPs.

This approach has great advantages: It allows cancelling out all time-invariant characteristics of an individual by using quite simple statistical tools. It permits the calculation of individual treatment effects. It is non-intrusive and since it does not need the consent of the persons involved, doesn't result in a selection bias. Because the whole spell from beginning to end can be observed, all the different effects proposed by theory can be identified. This makes it a very powerful controlling tool.

Using the data collected at the trial at Zurich-Staffelstrasse, the following results were calculated by means of panel regression estimation with fixed effects: Overall, the ALMPs had large positive effect on the participants from Zurich-Staffelstrasse. Participation resulted in more applications (an increase of 0.092 per week, which, at the time the average ALMP is announced, is equivalent to a 3.5 % increase), a higher probability of a job interview (plus 0.010, which is equivalent to a 17.9 % increase) and a higher number of interviews per week (plus 0.028 or 19.3 %).

The effects are particularly large for unemployed with a long term unemployment forecast while they are quite small for unemployed with a forecast below twelve months. This difference seems to hold important information on who should be sent to participate in ALMPs: It is mainly the unemployed with low chances of a quick reintegration into the labour market who gain from the programs.

The results show further that the different subtypes of ALMPs fare very differently:[1] On average, basic courses, the category "other courses" (a mix of IT and vocational training), basic qualifications and language courses do well. Employment programmes and personality oriented courses on the other hand have a negative effect. Programs with negative effects don't have to be abolished altogether; but either the programs or the mix of unemployed participating have to be adapted in order to reap the benefits. Because the data stems only from one agency, these findings are only preliminary results of course. With more data collected it would be possible to have representative and more detailed estimations.

The paper is structured in the following way: In chapter 2, the four effects proposed by theory are illustrated and a very short overview on the literature in Switzerland is given. The advantages of the new approach are elaborated in further details in chapter 3, and the data used is described in chapter 4. Chapter 5 describes the three application indicators and their development over the duration of the unemployment spell. In chapter 6 the data the ALMP effect is measured through Panel Regression analysis. The main models are presented and several sensitivity tests conducted. Chapter 7 looks at the distribution of the effect, to find out more about under what circumstances the ALMP result in a positive effect. Chapter 9 explains why the method is a good controlling method despite its inability to track the application process to its ultimate goal, the job, and Chapter 10 concludes.

2. Theory and related literature

The topic has created great interest over the past two decades and as it is connected to the wider topic of evaluating welfare programs in general, the related literature is vast. A good overview over the literature, methods and challenges involved can be gathered from Heckman, Lalonde and Smith 1999 and Smith and Todd 2005. A very brief overview over the Swiss literature on the topic is given at the end of this chapter, but first the theoretical background developed in the international literature is explained.

There are four main effects proposed by the evaluation literature: the threat effect, the lock-in effect, the skill enhancement effect and the signal effect. These effects occur at different times during the unemployment spell, as illustrated by Graph 1, and have different effects on the three application indicators used in this study. The first one of these three indicators is "interview probability", which captures the chances of the application actually resulting in a job interview (it could be interpreted as the qualitative side of the application process). The second one is application frequency, measured in applications per week. This can be interpreted as the search intensity, or the quantitative side. As a third indicator, "interviews per week" is used. This is a vector of the other two variables, and the outcome which policy makers are most interested in, because it captures both quality and quantity and is closely connected to the final outcome, getting a job (for how close exactly, see chapter 9).

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[1] Note that only ALMP in the narrow sense (as defined by the Swiss Unemployment Insurance) are scrutinized by this study. Other instruments, like wage subsidies, are not covered.

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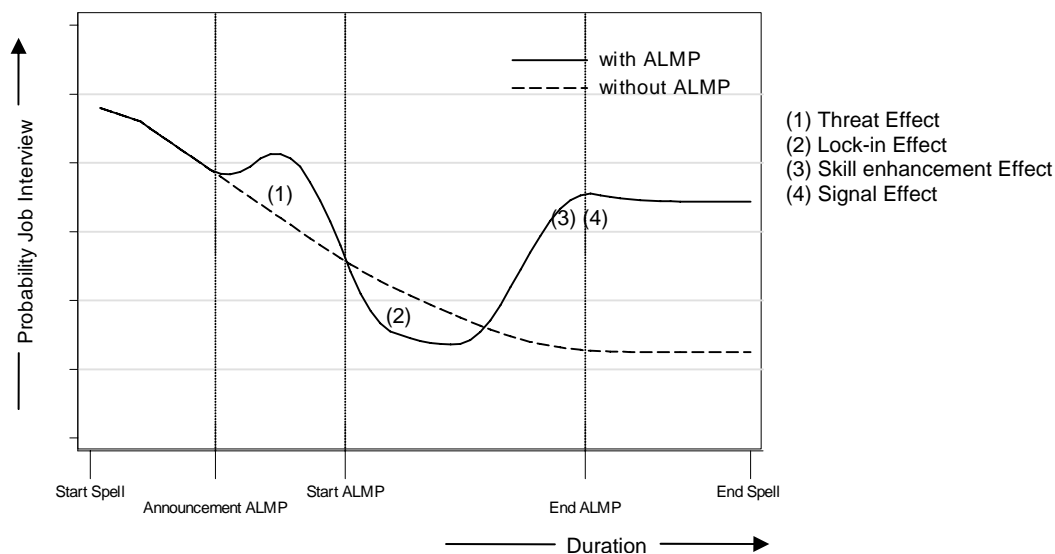
Graph 1: The four effects proposed by theory - schematic diagram

The first effect, the threat effect, starts right after the unemployed has been informed about her or his participation in an ALMP. This effect caught a lot of attention in research, especially after the paper of Black et al. 2003 which concluded that the threat effect is the driving forces behind the welfare program in Kentucky which they evaluated. It predicts that the search intensity rises after the announcement, as the unemployed is not keen on joining the ALMP. What happens to the interview probability is unclear and depends on how dry the pool of suitable jobs is. If suitable jobs are abundant, the probability should stay the same (maybe even rise because of better applications being written), if not, the probability falls as each further application is a worse job match than the one before. Because the probability of these additional applications is unlikely to be zero, one would expect the effect on interviews per week to be positive.

After the ALMP has started, theory predicts the occurrence of a second effect, the lock-in-effect. This effect happens if the ALMP is demanding and doesn't leave the unemployed enough time to write as many applications as they did before the ALMP started. This will decrease the number of applications a person writes per week. Because an unemployed would most likely write applications for the jobs they think they have a very good chance to get, the application probability should increase. Overall however the effect results in a lower number of interviews being written. A different explanation of the lock-in effect is that an unemployed person reduces the search efforts if the program is attractive and positive treatment effects are anticipated (Carling Richardson 2004). Finally, the lock-in effect could result if the case worker of the unemployed person reduces counselling efforts while the unemployed is participating in an ALMP (Ragni 2007). All three explanations point to lower search intensity during the ALMP.

Increasingly with the advancement of the ALMP, and especially once the ALMP has finished, the desired effects should set in, i.e. the skill enhancement and/or the signal effect. The two differ in as far the skill enhancement is an effect on the know-how of the unemployed. This could be better application techniques, improved language skills etc. The signal effect on the other hand unfolds when the unemployed is in a better position to reveal information to a potential employer about her or his productivity (Carling Richardson 2004). One expects an increase of chances on the labour market through this signal, but the diploma can backfire if it actually signals a lack of knowledge (Falk, Lalive and Zweimüller 2004).

Table 1 summarizes the different effects. It also shows the overall trends in the three application indicators one would expect from theory. The overall trend for probability of a job interview is downward, as employers get more and more suspicious as they take a long duration of unemployment as a signal for low employability, low productivity or low work moral (Rosholm and Svarer 2004). As for applications per week, one would expect this indicator to rise over time as unemployed become more desperate with the end of the entitlement period nearing, opening up their search field and writing more applications. The trend for interviews per week is driven through the other two indicators, and

given that the interview probability presumably falls steeply at the beginning and then flattens out, and applications per week increases gradually at the beginning, but then gains momentum later in the unemployment spell, one would expect the third indicator, interviews per week, to fall quite quickly at the beginning, flattening out and then increasing towards the end.

	Overall Trend	Threat effect (after announcement)	Lock-in Effect (during ALMP)	Skill enhancement Effect (after ALMP)	Signal Effect (after ALMP)
Probability of a job interview	- (steep fall at beginning, later flattening)	-	+	+ (dominant indicator)	+ / - (dominant indicator)
Applications per week	+ (slow increase at beginning, later gaining momentum	+ (dominant indicator)	- (dominant indicator)	0	0
Interviews per week	- (steep fall at beginning, flattening and increase towards the end)	+	-	+	+ / -

Table 1: The four effects and their influence on the application indicators
Note: "+" indicates an increase, "-" a decrease and "0" no changes in the indicator through the effect

It is important to note at this point that these are all effects measured on a short term basis (rather than long effects on salary, job satisfaction etc.) and on the individual level. A possible substitution effect (another worker is displaced because the unemployed finds a job, so the net gain in employed person is zero) can only be measured on the macro level. There are also effects on the non-participants (threat effect through the pure existence of ALMPs) and on the population which is not even unemployed (higher tax burden as ALMPs have to be paid for). So there are limits to the microeconomic analysis. In terms of learning which ALMPs work and why, and to develop a controlling instrument, the micro approach seems to be the way forward as macroeconomic analysis can measure the effect only on a very aggregate level.

In order to measure the overall effect and the four partial effects, there have been several studies on Swiss ALMPs since they've been introduced in the late nineties. Many of these studies were part of the two evaluation waves, organised by the Swiss State Secretariat for Economic Affairs SECO. One of the earliest microeconomic studies was the one by Lalive, van Ours and Zweimüller (2000) who estimated the effect of ALMPs on the duration of unemployment, accounting for participation selectivity using a multivariate duration model. They estimate that during an ALMP, participants have a lower exit rate through the lock-in effect. Once the ALMP is finished, the authors find a strong positive effect for women, but none for men.

Gerfin and Lechner (2002) were using the matching approach to measure the effects. They found that wage subsidies work well, but conclude that vocational training programmes show disappointing performance, especially the language courses and the type "basic course". A study of Lechner and Smith (2007) examines the allocating efficiency of case workers to different types of ALMPs. The authors conclude that the current allocation is problematic and that efficiency is as low as if a random rule would be used. Statistical rules to allocate the unemployed into programs do substantially better according to Lechner and Smith.

In a recent study, Lalive, van Ours and Zweimüller (2008) used both "timing-of-events" and matching estimation. While the estimation based on "timing-of-events" showed that none of the Swiss ALMPs shortened unemployment duration, the matching results were similar to those of Gerfin and Lechner, concluding that wage subsidies reveal good results while training and employment programmes do not. In a separate macroeconomic study, Zweimüller, Lalive, Zehnder (2006) estimated that the positive effect of the wage subsidies has a darker side: a very small negative effect on all non-participants actually results in a negative overall effect for the whole economy. On the other hand, they estimate a positive effect of the employment programmes: Despite its negative impact on the participants, its deterring effect has a small positive impact on all non-participants, which result in an overall positive effect.

For many of the ALMPs used in Switzerland thus, the calculated results are mixed at best. They seem to work well for certain groups, but in average fare quite poorly. This weak performance doesn't seem due to an especially bad provision of ALMPs in Switzerland, but rather reflects what researchers have found all over the world.

3. The new approach and its methodological advantages

While many statistical approaches have been used over the years, they all had to come to terms with the fact that, with the existing data, very sophisticated methods had to be applied, many of those relying on strong assumptions. Heckman and Smith (1999) pointed out that "the best solution to the evaluation problem lies in improving the quality of the data on which evaluations are conducted and not in the development of formal econometric methods to circumvent inadequate data." The innovation of the new approach being applied in this study is indeed not the statistical method but new indicators, possible through a unique data set especially collected for this study.

The idea of the new approach is based on the work of Falk, Lalive and Zweimüller (2005). These authors introduced a new indicator into the ALMP evaluation literature; the probability of a job interview. This new indicator has a tremendous advantage over other indicators used so far, e.g. duration, number of months unemployed in the next year, salary in the new job etc., which lies within the fact that it can be measured several times over the duration of unemployment instead of only once. This makes it possible to calculate an effect not just by comparing two persons, but by comparing the same person over time. Thus unobserved heterogeneity between persons which is time-invariant can be completely eliminated.

Furthermore, the new indicator allows the calculation of individual treatment effects instead of average treatment effects over all participants or groups of participants. This enables the researcher to observe the distribution of the effects among individuals participating, and simplifies identifying groups of individuals who benefit from the ALMPs (Falk, Lalive and Zweimüller 2005).

Because the new approach conducts its estimation without a control group, involved issues can be avoided: Sianesi 2004 argues that, depending on the program, all unemployed persons will join an ALMP, if only the duration of the spell is long enough. If the reason that the person doesn't participate in an ALMP is that she or he found a job before the ALMP could have been announced, this could lead to a distortion of the estimation not in favour of the ALMPs.

In the research of A. Falk, R. Lalive, J. Zweimüller (2005), the authors engaged ten unemployed persons to write 20 applications each. While the quality of the applications was held constant, a diploma of an IT training course attended by unemployed was attached to 10 randomly chosen applications of each unemployed. The outcome of the application (did the application lead to a job interview?) was then reported back by the unemployed to the authors. The focus of the paper was on the signal effect of the IT courses and on how well a course is received by potential employers. The study produced interesting results: while on average, adding the diploma had a negative (not significant) effect, the individual effects spread far from positive to negative. Adding the IT-diploma was clearly disadvantageous when applying for jobs which required good IT skills. The fact that someone had to attend an IT course organized by the unemployment insurance was obviously taken as a signal for low IT knowledge.

The idea of Falk, Lalive and Zweimüller (2005) is being used for this study, but modified in two main aspects. In addition to the indicator "probability of a job interview", two more indicators are used: the number of applications per week and interviews per week" is used. A second difference is that instead of the experimental design, a purely observational design is used. While such an observational approach allows less control over the application process (the quality of the application cannot be held constant, for example), it has several advantages: It is not as time consuming and allows therefore collecting data on a much higher number of observations. It is non-intrusive because it doesn't change the normal application process; the data represent the "normal" behaviour outside the monitoring period. The consent of the unemployed isn't necessary to collect the data as in Switzerland; it is already standard that some data on applications is collected by the case workers. This is an advantage because no special incentives to participate in the data collection have to be created and

therefore involved distortions can be avoided. And because the whole spell from beginning to end can be observed, all effects proposed by theory can be identified and measured, not just the signal effect. All those characteristics make it possible to create a powerful controlling instrument which fulfils all the criteria mentioned in the introduction (unbiased, easy to understand and communicate and therefore trusted, detailed, cheap and easy to update).

4. Data

Data on the application process is systematically gathered in all Swiss unemployment insurance agencies, using a self-reporting sheet filled out by the unemployed person. The unemployed track all their applications over the course of a month and hand the sheet over to the case worker at the end of the month. Most of these forms are filled out by hand, and while they are archived for quality checks and lawsuits, the information isn't stored electronically. The data has not been used for research so far.

In order to make this data source accessible and by this enabling the new forms of evaluation, the data on the application sheets have to be stored electronically. This has been done as a trial run in a single agency of the Swiss Unemployment Insurance, the Zurich-Staffelstrasse agency. Being a medium sized agency with both clients from city and rural areas and with a wide variety of occupations, this agency seemed well suited. Obviously, the data cannot be considered representative for the canton of Zurich or Switzerland as a whole, but it gives first insights. The data was gathered between 1st of July 2007 and 31st of March 2008. A team of nine students recorded the roughly 30,000 applications written during this period, putting in more than a year's work together. It is possible to make this process much more economical by using a high speed scanner and a program which recognizes ticked fields in the scanned files and stores the data automatically (this method was not used because of its high initial costs). Since it is standard from 2009 onward to scan applications sheets in Switzerland anyway, large amounts of data could be generated very cheaply.[2]

For efficiency reason, a stratified sample of the persons registered during the observational period was taken: The sample contains all unemployment spells with at least one ALMP (a quarter of all unemployed registered at Zurich-Staffelstrasse) and a random selection of a third of the spells in which the unemployed did not attend an ALMP. This sample led to a database containing data of 806 unemployment spells. Applications within the lay-off period (the person wasn't unemployed at any point of the spell) and applications during the last month of unemployment were dropped, as these periods are subject to different rules by the unemployment insurance. Including them would distort the analysis. Spells which consisted solely of applications of the above mentioned kind were dropped with them.

This leaves 738 observed spells, 338 of which are treated spells (unemployed participated at some stage of the unemployment spell one or several ALMPs), containing a total of 17,910 applications. The 400 untreated spells (unemployed didn't participate in an ALMP at any time of the spell) include 12,081 applications. As shown in Graph 2, there is a lot of data over the first few weeks of unemployment covering unemployed without ALMP. As time goes by, an increasing amount of the data comes from persons with ALMP. The case number can be low when looking at the later stages of the duration of unemployment (that explains some of the high fluctuation in Graph 3 to 5).

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[2] In order to collect accurate data, it is necessary that case workers update the application sheets after the unemployed handed their application sheets in. This is necessary because outcomes of many applications are not known yet at the end of a month. The update of the sheets during the monthly counselling session (lasting for a few seconds to a few minutes) is probably the biggest cost involved. Apart from costs, this procedure entails also benefits as it shows to the unemployed that these sheets are taken seriously.
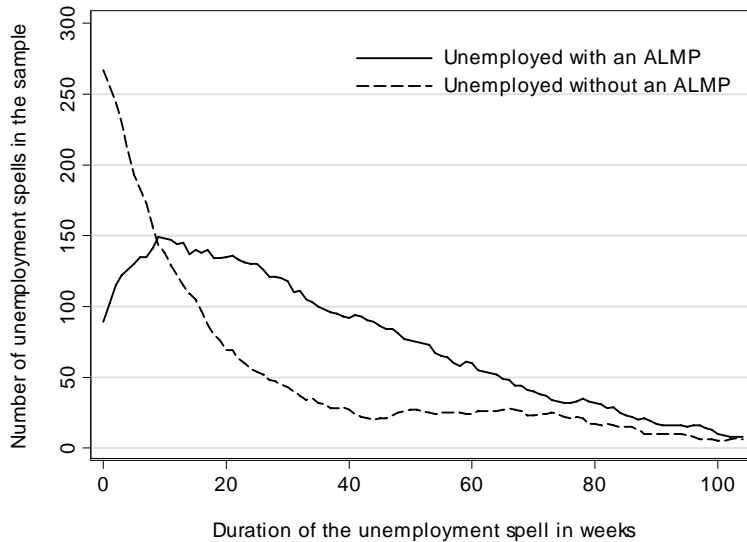
Graph 2: Number of observations over duration of the unemployment spell

Note: The graph shows the number of observation covered in each week. The duration is plotted until the 104th week, after which the entitlement time frame expires. A total number of 738 unemployment spells are observed, 338 of which contain an ALMP participation at some stage of the spell ("unemployed with an ALMP"). Because of left and right censoring this total number is not reached in any of the weeks.

Two objections to the data quality could be raised, both in connection to the self-reporting nature of the application sheets. The first possible objection could be that not all records are truthful and that some unemployed record applications they have never written. While wrongly recorded data (on purpose or by mistake) cannot be ruled out, the amount of purposeful cheating should be rather small, as case workers regularly check back with employers if the unemployed have indeed applied to the job indicated on their self-reporting sheet. Even if a small amount of cheating remains, this could only hamper the calculation of ALMP effects if more or less cheating is going on after the ALMP has started. There is nothing pointing to such an effect. The second objection could be that because of the requirement to write at least 8 to 12 applications, many unemployed don't bother writing all their applications down and instead stop once the minimum has been reached, therefore depriving the dataset of all their other applications. Again, this doesn't seem to be the case, neither according to statements by the case workers, nor showing up in the data. The applications are more or less evenly distributed over the stretch of a month, especially when looking at unemployed with ALMP (see Annex 1). If only the first 10 or so applications would be recorded, you'd expect an accumulation at the beginning of the month.

There is one more issue which has to be addressed in connection to the reporting sheet: Among other entries, the unemployed record the outcome of the application, whether they had an interview, a job offer or a rejection. The case workers at the trial agency reported that there was some confusion about the meaning of "job interview" when unemployed were carrying out personal applications (showing up at a company's door step and asking for a job). Some unemployed recorded such a personal application as an interview, others didn't. In average, there doesn't seem much of a difference in the calculated effect of an ALMP, using all applications or only the non-personal ones, as the regression analysis show (there are differences though when looking at the different ALMPs types). If not otherwise mentioned, all applications are used.

Apart from the self-reporting application sheets, data sources used include the electronically registered data of the unemployment insurance, a survey conducted among the case workers at Zurich Staffelstrasse (gathering additional data on the unemployed, e.g. a forecast regarding the unemployment duration of each person and motivation on the ALMP participation) and a survey among the employees responsible for the organization of ALMPs at the Office for Economy and Labour of the canton of Zurich (gathering diverse data on the ALMPs).

5. Changes in the three application indicators over time

To get an overview, the three application indicators are plotted over the duration of the unemployment spell. The duration is plotted until the 104th week, after which the entitlement time frame in Switzerland expires. Most unemployed use their benefits up beforehand, usually at the 18th months. There are several deviations from this pattern for persons who haven't paid into the unemployment insurance (shorter benefit period), elderly (longer period) and persons who participate in a work subsidy scheme (longer period).

Looking at the development of the first indicator, **probability of a job interview** (Graph 3), one notices that both groups start off with similar chances: one in ten applications are successful. The similarity of that starting level, and in fact the whole development over time, is striking. One would expect quite stark differences between the two groups: Case workers send the persons with bad chances to an ALMP, and let the others search without training.
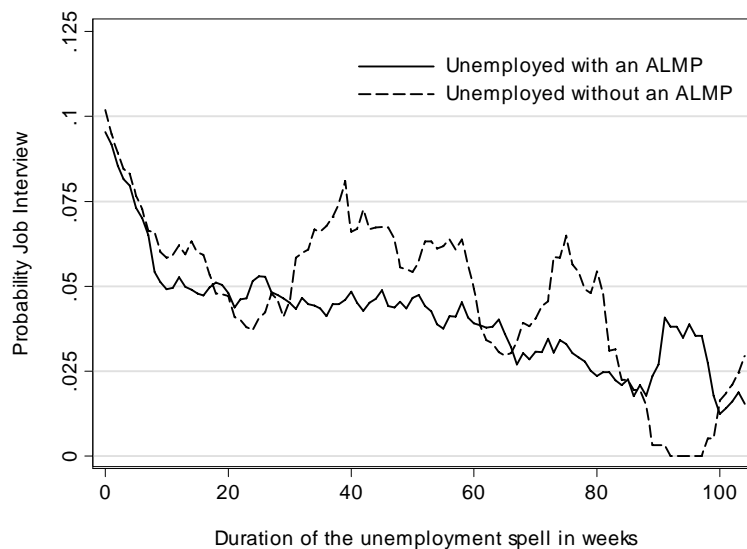
Graph 3: Probability of a job interview
Note: The graph shows the average probability of a job interview, giving equal weight to each unemployed registered in a certain week. The duration is plotted until the 104th week, after which the entitlement time frame expires. A total number of 738 unemployment spells are observed, 338 of which contain an ALMP participation at some stage of the spell ("unemployed with an ALMP"). Because of low observational numbers in certain weeks, a nine week moving average is used.

Chances drop for both groups quickly over time. This is what theory predicts: Employers get more wary as time progresses, taking the long unemployment duration as a signal for low employability. Unemployed themselves might broaden their search field which could entail a fall in the (relative) number of successful hits. Just as important though are probably the changes in the group composition: the successful unemployed leave early and the remaining ones have a lower average chance.

For unemployed with ALMP there seems to be a stabilization of the interview probability after the first six month of unemployment, before the indicator drops again after the twelfth month to almost zero over the remaining duration of the entitlement frame. The development is very similar for the unemployed without ALMP, but because of the lower number of observations, the indicator is more volatile.

The indicator **application per week** represents the quantitative side of applications (Graph 4). Again, both the treated and control group start off in a very similar way, with the member of the treated group just starting a bit above the control group. The number of applications per week gently drops till the 6th month and then picks up again. Apart from a remarkable increase at the very end of the entitlement period, the indicator is relatively stable.

According to theory, one would probably expect more of an upward trend over time, especially as the end of the entitlement period comes nearer. The application number seems to take the minimum requirement of 8 to 12 applications a month enforced by the unemployment insurance as orientation. Case workers of the regional placement centre don't seem to pressure the unemployed into writing more applications as time passes by.

Graph 4: Search intensity

Note: The graph shows the average number of applications per week, giving equal weight to each unemployed registered in a certain week. The duration is plotted until the 104th week, after which the entitlement time frame expires. A total number of 738 unemployment spells are observed, 338 of which contain an ALMP participation at some stage of the spell ("unemployed with an ALMP"). Because of low observational numbers in certain weeks, a nine week moving average is used.

The changes in the **frequency of interviews** over time are shown in Graph 5. The similarity between the two groups is even more striking with this indicator: For the first 10 weeks the number of interviews per week is exactly the same. For the remainder of the spell the development seems similar for both groups, with the unemployed without an ALMP having a higher volatility and a slightly higher level. This indicator can be considered a result of both other indicators. Its downward trend clearly stems from the decreasing probability of a job interview over time, while the gently raising number of applications per week does little to offset this downward trend.
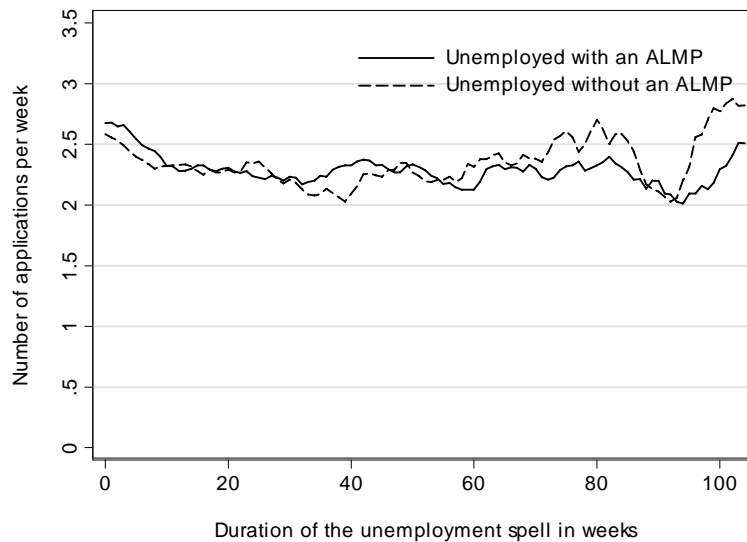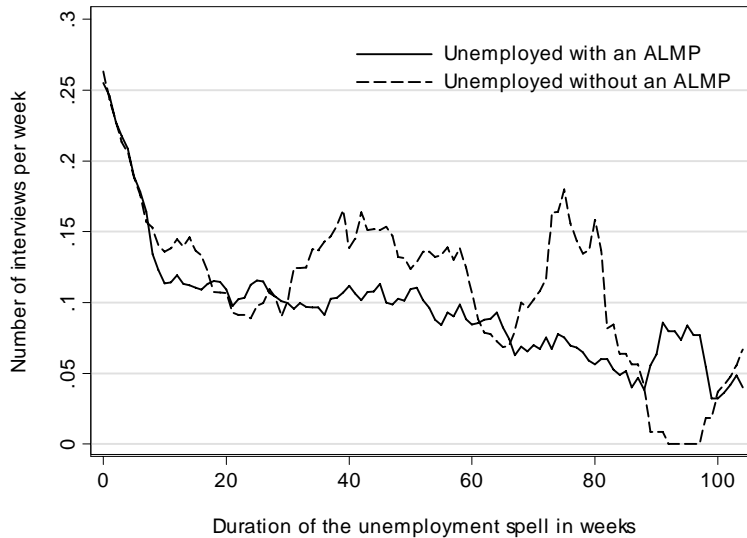
Graph 5: Frequency of interviews

Note: The graph shows the average number of interviews per week, giving equal weight to each unemployed registered in a certain week. The duration is plotted until the 104th week, after which the entitlement time frame expires. A total number of 738 unemployment spells are observed, 338 of which contain an ALMP participation at some stage of the spell ("unemployed with an ALMP"). Because of low observational numbers in certain weeks, a nine week moving average is used.

Summarizing, one can conclude that the differences between the two groups in all three indicators are very small. This is surprising as one would think behaviour and chances on the labour market as captured by the three indicators would be a main influence on the decision of ALMP participation. The closeness of the level and the development of the three indicators over the entire duration indicates that either a) the two groups are in fact very similar (i.e. that participation is random, at least in terms of labour market chances as captured by three indicators) and that the ALMPs have no influence at all, or b) that the ALMP participants actually do fare worse over time but that this is offset by the ALMPs.

6. Measuring the effect through Panel Regression

Unlike most studies on ALMP, which compare different persons with each other, the rich panel data at hand allows to compare applications of the same person over time. This eliminates a tremendous amount of unobserved heterogeneity. Because heterogeneity can be controlled for, widely understood statistical instruments like the regression method can be used, and there is no need to rely on strong assumptions.

Frame of Analysis
Whatever the estimation strategy or sample used, there are always three sets of regressions conducted in the following, one each for the three application indicators. For job interview probability the observational unit is the individual application and the dependent variable measures if the application resulted in a job interview (taking on the value 1 if successful, and 0 if unsuccessful). For the other two indicators, weekly number of applications and interviews, the panel is transformed so that the observational unit is one week of the unemployment spell. The unit shows the number of applications or interviews in that particular week.

The effect of the ALMP is captured by the regression coefficient of a dummy variable which indicates if the application was sent off before (0) or after the announcement (1). The announcement is chosen as the focal point as it divides the spell into a period before the application behaviour of the unemployed was influenced by a potential participation, and a period where it is influenced, therefore capturing all possible effects of the ALMP.

To calculate the coefficient of the effect dummy accurately, two sets of control variables are used. The first one is a set of 13 duration dummies which indicate in which months the application was sent off (the dummies are: 1st month, 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months). These dummies capture the influence of time in a very flexible way. It is a very important set of control variables, as two of three application indicators fall steeply over time. Without the duration variables, the results are heavily distorted. As applications after announcement are by definition later in the spell than applications before announcement, the estimation wouldn't correctly distinguish between the effect and the influence of time.

The second control set is a variable capturing the search intensity (as measured by the number of weekly applications) in the week the application was sent off. This also is important, because the probability could drop if the unemployed starts writing more applications, simply because the pool of jobs with good application chances is running dry. The variable is transformed by subtracting the mean. This assures an easy interpretation of the constant: The constant is the value the indicator takes before the announcement of the ALMP, at the beginning of the spell (in the first month, as this is the omitted dummy variable) and with an average number of applications sent off per week. This search intensity variable is only added to the regressions on interview probability: There is no point holding search intensity constant when modelling applications per week. It is not added to "interviews per week", because this indicator models the overall impact on getting an interview – and in estimating the overall effect, as many variables as possible should be allowed to change.

Note that the sets of control variables overall are parsimonious, only adding variables which would distort the calculations of the effect. The data is rich enough to add many other variables to the model, which would explain the outcome (like characteristics of the application). However, by adding more variables they are effectively held constant when estimating the effect. If the unemployed writes different applications, this should not be hold constant as it is part of the effect.

The estimation is done through Ordinary Least Square (OLS), and heteroskedasticity robust standard errors are reported. Fixed effects are included, and thereby all time invariant differences between the unemployed are controlled for. If not mentioned differently, data from all ALMP participants are used (there is no exclusion of outliers). All applications except the ones from the lay-off period and the last month are included. As described in the data chapter, these applications have to be dropped as both the lay-off period and the last month are subject to different rules by the unemployment insurance which would potentially distort the analysis.

Results

Table 2 shows the average effect of the ALMPs applied at the agency Staffelstrasse. The effect is large: An increase of 0.010 in the interview probability is the equivalent of 9.8 % when measured against the value of the constant, 0.102. The constant can be interpreted as the interview probability in the first month of unemployment, if the unemployed writes an average number of weekly interviews. At the time the average ALMP is announced (104 days after the unemployment spell has started (median)) that baseline interview probability has decreased to 0.056 (measured as the sum of the constant and the dummy for the fourth month of unemployment). The relative effect is then the equivalent to a rise of 17.9 %.

The effect on applications per week is relatively small: The unemployed write 0.092 applications per week more after the announcement. That is a relative increase of 3.1 % measured in the first month of unemployment, or 3.5 % measured after 104 days. Both effects, the effect on interview probability and the one on search intensity, feed into the effect of the third indicator, interviews per week. In absolute terms, the unemployed get invited to 0.028 interviews per week more than before the announcement. That is an increase of 9.5 % in the first month or 19.3 % after 104 days. Clearly, the lead indicator is the job interview probability, while the search intensity increases just a little through the ALMP and has only a small influence on the increase in interviews per week.

Despite the large size of the effect, the measurement is not statistically significant on any of the traditional significant levels (the 10%-level is just missed for interview probability). The standard errors are large, indicating that there is considerable heterogeneity hidden behind the average effects. This heterogeneity will be further investigated below.

The control sets behave as assumed: The duration dummies are highly negative and differ significantly from the omitted category, "1st month", when regressing on interview probability and interviews per week. They are mostly negative and significant when regressing on applications per

week. The effect of applications per week, when added to the regression on interview probability, is negative and significant on the 1%-level. The size of the coefficients (-0.003) shows that with each additional application written per week, the probability of a job interview decreases by 0.3 percentage points. Despite its statistical significance, the influence of this variable is small and not related to the effect of the ALMP. The estimation of the coefficient of the dummy of interest, the effect dummy, wouldn't change at all if this control variable is left away.

Dependent variable:	Interview Probability	Applications per week	Interviews per week
Overall effect ALMP	0.010	0.092	0.028
(Dummy is 1 after ALMP announcement)	(0.006)	(0.073)	(0.021)
Control set 1: Duration (omitted dummy: Month 1)			
Month 2	-0.038**	-0.208+	-0.143**
	(0.009)	(0.125)	(0.038)
Month 3	-0.052**	-0.265*	-0.164**
	(0.010)	(0.127)	(0.039)
Month 4	-0.046**	-0.280*	-0.151**
	(0.011)	(0.133)	(0.042)
Months 5 to 6	-0.052**	-0.303*	-0.156**
	(0.011)	(0.137)	(0.041)
Months 7 to 8	-0.060**	-0.297*	-0.185**
	(0.012)	(0.145)	(0.045)
Months 9 to 10	-0.070**	-0.221	-0.201**
	(0.013)	(0.157)	(0.047)
Months 11 to 12	-0.065**	-0.377*	-0.199**
	(0.014)	(0.166)	(0.050)
Months 13 to 15	-0.080**	-0.301+	-0.232**
	(0.015)	(0.180)	(0.053)
Months 16 to 18	-0.095**	-0.269	-0.256**
	(0.016)	(0.204)	(0.056)
Months 19 to 21	-0.105**	-0.327	-0.287**
	(0.019)	(0.235)	(0.061)
Months 22 to 24	-0.087**	-0.431	-0.249**
	(0.022)	(0.262)	(0.069)
Month 25 and more	-0.129**	-0.308	-0.372**
	(0.030)	(0.317)	(0.082)
Control set 2: Applications per week	-0.003**		
	(0.001)		
Fixed effects	yes	yes	yes
Constant	0.102**	2.946**	0.296**
	(0.009)	(0.118)	(0.038)
Sample			
All unemployed / only ALMP participants	ALMP	ALMP	ALMP
Number of applications or weeks	17910	6518	6518
Number of unemployed	338	338	338
Estimation			
OLS	yes	yes	yes
R-squared (including fixed effects)	0.1454	0.1868	0.1163
F-value	3.9327	3.7569	4.5388

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used.

Table 2: The overall effect of an ALMP on the three indicators

Although the overall effects are not statistically significant when measured as the average over all participants, there are some groups which gain heavily from the ALMP. The most important of these groups in terms of size and the gain through the ALMP is the group of the unemployed with a long term unemployed (LTU, i.e. a duration of more than 12 months) forecast. The forecast is an individual duration prediction recorded by the case worker at the start of the unemployment spell. Among ALMP participants, both groups of unemployed with a LTU forecast and unemployed ones are roughly of the same size.

Annex 2 shows the characteristics of groups split according to the duration forecast. In average, the unemployed with a LTU forecast are older and worked more often in the hospitality industry and public administration. This group has an above average proportion of unemployed with no further education. In terms of ALMP, they participate more often in employment programmes and personality oriented courses, less often in Basic courses and language courses.

Because the two groups differ largely regarding the ALMP effect, the results are shown again in Table 3, this time with the sample split into two: One regression is conducted for the group with a forecast of more than 12 months (LTU); the other regression only uses data from the group with a forecast of less than 12 months (Non-LTU). The results show that the effect is very strong for unemployed with an LTU forecast while quite weak for the other group, no matter what indicator is examined. The group with a LTU forecast experiences an increase of 0.014 in interview probability. Measured against their baseline probability in month one (as measured by the constant), this effect is equivalent to 18.9 %. After 104 days, the effect is equivalent to an enormous increase of 45.2 %. Applications per week increases by 0.198 (an increase of 7.1% in the first month and 7.4% after 104 days), once the ALMP has been announced. And the third indicator, interviews per week, increases by 0.011 (20.0% in the first month, 60.9 % after 104 days). The effect of ALMP on the application indicators of participants with an LTU forecast is positive, very large and statistically significant.

Unemployed with a forecast of less than 12 months on the other hand only show an increase of 0.003 in the interview probability (which is equivalent to 2.3 % after the first month, 4.5 % after 104 days), an increase of 0.029 (1.0 %, 1.1 %) and an increase of 0.011 interviews per week (3.0 %, 6.0 %). The ALMP have also a positive effect on this group. Indeed, a 6 % increase in interviews per week is still quite large. Compared with the group with a LTU forecast, the effect pales though.

Dependent variable:	Interview Probability		Applications per week		Interviews per week	
Subsample: Forecast =	LTU	Non-LTU	LTU	Non-LTU	LTU	Non-LTU
Overall Effect ALMP	0.014*	0.003	0.198*	0.029	0.042+	0.011
(Dummy is 1 after ALMP announcement)	(0.007)	(0.010)	(0.099)	(0.107)	(0.021)	(0.036)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes
Constant	0.074**	0.128**	2.791**	2.982**	0.210**	0.367**
	(0.013)	(0.012)	(0.197)	(0.142)	(0.055)	(0.050)
Sample						
All unemployed / only ALMP participants	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	9451	7835	3496	2851	3496	2851
Number of unemployed	166	162	166	162	166	162
Estimation						
OLS	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1868	0.1163	0.2242	0.1806	0.2747	0.1790
F-value	3.7569	4.5388	1.0943	0.8253	2.6059	3.0147

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Table 3: The overall effect of an ALMP, sample split according to the duration forecast

The next table (Table 4) shows the decomposition of the overall effect into its partial effects. The simple dummy measuring the overall effect is substituted by three dummies which switch to 1 when the application is written after the announcement and before the start of the ALMP (threat effect), or between start and end of the ALMP (lock-in effect) or after the ALMP has finished (skill enhancement and signal effect). Their coefficients compare the effect relative to the situation before announcement.

Dependent variable:	Probability of a Job Interview			Applications per week			Interviews per week		
Subsample: Forecast =	All	LTU	Non-LTU	All	LTU	Non-LTU	All	LTU	Non-LTU
Partial Effects									
Threat Effect	0.009	0.001	0.006	0.104	0.246*	-0.008	0.032	0.018	0.022
(Dummy is 1 between announcement and start)	(0.007)	(0.008)	(0.012)	(0.085)	(0.123)	(0.121)	(0.027)	(0.026)	(0.043)
Lock-in Effect	0.010	0.021**	-0.001	0.081	0.175	0.074	0.026	0.053*	-0.006
(Dummy is 1 between start and end)	(0.007)	(0.008)	(0.012)	(0.083)	(0.108)	(0.127)	(0.023)	(0.024)	(0.042)
Skill enhancement and signal effect	0.010	0.030**	-0.009	0.055	0.152	0.032	0.023	0.075*	-0.027
(Dummy is 1 after ALMP ends)	(0.009)	(0.010)	(0.015)	(0.102)	(0.134)	(0.157)	(0.029)	(0.032)	(0.051)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.102**	0.085**	0.125**	2.929**	2.758**	2.988**	0.293**	0.233**	0.357**
	(0.009)	(0.015)	(0.012)	(0.126)	(0.208)	(0.150)	(0.039)	(0.059)	(0.050)
Sample									
All unemployed / only ALMP participants	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	17910	9451	7835	6518	3496	2851	6518	3496	2851
Number of unemployed	338	166	162	338	166	162	338	166	162
Estimation									
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1454	0.1875	0.1164	0.2232	0.2243	0.1807	0.2165	0.2753	0.1794
F-value	3.4888	3.4927	3.9844	0.7345	1.0078	0.7449	2.0925	2.3134	2.6080

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Table 4: The overall effect of an ALMP, with interaction terms depicting partial effects

All partial effects result in sizeable changes on at least one indicator, but not all of them in the direction proposed by the theory. Regarding the threat effect, there is indeed evidence of changes showing up on the indicator "applications per week" once the ALMP has been announced. The effect only exists for the group with a LTU forecast where it is strong (+ 8.9 % more applications per week, when measured against the constant). The group without a LTU forecast shows no sign of the threat effect.

The lock-in effect doesn't seem to exist at all. The unemployed don't seem to decrease their search intensity once the ALMP has started; on the contrary. The LTU group increases search efforts by 6.3 %, although this effect is not statistically significant. At the same time, the LTU group experiences a steep increase in the interview probability which overall results in a similarly steep increase on interviews per week. The group without a LTU forecast doesn't show any changes worth mentioning. The lack of a lock-in effect during the ALMP is not so much surprising from a practical point of view as many of the ALMPs include application training. If the lock-in effect exists at all, it is overlaid by the skill enhancement effect which starts even before the ALMP has finished.

Once the ALMP has finished, the positive effect is very large for the group with a LTU forecast. The leading indicator is interview probability, but there is also an increase in search intensity, compared with the situation before the announcement. For interview probability and interviews per week, the measured effect is at its strongest here, indicating the strong sustainability of the positive ALMP effect for this group.

The non-LTU group on the other hand shows negative effects for probability and interviews per week after the ALMP has finished. These effects are relatively small and don't differ significantly from zero. The negative effects could therefore be purely random. If a negative effect would remain in a larger sample, its most likely explanation would be that it stems from a negative signal sent out to potential employers.

Sensitivity analysis
While there are good reasons why the main estimation (Table 2) has been conducted with the specification chosen (those reasons will be stated below), it is interesting to see how robust these estimates are when the estimation strategy is changed. In order to test this, the main model (Table 2) is changed in five aspects:

Test 1: Duration modelling
Test 2: Panel structure
Test 3: No anticipation assumption
Test 4: Handling of outliers
Test 5: Calculations without the personal applications
Test 6: Seasonal changes on the labour market
Test 7: Using different estimations (OLS with random effects, Logit and Poisson estimation)

The results of test 1 are shown in Annex 3. The standard model contains 13 dummies. This seems to be the best way to model the effect of time in a flexible way, allowing for non-linear influences. The results in Annex 3 show that if no time variables were used at all, the ALMP effects are negative for the whole sample and the group without a LTU forecast. They are still positive but relatively small for the LTU-group. This downward shift of the effect coefficients is to be expected; as the effect dummy now partly includes the negative effect of time on the indicators (it does that since the applications after the announcement are later in the spell than the applications before the announcement). The reason that the effects are still positive for the unemployed with a LTU forecast is that the effect is so large that it is more than offsetting the strong negative influence of time and increases chances even when measured against the very start of unemployment.

The model is then tested by adding a more simple set of time dummies (only 5 instead of 13), and by adding two continuous variables (duration in weeks, duration in weeks squared). The effects tend to be weaker for the whole sample and even negative for the group without a LTU forecast. The effect for the group with LTU forecast on the other hand is very robust. The test shows considerable robustness for the main finding so far; that ALMP should be used mainly for unemployed with low chances on the labour market.

Test 2 (Annex 4) shows what happens when all unemployed are added to the estimation, even the ones who haven't participated in an ALMP. The effects of the ALMP are much smaller. The reason for this is that the model assumes that the effect of duration is exactly the same for the ALMP-participants as for the rest of the unemployed. That is not necessarily true: Indeed, when using separate duration dummies for the treated and control groups, the coefficients of the separate duration dummies are quite different (not shown in the table). Using different duration sets, the size of the effect coefficients are practically the ones from before. There is no gain in adding the control group members to the regression, as they don't add any information on the size of the effect.

The third column shows the results when dropping the fixed effects and pooling all the applications. The same duration dummies are used for both groups here, but a new dummy variable is introduced, which switches to one if the unemployed writing the application is an ALMP participants at some stage of his or her spell (in the following referred to as the treated-dummy). The coefficient of this dummy is interesting, as it is negative, large and statistically significant on a 1%-level (for all three application indicators). This shows that there is large negative selection into the programs: The participants have a lower performance than non-participants. If separate duration dummies are added for the two groups, the treated-dummy is still negative and large, but a lot less so than in the regression before (with the exception of applications per week). Obviously, a major difference between the two groups lies in the changes of their application performance over time.

In a last step of this test, many characteristics are added to the regression, which level out the differences between participants and non-participants which can be explained by these characteristics. The added variables are gender (dummy), Swiss/Foreigner (dummy), age (4 dummies), educational

background (6 dummies), former industry (11 dummies) and knowledge of German (5 dummies). The separate duration dummies are kept in the regression. Indeed, through this the treated dummy is now almost zero, at least for interview probability. It is even positive for applications per week and interviews per week, although the coefficient for the latter is small and not statistically significant.

What happens to the coefficient of the effect dummy? The effects get stronger on all three application indicators when moving from the regression with fixed effects to pooled regressions. They get stronger still when adding separate set of duration dummies. Once the set of characteristics of the unemployed are added, the coefficient get smaller again, in fact to about the size they have in the standard specification, using fixed effects and only the data from ALMP participants. This shows that the core results are robust in terms of the estimation of the counterfactual evolution of the three application indicators, even when comparing applications of persons who participated in an ALMP with applications of unemployed who didn't participate.

The next test, test 3, checks if the participants anticipated the ALMP. If that were the case, the threat effect would start to exert pressure well before the course was announced. In order to check for that a new dummy variable is introduced into the model. This dummy variable switches from 0 to 1 if the application was written during the month just before the announcement. If the participants don't anticipate the participation, the coefficient should be zero or close to it.

The results (Annex 5) show that the coefficients of this 'placebo' dummy are insignificant (even on the 10-% level) in all nine estimations. Some of the coefficients are relatively large, but this could be either due to anticipation of the ALMP or due to random fluctuations. By introducing a dummy for the month before the announcement, the effect dummy now measures the difference between applications written a month before the announcement and applications written after the announcement. The performance of the first group of applications is slightly weaker than the average application before the announcement (as indicated by the positive placebo coefficients). Therefore, the estimated effect of the ALMP becomes larger in the placebo estimation. The average effect over all participants is now significant for the indicators interview probability and interviews per week. The differences between the group with a LTU forecast and the group without one remain large.

Test 4 (Annex 6), looks at the influence of outliers. Outliers were not excluded in the main estimation as there was no reason to suspect that the ALMP effect would be different for them. To conduct test 3, the main results are recalculated, this time without unemployed who show at any stage of their unemployment spell more than 15 applications a week or 5 interviews per week. Unemployed with an overall interview probability above 0.75 are not covered. If the unemployment spell is longer than 2 years, it is cut off after this point. Overall, 314 applications are deleted (1.8 % of the observations), 19 of them from unemployed with a LTU forecast. Accordingly, the results for the participants with a LTU forecast changes very little (the effect becomes a bit stronger on two of the three indicators). For the group without the LTU forecast on the other hand, the effect gets weaker on two of the indicators. Again, the main conclusion, that ALMP should be mainly used on LTU-unemployed, remains valid.

Test 5 (Annex 7) recalculates the estimates, this time only using applications which were marked as written or telephonic applications, excluding personal applications. The reason for this is that there was some confusion about the meaning of "job interview" when unemployed were carrying out personal applications (as described in chapter 4). This could hold large potential changes as 11.7 % of the applications were personal ones. Leaving these applications away, the effect weakens for interview probability and interview per week when looking at the overall results and the results for group without a LTU forecast. Note that the overall results mainly change in the absolute coefficients. When calculating their relative size compared to the constant, the effect stays roughly the same. For the group with a LTU forecast, the coefficients stay exactly the same when examining the coefficients.

Test 6 (Annex 8) checks if one should include variables describing the state of the labour market. The test introduces monthly dummies for the observational period (a dummy for applications written in July, one for applications written in August etc.). The coefficients for these dummies were all insignificant (against the omitted category, July) and therefore not part of the main model. Including the dummies change the effect coefficients only little. However, for a data collection over a longer period, it would be necessary to introduce such variables.

The last check, test 7 (Annex 9), examines the changes when different estimation strategies are used. Using random effects instead of fixed effects in the regression doesn't make much of a difference. Most of the coefficients stay roughly the same. While the ALMP effect was insignificant when using

fixed effects, calculating the overall effect for all participants, the coefficients are statistically significant on a 10%-level for two of the three indicators (interview probability and interviews per week) when using random effects.

Modelling the first indicator, probability of a job interview, one could question if OLS is the correct estimation method. The dependent variable is a dummy variable, and traditionally in statistical textbooks the argument against OLS are that it produces estimated values outside the logical range (0 to 1) and that it is subject to heterogeneity. OLS is used as the main estimation strategy in this paper as the prognostic values are not of interest and it therefore it doesn't matter too much if a few values are outside the logical range. Heterogeneity has been controlled for by using robust estimators.

How would the results differ if a logistic regression would be conducted? In order to discuss the Logit estimates it is easiest to calculate the exponential value of the coefficients (the odd-ratios). These ratios can be interpreted as the increase in the chances of the outcome switching from zero to one caused by the independent variable. The overall effect on interview probability, 0.269, translates into an odd-ratio of 1.309, which means the ALMP increases the chances of a job interview by 30.9 % in average. This probability can also be calculated for the first month of unemployment (28.4 %). At day 104, the effect is 30.0 %. This is much larger than the estimates through OLS (9.8 % at the start and 17.9 % after 104 days), especially at the beginning of the spell, and the effect is statistically significant at the 5%-level. The OLS estimates therefore can be considered a lower boundary of the effect.

For the group with a LTU-forecast, the effect is 75.9 % in the first month, 81.7 % after 104 days when measured with the Logit procedure (OLS: 18.9 % and 45.2 %). For the unemployed without such a forecast, it is 7.9 % in the first month and 8.3 % after 104 days (OLS: 2.3 % and 4.5 %). Although the coefficients change, the main result regarding a much better effect for unemployed with a LTU forecast remains valid.

Modelling the third indicator, one could object to using OLS on terms that the interview is a rare event. Indeed, for most weeks, the count is zero (88.9 %), for some weeks one (8.2 %), and for even fewer more than one. The standard solution to rare events and count variables is an estimation based on the Poisson distribution. Again, the coefficients are not directly interpretable, but have to be transformed into odd-ratios by using the natural exponential. Just like the Logit-estimation, the Poisson results are much larger than the pure OLS-estimation: For the first month, the increase in interviews per week is 22.0 % when measured over the whole sample of participants (OLS: 9.5 %). After 104 days it is 26.6 % (OLS: 19.3 %). For the unemployed with a LTU forecast, the increase is 43.9 % in the first month of the spell and 54.7 % after 104 days (OLS: 20.0 % and 60.9 %), for the other group 11.3 % and 8.0% (OLS: 3.0 % and 6.0 %). Again, most of the estimated effects are larger. As with the Logit estimates, one can conclude for the Poisson results that the OLS estimates mark the lower boundary.

Concluding over the seven tests conducted, the results show that the coefficients are mostly quite robust. The coefficients are particularly stable for the group of the LTU-unemployed. The coefficients for the non-LTU group vary and even change signs, but stay small. In relation to the estimation through logistic regression and Poisson regression, the OLS estimates seem to mark the lower boundary of the effect. The main result, that the effect is much larger for the LTU group, holds throughout all changes.

7. Who gains?

The regressions in the last chapter show the average effect over all participants, over the unemployed with a LTU forecast and over unemployed without such a forecast. Because of its panel structure, the data set allows to go beyond these average results, calculating individual treatment effects for each participant. This is useful because it gives further insights into which groups gain most from the ALMP.

Technically, the individual effects are calculated using the residuals after estimating the main models (Table 2). The residuals capture everything which cannot be explained through the average treatment effects, the duration dummies, the search intensity variable and the fixed effect. Latter makes sure that any time-invariant personal characteristics are not part of the residual. The only systematic component in the residuals should therefore be the personal treatment effect, measured as the deviation from the

average effect. It is captured by calculating the difference between the mean of all the residuals before the announcement and the mean of all the residuals after the announcement. In order to calculate the absolute individual treatment effect, the difference is simply added to the average ALMP effect. Note that the effect can only be calculated for participants with at least one observed application before the ALMP announcement and one observed application after the announcement. Altogether, the individual effects can be calculated for 203 unemployed.

Graph 6 shows the average effect of the ALMPs on the three indicators. It illustrates that there are many winners, but also some losers among the participants.
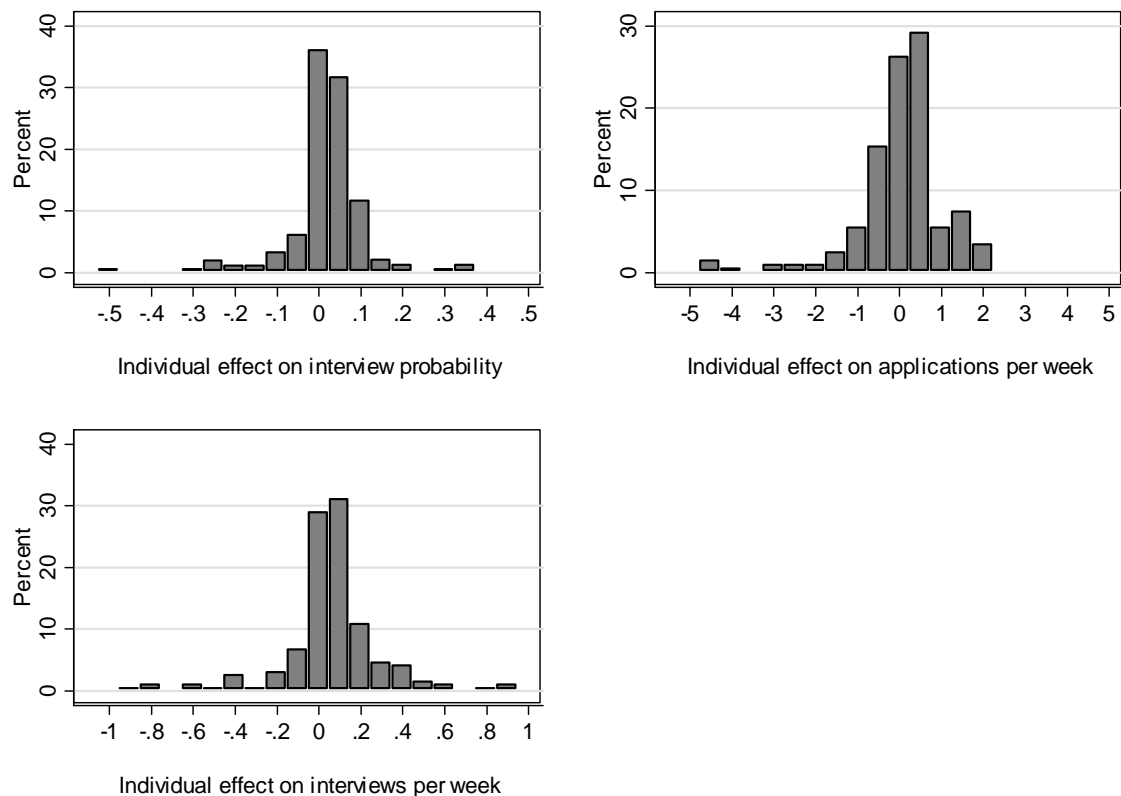
Graph 6: Distribution of the individual effects
Note: The graph shows the distribution of the ALMPs' effect on the three indicators (as calculated from the estimation in Table 2). Data from 203 unemployed was used (the effect can only be calculated for participants with at least one observed application before the ALMP announcement and one observed application after the announcement). A few outliers are not shown in the graphs (interview probability: four persons below 0.5 and one above 0.5; applications per week: one below -5 and two above 5; interviews per week: seven below -1 and three above 1).

Regressions can now be run, explaining the individual effects through different independent variables to see under what circumstances the ALMP effect is increased or diminished. The first set of independent variables used is a set of ALMP type dummies (Table 5). In order not to overstretch the number of observations, each category of ALMP entails at least 16 unemployed persons. This is admittedly a very low number still, so the results should be taken as preliminary. The categories used are "basic course" (which focuses on a situation analysis, general information about unemployment and application training), "personality oriented course" (assessing and developing soft skills), "basic qualification course" (alphabetization and very basic German), "language course" (German courses), "other courses" (IT courses and vocational training for different industries) and "employment programmes" (workplaces for the unemployed with a training component). The observational number is indicated in parentheses in Table 5).

The different types have very different effects. The results based on all types of applications (the first columns in Table 5) show that the omitted category, basic course, has strong positive effects on all three indicators (its coefficient are shown by the constant). Interview probability rises by 0.029 (compared to the overall effect of ALMP of 0.010, see Table 2), applications per week by 0.030

(overall 0.092) and interviews per week by 0.081 (0.028). Against the strong performance of this type of ALMP which is also the most commonly used one, all other types fare worse, at least in terms of interview probability and interviews per week (the ALMP type coefficients show the relative performance compared to the omitted category, the basic course).

Apart from the basic course, the categories "other course" and basic qualifications course also do well. The effect of the language courses is around zero as can be seen by adding the coefficients of the constant and the coefficient of the language course. Employment programmes and personality oriented courses do even worse, resulting in a negative effect on the application performance of its participants.[3] Note that all coefficients but one (the effect of the basic course on interview probability) are insignificant despite their large size. This means that not all participants have the same gain from the ALMP types and there is a lot of variation in these individual effects, even when split up according to the ALMP type. Since the observational number is quite small, one would probably obtain significant differences with a larger sample.

Dependent variable: Individual ALMP effect on:	Interview Probability		Applications per week		Interviews per week	
Subsample (all applications / non-personal a.):	all	non-personal	all	no personal	all	non-personal
ALMP Type (omitted: Basic course (90 participants))						
Personality oriented course (30 participants)	-0.059	-0.056	0.030	0.157	-0.138	-0.038
	(0.040)	(0.048)	(0.238)	(0.260)	(0.116)	(0.084)
Basic qualifications course (16 participants)	-0.005	0.003	-0.038	0.460	-0.035	-0.004
	(0.015)	(0.018)	(0.230)	(0.363)	(0.072)	(0.072)
Language course (17 participants)	-0.027	0.020	-0.386	0.146	-0.087	0.026
	(0.029)	(0.022)	(0.375)	(0.490)	(0.118)	(0.083)
Other course (18 participants)	-0.001	0.028	0.049	0.302	-0.069	0.026
	(0.048)	(0.047)	(0.285)	(0.248)	(0.159)	(0.086)
Employment programme (32 participants)	-0.036	-0.026	-0.014	0.114	-0.098	-0.088
	(0.034)	(0.035)	(0.220)	(0.237)	(0.105)	(0.104)
Constant	0.029+	0.011	0.122	0.076	0.081	0.043
	(0.015)	(0.017)	(0.179)	(0.189)	(0.070)	(0.070)
Sample						
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of unemployed	203	199	203	203	203	203
Estimation						
OLS	yes	yes	yes	yes	yes	yes
R-squared	0.0207	0.0216	0.0072	0.0090	0.0092	0.0057
F-value	0.8004	0.9313	0.2930	0.5021	0.4760	0.5075

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
Data from 203 unemployed used (the effect can only be calculated for participants with at least one observed application before the ALMP announcement and one observed application after the announcement). The number is lower for the estimation of the individual effect on interview probability without personal applications, as the observation has to be dropped if the one application before or after the announcement was a personal one.

Table 5: The effect of different types of ALMP

As shown by the sensitivity test 4 in the last chapter, the average ALMP effect is relatively stable whether all applications are used or only the non-personal one. When calculating the regressions on the personal effect however, there are a few interesting changes once the personal applications are excluded (shown Table 5, second columns). Note that the individual effects without personal application are obtained by running the main regression without personal applications, and calculating the individual effects through the residuals as described above. First of all there is a downward shift of the individual effects of the basis course. This is as expected, as the number of interviews and applications per week diminishes by leaving some of the applications resulting in interviews away. The interview probability decreases because personal applications have a high success rate and lead to more interviews than the average application. Even if the relative impact of the ALMP would stay roughly the same, the absolute effect as measured by the coefficient would have to drop.

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[3] Interestingly, those two ALMP types are also the longest ones. This raises the questions if the lock-in effect is responsible for the weak performance. This doesn't seem to be the case, as the search intensity as measured by the number of applications per week is not reduced during these two types. Rather, it is the interview probability which is decreased during and after the ALMP.

Interestingly the relative performances of some ALMP types change as well. Using non-personal applications, language courses and "other course" fare much better and take the lead. There are two possible explanations: Either these ALMP work better for non-personal applications or the ALMP has an effect onto the coding on the self-reporting sheets where the unemployed record their applications. Maybe personal applications which are only brief encounters with an employer are less likely to be recorded as an interview, once the course started. This of course would have a negative impact on the estimated effect of the ALMP. Generally, it is not possible to test which explanation is more likely. For future research, it is advisable to define the term "job interview" even more clearly.

For this study, the exact ranking of the ALMP types does not matter, since the results are based on few observations and are preliminary. One stable result in Table 5 is the bad performance for employment programmes and personality oriented courses. Even on this preliminary level, this is a worrying sign.

In order to find out under which circumstances the ALMP work best, characteristics can be added to the regression. The dataset is very rich and allows for a multitude of factors to be tested. However, the influence of many of those factors is not large enough to be significant on basis of the small observational set. Three factors have been singled out for their strong influence which shall be described here (Table 6).

The first one of these factors is employer contact during the ALMP. According to a survey conducted among government employees responsible for the organization of the ALMP, many ALMP feature direct employer contact, overall 77 % (see Annex 10 for the distribution for the ALMP types). When added to the regression on individual effect, the coefficients of this dummy variable are very large: having employer contact increases the ALMP effect on interview probability by 0.101 and the number of interviews by week by 0.257 (both effects significant on the 1%-level). Of course, it is possible that employer contact is just an indicator for a more business friendly ALMP. Maybe the ALMP organizer has good industry contacts which she or he uses to help the unemployed find a job.

If the unemployed searches for a job in the same occupation as previously held (overall 73 % of all ALMP participants), he or she shows a much better ALMP effect. A search for a job in the same occupation increases the ALMP effect on interview probability by 0.053, the effect on applications per week by 0.189 and the effect on interviews per week by 0.122 compared to searching a job in another occupation. This sheds a critical light on retraining, where participants learn new skills because they cannot or do not want to go back to their old occupation. One could argue that this is merely an indication for motivation, but the effect is unchanged when adding an extra variable for motivation (motivation has a strong positive effect, but the effect is not statistically significant).

As a last characteristic, the forecast of the case worker on duration is added to the regression. Three groups are used here, and the gains for persons with a longer duration forecast seem to hold even if comparing persons with 0 to 5 months forecasts with the ones of 7 to 11. Comparing the two extreme ends, unemployed with 0 to 5 months forecasts and those with a LTU forecast, the following differences are statistically significant: The ALMP effect on interview probability is 0.068 higher and the effect on interview per week 0.227 higher.

Leaving those three mentioned characteristics constant, the ALMP type performances stay roughly the same, in terms of relative ranking. Other courses, language and basic qualification courses stay at the top of the game, employment programme and personality oriented courses at the bottom. One change is that basic courses fare considerable worse in this estimation (probably because they are stripped of one of their main assets, the direct employer contact). There seems to be a lot of differences in the performance of the ALMP types left which cannot be explained through the three variables introduced. With more data, it would be possible to introduce many more variables and test for different effects.

Dependent variable:	Interview Probability		Applications per week		Interviews per week	
Subsample (all applications / non-personal a.):	all	no personal	all	no personal	all	no personal
ALMP Type (omitted: Basic course (90 participants))						
Personality oriented course (30 participants)	-0.078+	-0.073	-0.020	0.121	-0.199	-0.086
	(0.041)	(0.048)	(0.239)	(0.258)	(0.124)	(0.097)
Basic qualifications course (16 participants)	0.052+	0.055+	-0.253	0.175	0.099	0.083
	(0.028)	(0.031)	(0.226)	(0.372)	(0.084)	(0.068)
Language course (17 participants)	0.051	0.094**	-0.533	-0.121	0.104	0.154*
	(0.037)	(0.036)	(0.365)	(0.483)	(0.121)	(0.073)
Other course (18 participants)	0.054	0.080	-0.096	0.066	0.059	0.108
	(0.048)	(0.050)	(0.293)	(0.239)	(0.148)	(0.076)
Employment programme (32 participants)	-0.035	-0.015	-0.094	-0.018	-0.118	-0.113
	(0.035)	(0.039)	(0.213)	(0.234)	(0.108)	(0.105)
Direct employer contact during the ALMP	0.101**	0.094*	-0.155	-0.306	0.257**	0.174*
	(0.034)	(0.042)	(0.195)	(0.203)	(0.093)	(0.079)
Participant is searching for a job in the same profession than previously held	0.053+	0.080*	0.189	-0.016	0.122	0.082
	(0.029)	(0.035)	(0.216)	(0.244)	(0.086)	(0.075)
Unemployment duration forecast (omitted: Forecast 12 months and more & forecast unknown)						
Forecast 0 to 5 months	-0.068*	-0.063+	-0.281	-0.261	-0.227+	-0.195*
	(0.034)	(0.037)	(0.254)	(0.286)	(0.115)	(0.093)
Forecast 6 to 11 months	-0.045	-0.020	-0.098	-0.089	-0.164	-0.120
	(0.031)	(0.033)	(0.191)	(0.217)	(0.103)	(0.094)
Constant	-0.056+	-0.103+	0.225	0.466	-0.092	-0.059
	(0.034)	(0.053)	(0.248)	(0.285)	(0.089)	(0.070)
Sample						
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of unemployed	203	199	203	203	203	203
Estimation						
OLS	yes	yes	yes	yes	yes	yes
R-squared	0.1085	0.1091	0.0092	0.0187	0.0612	0.0419
F-value	1.4134	1.4822	0.4760	0.5471	1.1924	1.3903

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
Data from 203 unemployed used (the effect can only be calculated for participants with at least one observed application before the ALMP announcement and one observed application after the announcement). The number is lower for the estimation of the individual effect on interview probability without personal applications, as the observation has to be dropped if the one application before or after the announcement was a personal one.

Table 6: The effect different types of ALMP, controlling for different characteristics

One has to keep in mind that Table 5 shows the effect the way the ALMP types are currently used on the unemployed of the agency Zurich-Staffelstrasse. These estimates do not just tell a story about the ALMP itself, but also about its participants and how well they are adapted to the course itinerary (or the other way round). To improve performance of the ALMP types, one can adapt the ALMP to the existing participants, or select the participants differently for an existing ALMP, or one can do both.

8. Getting a job

A possible criticism to the new approach could be the fact that job interviews are only a stepping stone on the way to find a new job and end unemployment. While this is true by definition, a job interview does take you a far way, as the data shows. The following numbers are based on the data of all unemployed who started the spell after 1st of July 2007 and ended it before 31st of March 2008. Only for this group the entire application history from start till end of the unemployment spell is known.

The average person who exited the public placement office with a job wrote 36 applications (median). Please note that this is a group with above average chances, because they found a job during the nine months of unemployment monitored. The probability of getting the job when writing an application is therefore 2.8 %. Within that process, the biggest hurdle by far is getting a job interview. In average, it

took the unemployed 12 applications for each job interview, resulting in a probability of 8.3 %. It then took them in average 3 interviews to actually get a job. The chances of a job, given an interview, are 33.3 %.

The relative impact of the ALMPs on the overall probability of a job remains exactly as measured by the different regressions in this study, as long the ALMP doesn't change the probability of a job interview. This is unlikely of course, as most acquired know-how would work in the job interview environment as well as when writing the application (e.g. language skills, self assurance, showing newly acquired job skills). It is therefore plausible that the effects of an ALMP are going have an effect on the probability of the job, given an interview, as well.

It is difficult to envisage a characteristic which has a positive impact on getting to an interview, but then a negative one on getting the job (or the other way round). The calculated effects on the probability of a job interview can therefore be taken as a lower boundary of the overall effect on getting a job.

9. Conclusion

While many previous studies applied methods which had to rely on strong assumptions in order to calculate accurate and unbiased estimates of the ALMP effect, the new approach used in this study doesn't. This is possible through the use of new indicators and data, which allows measuring the outcome several times before, during, and after the ALMP. This allows excluding time-invariant characteristics and by that solves the selection bias.

The new instrument can be relatively easily applied to measure the effect of ALMPs by labour market institutions, as it combines several good controlling characteristics: It is a detailed, accurate and unbiased instrument utilizing relatively simple statistical tools. It can be easily understood by the persons responsible for the controlling process and communicated to involved partners. This makes it a trustworthy controlling instrument. It is cheap, the biggest cost involved being the case worker having to update the application sheets (that is not necessarily a cost though as it shows to the unemployed that these sheets are taken seriously). It can be easily and regularly updated.

The method was applied as a trial run in one agency in Switzerland at Zurich-Staffelstrasse. 30'000 applications were collected, along with much information on the unemployed and the ALMP used. Through this, a very rich dataset could be assembled. Estimates based on this data show that on average, the ALMPs have a strong positive effect on the chances of a job interview, the weekly number of applications and the weekly number of interviews when applied to unemployed with a long term unemployment forecast. Applied to unemployed without such a forecast, the ALMP show relatively little impact. There are stark differences between the ALMP types as well. While most types do well, personality oriented courses and employment programmes have a negative impact on the application performance of the unemployed. These are preliminary results of course since they stem from the unemployed of a single agency.

In order to gain more insight into the ALMPs and to start using the proposed method as a controlling tool, more data now needs to be collected. Because scanning of the application sheets has become standard in Switzerland by 2009, many obstacles have already been cleared. ALMPs are an expensive tool in financial terms. If they don't work, they are costly in human terms too, because both the participants and the case worker hope that these programs will shorten unemployment. It is time to start controlling this instrument thoroughly and on the basis of quantitative data, and thereby improve its quality and reputation.

Literature

Abadie, A., Drukker, D., Herr, J. L. and G. W. Imbens (2004), Implementing Matching Estimators for Average Treatment Effects in Stata. *Stata Journal* 4(3): 290-311.

Black, D. A., Smith, J. A., Berger, M. C. and B. J. Noel (2003), Is the Threat of Reemployment Services More Effective than the Services Themselves? Evidence from Random Assignment in the UI System, *American Economic Review* 93, 1313-1327.

Caliendo, M., and S. Kopeinig 2008, Some Practical Guidance for the Implementation of Propensity Score Matching, *Journal of Economic Surveys* 22(1), 31–72.   .

Carling, K., and K. Richardson (2004), The Relative Efficiency of Labor Market Programs: Swedish Experience from the 1990s, *Labour Economics* 11, 335– 354.

Falk, A., Lalive, R. and J. Zweimüller (2005), The Success of Job Applications: A New Approach to Program Evaluation", *Labour Economics* 12(6), 739-748.

Gerfin, M. and M. Lechner (2002), A Microeconometric Evaluation of the Active Labour Market Policy in Switzerland, *Economic Journal* 112(482), 854-893.

Heckman, J. J., LaLonde, R. J. and J. A. Smith (1999), The Economics and Econometrics of Active Labor Market Programs, *Handbook of Labor Economics*, Vol. III, ed. by O. Ashenfelter and D. Card.

Heckman, J. J., Ichimura, H., and P. E. Todd (1997), Matching as an Econometric Evaluation Estimator: Evidence from Evaluating a Job Training Program, *Review of Economic Studies*, Vol. 64(4).

Lalive, R., van Ours, J. C. and J. Zweimüller (2000), The Impact of Active Labor Market Policies and Benefit Entitlement Rules on the Duration of Unemployment, IZA Discussion Paper No. 149.

Lalive, Rafael, van Ours, J. C. and J. Zweimüller (2008), The impact of Active Labor Market Programs on the Duration of Unemployment in Switzerland, *Economic Journal* 118(525), 235-257.

Lalive, R., Zehnder, T. and J. Zweimüller (2006), Makroökonomische Evaluation der aktiven Arbeitsmarktpolitik der Schweiz, Swiss State Secretariat for Economic Affairs (SECO).

Lechner, M. and J. Smith (2007), What is the Value Added by Caseworkers? *Labour Economics* 14(2), 135-151.

Peikes, D. N., Moreno, L., and S. M. Orzol (2008), Propensity Score Matching: A Note of Caution for Evaluators of Social Programs, *The American Statistician* 62(3), 222-231.

Ragni, T. (2007), Die Wirksamkeit der öffentlichen Arbeitsvermittlung in der Schweiz, Direktion für Wirtschaftspolitik Diskussionspapier, Swiss State Secretariat for Economic Affairs (SECO).

Rosholm, M. and M. Svarer (2004): Estimating the Threat Effect of Active Labour Market Programmes, IZA Discussion Papers 1300, Institute for the Study of Labor (IZA).

Sianesi, B. (2004), An Evaluation of the Swedish system of Active Labour Market Programmes in the 1990s, *Review of Economics and Statistics* 86(1), 133–155.

Smith and Todd (2005): Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?, *Journal of Econometrics* 125, 305–353.

Annex

Annex 1: Applications recorded in a typical month at Zurich-Staffelstrasse
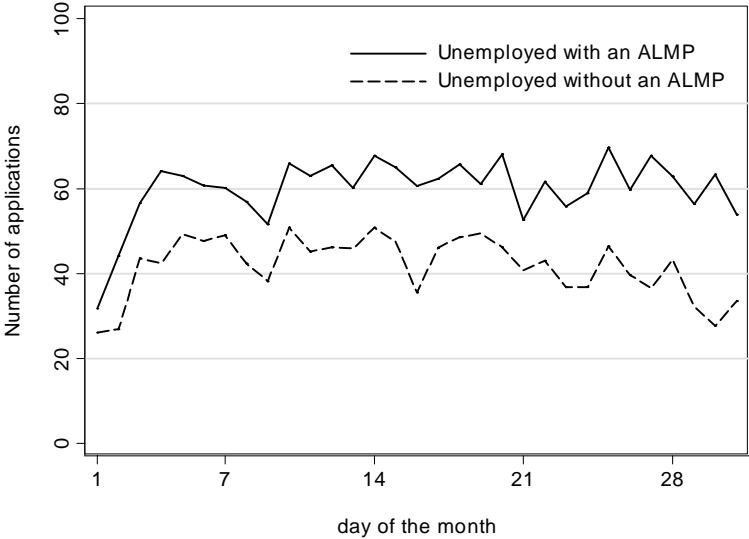
Note: Averages over the nine month of data collection are shown. Day 30 and day 31 were reweighed because their lower number of appearance. December was not taken into account.

Vertraulicher Entwurf

Annex 2: Characteristics of ALMP participants

Sample split based on unemployment duration forecast

Unemployment duration forecast:	0-6 months	7-12 months	13 and more months	no forecast
Age	35.20	39.58	42.54	44.70
Women	0.57	0.44	0.48	0.20
Swiss	0.50	0.49	0.48	0.60
Industry				
No answer, first sector or "private household	0.35	0.18	0.14	0.00
Industry	0.11	0.06	0.08	0.30
Building and Constructing	0.07	0.21	0.14	0.00
Trade and Commerce	0.19	0.18	0.22	0.10
Hospitality industry	0.02	0.05	0.06	0.10
Transport and Communication	0.04	0.03	0.03	0.10
Financial services	0.13	0.09	0.12	0.30
Business services (incl. IT)	0.04	0.02	0.02	0.00
Public administration	0.02	0.03	0.04	0.10
Health and social services	0.02	0.07	0.07	0.00
Other services	0.02	0.09	0.07	0.00
Highest attained educational				
no further education	0.35	0.40	0.50	0.40
Apprenticeship	0.22	0.19	0.19	0.30
Gymnasium	0.02	0.06	0.05	0.10
Technical college	0.15	0.16	0.07	0.00
University	0.15	0.07	0.08	0.20
Education not known	0.11	0.11	0.10	0.00
ALMP				
Basic course	0.63	0.54	0.31	0.30
Personality oriented course	0.06	0.11	0.16	0.30
Basic qualifications course	0.06	0.06	0.07	0.00
Language course	0.11	0.08	0.05	0.10
Other course	0.06	0.07	0.08	0.00
Employment programme	0.09	0.13	0.33	0.30
N	54	108	166	10

Note: Only unemployed with an ALMP at some stage of their spell are covered. Apart from Age, Baseline probability, ALMP treatment effect and N, all numbers are proportions

Annex 3: Sensitivity test 1 – Different types of duration modelling

Annex 3a) All ALMP participants

Dependent variable:	Probability of a Job Interview				Applications per week				Interviews per week			
Overall Effect ALMP	0.010	-0.011*	0.003	0.006	0.092	-0.003	0.042	0.034	0.028	-0.030	0.002	0.012
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.005)	(0.006)	(0.006)	(0.073)	(0.064)	(0.071)	(0.074)	(0.021)	(0.020)	(0.022)	(0.022)
Control set 1: Duration												
Specification 1: 13 Dummies (standard)	yes	no	no	no	yes	no	no	no	yes	no	no	no
Specification 2: No time dummies	no	yes	no	no	no	yes	no	no	no	yes	no	no
Specificiation 3: 5 dummies	no	no	yes	no	no	no	yes	no	no	no	yes	no
Specification 4: 2 variables (duration, duration squared)	no	no	no	yes	no	no	no	yes	no	no	no	yes
Control set 2: Applications per week	yes	yes	yes	yes	no	no	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.102**	0.058**	0.076**	0.086**	2.946**	2.750**	2.815**	2.816**	0.296**	0.159**	0.206**	0.233**
	(0.009)	(0.004)	(0.006)	(0.007)	(0.118)	(0.055)	(0.082)	(0.093)	(0.038)	(0.017)	(0.024)	(0.027)
Sample												
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	17910	17910	17910	17910	6518	6518	6518	6518	6518	6518	6518	6518
Number of unemployed	338	338	338	338	338	338	338	338	338	338	338	338
Estimation												
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1454	0.1428	0.1439	0.1441	0.2232	0.2217	0.2222	0.2218	0.2165	0.2116	0.2130	0.2133
F-value	3.9327	5.2290	4.8179	8.5117	0.7993	0.0025	0.6425	0.3146	2.3794	2.3028	2.5830	5.1520

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
Specification 1 contains the following 13 duration dummies: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. Specification 3 contains the following 5 duration dummies: 1-2 months (omitted), 3-4, 5-6, 7-12, 13 and more months. Specification 4 contains two continuous variables: duration in weeks and duration in weeks squared.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used.

Annex 3b) All ALMP participants with a LTU forecast

Dependent variable:	Probability of a Job Interview				Applications per week				Interviews per week			
Overall Effect ALMP	0.014*	0.001	0.017**	0.017*	0.198*	0.146+	0.120	0.173+	0.042+	0.008	0.045*	0.044*
(Dummy is 1 after the announcement of the ALMP)	(0.007)	(0.006)	(0.007)	(0.007)	(0.099)	(0.082)	(0.094)	(0.098)	(0.021)	(0.019)	(0.021)	(0.022)
Control set 1: Duration												
Specification 1: 13 Dummies (standard)	yes	no	no	no	yes	no	no	no	yes	no	no	no
Specification 2: No time dummies	no	yes	no	no	no	yes	no	no	no	yes	no	no
Specificiation 3: 5 dummies	no	no	yes	no	no	no	yes	no	no	no	yes	no
Specification 4: 2 variables (duration, duration squared)	no	no	no	yes	no	no	no	yes	no	no	no	yes
Control set 2: Applications per week	yes	yes	yes	yes	no	no	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.074**	0.037**	0.068**	0.071**	2.791**	2.584**	2.530**	2.649**	0.210**	0.097**	0.168**	0.177**
	(0.013)	(0.005)	(0.010)	(0.011)	(0.197)	(0.072)	(0.126)	(0.144)	(0.055)	(0.017)	(0.034)	(0.038)
Sample												
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	9451	9451	9451	9451	3496	3496	3496	3496	3496	3496	3496	3496
Number of unemployed	166	166	166	166	166	166	166	166	166	166	166	166
Estimation												
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1868	0.1826	0.1855	0.1841	0.2242	0.2217	0.2220	0.2222	0.2747	0.2677	0.2713	0.2694
F-value	3.7569	2.3486	5.6317	4.6663	1.0943	3.1247	0.8790	1.6401	2.6059	0.1710	3.2156	2.4159

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
Specification 1 contains the following 13 duration dummies: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. Specification 3 contains the following 5 duration dummies: 1-2 months (omitted), 3-4, 5-6, 7-12, 13 and more months. Specification 4 contains two continuous variables: duration in weeks and duration in weeks squared.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 3c) All ALMP participants without a LTU forecast

Dependent variable:	Probability of a Job Interview				Applications per week				Interviews per week			
Overall Effect ALMP	0.003	-0.026**	-0.014	-0.007	0.029	-0.077	-0.003	-0.005	0.011	-0.074*	-0.045	-0.020
(Dummy is 1 after the announcement of the ALMP)	(0.010)	(0.008)	(0.010)	(0.010)	(0.107)	(0.096)	(0.106)	(0.108)	(0.036)	(0.034)	(0.038)	(0.039)
Control set 1: Duration												
Specification 1: 13 Dummies (standard)	yes	no	no	no	yes	no	no	no	yes	no	no	no
Specification 2: No time dummies	no	yes	no	no	no	yes	no	no	no	yes	no	no
Specificiation 3: 5 dummies	no	no	yes	no	no	no	yes	no	no	no	yes	no
Specification 4: 2 variables (duration, duration squared)	no	no	no	yes	no	no	no	yes	no	no	no	yes
Control set 2: Applications per week	yes	yes	yes	yes	no	no	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.128**	0.083**	0.094**	0.106**	2.982**	2.803**	2.880**	2.933**	0.367**	0.231**	0.262**	0.299**
	(0.012)	(0.007)	(0.008)	(0.010)	(0.142)	(0.078)	(0.099)	(0.124)	(0.050)	(0.028)	(0.033)	(0.041)
Sample												
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	7835	7835	7835	7835	2851	2851	2851	2851	2851	2851	2851	2851
Number of unemployed	162	162	162	162	162	162	162	162	162	162	162	162
Estimation												
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1163	0.1098	0.1112	0.1111	0.1806	0.1779	0.1787	0.1791	0.1790	0.1685	0.1704	0.1706
F-value	4.5388	5.7811	3.8303	5.5780	0.8253	0.6398	0.6378	1.6006	3.0147	4.7486	2.0680	4.1293

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
Specification 1 contains the following 13 duration dummies: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. Specification 3 contains the following 5 duration dummies: 1-2 months (omitted), 3-4, 5-6, 7-12, 13 and more months. Specification 4 contains two continuous variables: duration in weeks and duration in weeks squared.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 4: Sensitivity test 2 – Panel structure

Annex 4a) All ALMP participants

Dependent variable:	Probability of a Job Interview					Applications per week					Interviews per week				
Overall Effect ALMP	0.003	0.010	0.012**	0.015**	0.009+	0.078	0.104	-0.024	0.053	0.034	0.014	0.028	0.031+	0.040*	0.027
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.006)	(0.004)	(0.005)	(0.005)	(0.070)	(0.073)	(0.053)	(0.057)	(0.057)	(0.021)	(0.022)	(0.016)	(0.017)	(0.017)
Control set 1: Duration (13 dummies)															
Specification 1: 13 dummies (same for treated and control)	yes	no	yes	no	no	yes	no	yes	no	no	yes	no	yes	no	no
Specification 2: 13 dummies (different for treated and control)	no	yes	no	yes	yes	no	yes	no	yes	yes	no	yes	no	yes	yes
Control set 2: Applications per week	yes	yes	yes	yes	yes	no	no	no	no	no	no	no	no	no	no
Panel or pooled estimation															
Fixed effects	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no	no	no
Pooled, specification 1 (treated dummy)	no	no	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no
Pooled, specification 1 (treated dummy and characteristics)	no	no	no	no	yes	no	no	no	no	yes	no	no	no	no	yes
Treatment dummy			-0.016**	-0.010	-0.001			0.006	0.198+	0.217*			-0.042**	-0.009	0.011
			(0.004)	(0.008)	(0.008)			(0.051)	(0.103)	(0.103)			(0.016)	(0.031)	(0.031)
Constant	0.094**	0.096**	0.106**	0.104**	0.100**	2.941**	2.985**	3.039**	2.987**	3.235**	0.278**	0.283**	0.317**	0.305**	0.301**
	(0.006)	(0.006)	(0.004)	(0.005)	(0.008)	(0.076)	(0.087)	(0.048)	(0.058)	(0.095)	(0.024)	(0.028)	(0.014)	(0.018)	(0.029)
Sample															
All unemployed vs. ALMP unemployed	all	all	all	all	all	all	all	all	all	all	all	all	all	all	all
Number of applications or weeks	29991	29991	29991	29991	29991	10805	10805	10805	10805	10805	10805	10805	10805	10805	10805
Number of unemployed	738	738	738	738	738	738	738	738	738	738	738	738	738	738	738
Estimation															
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared	0.1661	0.1665	0.0084	0.0090	0.0254	0.2432	0.2439	0.0061	0.0090	0.0195	0.2679	0.2681	0.0157	0.0161	0.0421
F-value	4.5976	3.2894	17.0056	10.0855	15.2798	0.8962	0.8396	4.7226	3.7452	4.2857	3.0052	1.7656	12.2969	6.7740	9.4412

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The pooled specification 1 lacks the individual fixed effects from the standard model but contains an extra dummy describing if the unemployed participates in an ALMP at any time during his or her spell (treated dummy).
The pooled specification 2 is like specification 1, but contains further variables: gender (dummy), Swiss/Foreigner (dummy), age (4 dummies), educational background (6 dummies), former industry (11 dummies) and knowledge of German (5 dummies). The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used.

Annex 4b) All ALMP participants with a LTU forecast

Dependent variable:	Probability of a Job Interview					Applications per week					Interviews per week				
Overall Effect ALMP	0.008	0.014*	0.009	0.018**	0.018**	0.184*	0.205*	0.057	0.120	0.126	0.026	0.040+	0.025	0.050*	0.054*
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.007)	(0.006)	(0.006)	(0.006)	(0.091)	(0.099)	(0.074)	(0.078)	(0.079)	(0.020)	(0.021)	(0.020)	(0.022)	(0.022)
Control set 1: Duration (13 dummies)															
Specification 1: 13 dummies (same for treated and control)	yes	no	yes	no	no	yes	no	yes	no	no	yes	no	yes	no	no
Specification 2: 13 dummies (different for treated and control)	no	yes	no	yes	yes	no	yes	no	yes	yes	no	yes	no	yes	yes
Control set 2: Applications per week	yes	yes	yes	yes	yes	no	no	no	no	no	no	no	no	no	no
Panel or pooled estimation															
Fixed effects	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no	no	no
Pooled, specification 1 (treated dummy)	no	no	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no
Pooled, specification 1 (treated dummy and characteristics)	no	no	no	no	yes	no	no	no	no	yes	no	no	no	no	yes
Treatment dummy			-0.011+	0.009	0.014			-0.061	0.259	0.216			-0.030	0.045	0.053
			(0.006)	(0.013)	(0.013)			(0.074)	(0.188)	(0.187)			(0.020)	(0.052)	(0.051)
Constant	0.060**	0.061**	0.063**	0.054**	0.053**	2.731**	2.793**	2.981**	2.859**	3.004**	0.166**	0.166**	0.187**	0.149**	0.148**
	(0.010)	(0.010)	(0.007)	(0.009)	(0.012)	(0.133)	(0.151)	(0.091)	(0.118)	(0.158)	(0.037)	(0.042)	(0.025)	(0.033)	(0.043)
Sample															
All unemployed vs. ALMP unemployed	all	all	all	all	all	all	all	all	all	all	all	all	all	all	all
Number of applications or weeks	14938	14938	14938	14938	14938	5497	5497	5497	5497	5497	5497	5497	5497	5497	5497
Number of unemployed	294	294	294	294	294	294	294	294	294	294	294	294	294	294	294
Estimation															
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared	0.1985	0.2002	0.0063	0.0088	0.0442	0.2379	0.2402	0.0045	0.0128	0.0380	0.2724	0.2746	0.0080	0.0121	0.0629
F-value	2.8518	2.7771	6.3018	4.8870	13.4826	0.6392	0.9621	1.7691	2.7294	4.3053	1.5716	1.6376	3.1571	2.5685	7.3164

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The pooled specification 1 lacks the individual fixed effects from the standard model but contains an extra dummy describing if the unemployed participates in an ALMP at any time during his or her spell (treated dummy).
The pooled specification 2 is like specification 1, but contains further variables: gender (dummy), Swiss/Foreigner (dummy), age (4 dummies), educational background (6 dummies), former industry (11 dummies) and knowledge of German (5 dummies). The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 4c) All ALMP participants without a LTU forecast

Dependent variable:	Probability of a Job Interview					Applications per week					Interviews per week				
Overall Effect ALMP	-0.005	0.003	0.012+	0.015*	0.005	0.020	0.040	-0.102	-0.034	-0.061	-0.006	0.013	0.026	0.037	0.011
(Dummy is 1 after the announcement of the ALMP)	(0.009)	(0.010)	(0.007)	(0.007)	(0.008)	(0.106)	(0.108)	(0.078)	(0.083)	(0.085)	(0.037)	(0.037)	(0.026)	(0.027)	(0.028)
Control set 1: Duration (13 dummies)															
Specification 1: 13 dummies (same for treated and control)	yes	no	yes	no	no	yes	no	yes	no	no	yes	no	yes	no	no
Specification 2: 13 dummies (different for treated and control)	no	yes	no	yes	yes	no	yes	no	yes	yes	no	yes	no	yes	yes
Control set 2: Applications per week	yes	yes	yes	yes	yes	no	no	no	no	no	no	no	no	no	no
Panel or pooled estimation															
Fixed effects	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no	no	no
Pooled, specification 1 (treated dummy)	no	no	yes	yes	no	no	no	yes	yes	no	no	no	yes	yes	no
Pooled, specification 1 (treated dummy and characteristics)	no	no	no	no	yes	no	no	no	no	yes	no	no	no	no	yes
Treatment dummy			-0.017**	-0.004	0.004			-0.045	0.099	0.144			-0.049*	0.002	0.029
			(0.006)	(0.011)	(0.011)			(0.074)	(0.132)	(0.133)			(0.024)	(0.043)	(0.043)
Constant	0.118**	0.121**	0.123**	0.119**	0.129**	3.009**	3.047**	3.068**	3.034**	3.273**	0.350**	0.361**	0.370**	0.355**	0.390**
	(0.007)	(0.008)	(0.005)	(0.006)	(0.012)	(0.085)	(0.099)	(0.060)	(0.071)	(0.141)	(0.030)	(0.036)	(0.020)	(0.023)	(0.046)
Sample															
All unemployed vs. ALMP unemployed	all	all	all	all	all	all	all	all	all	all	all	all	all	all	all
Number of applications or weeks	13923	13923	13923	13923	13923	4935	4935	4935	4935	4935	4935	4935	4935	4935	4935
Number of unemployed	411	411	411	411	411	411	411	411	411	411	411	411	411	411	411
Estimation															
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared	0.1429	0.1434	0.0092	0.0101	0.0224	0.2256	0.2266	0.0065	0.0098	0.0239	0.2606	0.2606	0.0189	0.0193	0.0396
F-value	4.7316	3.2168	8.6062	5.4410	6.3464	0.9171	0.7246	2.3081	1.9471	2.4457	3.9761	2.1136	6.7528	3.8630	4.1065

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The pooled specification 1 lacks the individual fixed effects from the standard model but contains an extra dummy describing if the unemployed participates in an ALMP at any time during his or her spell (treated dummy).
The pooled specification 2 is like specification 1, but contains further variables: gender (dummy), Swiss/Foreigner (dummy), age (4 dummies), educational background (6 dummies), former industry (11 dummies) and knowledge of German (5 dummies). The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 5: Sensitivity test 3 – no anticipation assumption

Dependent variable:	Probability of a Job Interview			Applications per week			Interviews per week		
Subsample: Forecast =	All	LTU	Non-LTU	All	LTU	Non-LTU	All	LTU	Non-LTU
Overall Effect ALMP	0.017*	0.017+	0.010	0.154	0.225+	0.021	0.046+	0.046	0.024
(Dummy is 1 after the announcement of the ALMP)	(0.008)	(0.010)	(0.014)	(0.097)	(0.127)	(0.153)	(0.028)	(0.029)	(0.047)
Placebo dummy	0.011	0.005	0.009	0.094	0.044	-0.011	0.026	0.007	0.018
(Dummy is 1 for applications written during the one month before announcement)	(0.008)	(0.009)	(0.012)	(0.099)	(0.125)	(0.152)	(0.029)	(0.030)	(0.049)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.099**	0.073**	0.125**	2.917**	2.782**	2.986**	0.288**	0.209**	0.361**
	(0.009)	(0.013)	(0.012)	(0.126)	(0.203)	(0.163)	(0.039)	(0.055)	(0.054)
Sample									
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications	17910	9451	7835	6518	3496	2851	6518	3496	2851
Number of unemployed	338	166	162	338	166	162	338	166	162
Estimation									
OLS (with robust standard errors)	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared	0.1455	0.1868	0.1163	0.2233	0.2242	0.1806	0.2166	0.2747	0.1791
F-value	3.8104	3.5105	4.2818	0.8563	1.0171	0.7715	2.3040	2.4330	2.8402

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

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Annex 6: Sensitivity test 4 – Estimation without outliers

Estimation without unemployed who show at any stage of their unemployment spell more than 15 applications a week or 5 interviews per week. Unemployed with an overall interview probability above 0.75 are not covered. If the unemployment spell is longer than 2 years, it is cut off after this point.

Dependent variable:	Probability of a Job Interview			Applications per week			Interviews per week		
Subsample: Forecast =	All	LTU	Non-LTU	All	LTU	Non-LTU	All	LTU	Non-LTU
Overall Effect ALMP	0.005	0.014*	-0.006	0.132+	0.203*	0.076	0.022	0.046*	-0.003
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.007)	(0.010)	(0.071)	(0.100)	(0.106)	(0.020)	(0.021)	(0.034)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.089**	0.072**	0.109**	2.897**	2.780**	2.946**	0.254**	0.192**	0.312**
	(0.009)	(0.013)	(0.012)	(0.113)	(0.199)	(0.132)	(0.035)	(0.055)	(0.045)
Sample									
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	17596	9432	7651	6428	3487	2785	6428	3487	2785
Number of unemployed	331	165	157	331	165	157	331	165	157
Estimation									
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1106	0.1434	0.0872	0.2159	0.2241	0.1867	0.1859	0.2277	0.1561
F-value	3.8300	3.7571	4.2315	0.8163	1.1030	0.7515	2.2905	2.5127	2.9201

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 7: Sensitivity test 5 – Estimation without personal applications

Dependent variable:	Probability of a Job Interview			Applications per week			Interviews per week		
Subsample: Forecast =	All	LTU	Non-LTU	All	LTU	Non-LTU	All	LTU	Non-LTU
Overall Effect ALMP	0.006	0.014*	-0.004	0.159+	0.280*	0.057	0.016	0.042*	-0.024
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.006)	(0.010)	(0.081)	(0.111)	(0.124)	(0.021)	(0.021)	(0.036)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	0.069**	0.056**	0.087**	2.891**	2.969**	2.821**	0.196**	0.160**	0.244**
	(0.008)	(0.013)	(0.011)	(0.126)	(0.226)	(0.146)	(0.037)	(0.055)	(0.051)
Sample									
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	15872	8443	6866	5165	2807	2207	5165	2807	2207
Number of unemployed	337	165	162	335	164	161	335	164	161
Estimation									
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.1397	0.1793	0.1120	0.2396	0.2553	0.1893	0.2141	0.2611	0.1793
F-value	2.4582	3.1214	2.3448	0.6677	1.5461	0.4589	1.7113	1.8648	1.6704

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 8: Sensitivity test 6 – Estimation adjusted for state of the labour market

The test introduces a dummy for each month of the observational period (dummies for applications written in July, August, September, October, November, December, January, February and March).

Dependent variable:	Probability of a Job Interview			Applications per week			Interviews per week		
Subsample: Forecast =	All	LTU	Non-LTU	All	LTU	Non-LTU	All	LTU	Non-LTU
Overall Effect ALMP	0.008	0.013+	0.002	0.093	0.197+	0.030	0.024	0.037	0.013
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.007)	(0.010)	(0.075)	(0.101)	(0.111)	(0.022)	(0.023)	(0.036)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no	no
Fixed effects	yes	yes	yes	yes	yes	yes	yes	yes	yes
Constant	-0.007	0.007	-0.032*	0.030	0.010	0.053	-0.031	0.023	-0.124*
	(0.007)	(0.008)	(0.014)	(0.091)	(0.117)	(0.156)	(0.027)	(0.027)	(0.054)
Sample									
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	0.001	0.005	-0.004	0.156	0.087	0.230	0.009	0.030	-0.035
Number of unemployed	338	166	162	338	166	162	338	166	162
Estimation									
OLS	yes	yes	yes	yes	yes	yes	yes	yes	yes
R-squared (including fixed effects)	0.146	0.1872	0.1189	0.2248	0.2266	0.1841	0.2175	0.2752	0.1833
F-value	3.1203	2.5924	3.6435	1.1025	1.2413	0.9871	1.9472	1.8743	2.4086

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months.
The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 9: Sensitivity test 7 – Using OLS with random effects, Logit and Poisson estimation

Annex 9a) All ALMP participants

Dependent variable:	Probability of a Job Interview			Applications per week		Interviews per week		
Overall Effect ALMP	0.010	0.011+	0.269*	0.092	0.079	0.028	0.036+	0.268*
(Dummy is 1 after the announcement of the ALMP)	(0.006)	(0.006)	(0.133)	(0.073)	(0.065)	(0.021)	(0.019)	(0.117)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no
Fixed effects	yes	no	no	yes	no	yes	no	no
Random effects	no	yes	yes	no	yes	no	yes	yes
Constant	0.102**	0.106**	-2.729**	2.946**	3.096**	0.296**	0.300**	-1.188**
	(0.009)	(0.009)	(0.170)	(0.118)	(0.090)	(0.038)	(0.027)	(0.133)
Sample								
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	17910	17910	17910	6518	6518	6518	6518	6518
Number of unemployed	338	338	338	338	338	338	338	338
Estimation								
OLS	yes	yes	no	yes	yes	yes	yes	no
Logit	no	no	yes	no	no	no	no	no
Poisson	no	no	no	no	no	no	no	yes
R-squared (including fixed effects)	0.1454	0.0046		0.2232	0.0095	0.2165	0.0104	
F-value	3.9327			0.7993		2.3794		
Wald chi-squared		72.884	78.1914		22.5539		52.0413	62.8743
Log likelihood			-3046.8485					-2428.4665

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used.

Annex 9b) All ALMP participants with a LTU forecast

Dependent variable:	Probability of a Job Interview			Applications per week		Interviews per week		
Overall Effect ALMP	0.014*	0.015*	0.607**	0.198*	0.168+	0.042+	0.047*	0.470*
(Dummy is 1 after the announcement of the ALMP)	(0.007)	(0.007)	(0.226)	(0.099)	(0.090)	(0.021)	(0.023)	(0.215)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no
Fixed effects	yes	no	no	yes	no	yes	no	no
Random effects	no	yes	yes	no	yes	no	yes	yes
Constant	0.074**	0.080**	-2.912**	2.791**	2.920**	0.210**	0.218**	-1.472**
	(0.013)	(0.014)	(0.288)	(0.197)	(0.152)	(0.055)	(0.041)	(0.284)
Sample								
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	9451	9451	9451	3496	3496	3496	3496	3496
Number of unemployed	166	166	166	166	166	166	166	166
Estimation								
OLS	yes	yes	no	yes	yes	yes	yes	no
Logit	no	no	yes	no	no	no	no	no
Poisson	no	no	no	no	no	no	no	yes
R-squared (including fixed effects)	0.1868	0.0025		0.2242	0.0065	0.2747	0.0054	
F-value	3.7569			1.0943		2.6059		
Wald chi-square		54.542	74.7728		14.7327		31.5986	38.6472
Log likelihood			-1245.0899					-1008.6993

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 9c) All ALMP participants without a LTU forecast

Dependent variable:	Probability of a Job Interview			Applications per week		Interviews per week		
Overall Effect ALMP	0.003	0.005	0.083	0.029	-0.000	0.011	0.021	0.149
(Dummy is 1 after the announcement of the ALMP)	(0.010)	(0.009)	(0.156)	(0.107)	(0.094)	(0.036)	(0.031)	(0.141)
Control set 1: Duration (13 dummies)	yes	yes	yes	yes	yes	yes	yes	yes
Control set 2: Applications per week	yes	yes	yes	no	no	no	no	no
Fixed effects	yes	no	no	yes	no	yes	no	no
Random effects	no	yes	yes	no	yes	no	yes	yes
Constant	0.128**	0.127**	-2.362**	2.982**	3.130**	0.367**	0.357**	-1.001**
	(0.012)	(0.013)	(0.186)	(0.142)	(0.111)	(0.050)	(0.038)	(0.147)
Sample								
All unemployed vs. ALMP unemployed	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP	ALMP
Number of applications or weeks	7835	7835	7835	2851	2851	2851	2851	2851
Number of unemployed	162	162	162	162	162	162	162	162
Estimation								
OLS	yes	yes	no	yes	yes	yes	yes	no
Logit	no	no	yes	no	no	no	no	no
Poisson	no	no	no	no	no	no	no	yes
R-squared (including fixed effects)	0.1163	0.0063		0.1806	0.0091	0.1790	0.0133	
F-value	4.5388			0.8253		3.0147		
Wald chi-square		70.5063	44.7518		15.8223		42.8677	46.9727
Log likelihood			-1701.2479					-1340.4069

Notes: Robust standard errors in parentheses.
+, *, ** denote significance at the 10%, 5% and 1% level.
The 13 duration dummies of control set 1 are: 1 (omitted), 2, 3, 4, 5-6, 7-8, 9-10, 11-12, 13-15, 16-18, 19-21, 22-24, 25 and more months. The control set 2 indicator applications per week is transformed by subtracting the mean so the constant remains easy to interpret. All applications except the ones from the lay-off period and the last month of unemployment are used. The sample is split according to the duration forecast by the caseworker (LTU (long term unemployment): over 12 months).

Annex 10: Distribution of the tested characteristics

	Direct employer contact	Unemployed searches for the same occupation than previously held	LTU forecast
Overall	0.77	0.73	0.51
Basic course	0.96	0.74	0.35
Personality oriented course	1.00	0.70	0.59
Basic qualifications course	0.00	0.95	0.55
Language course	0.00	0.76	0.36
Other course	0.24	0.72	0.56
Employment programme	0.73	0.67	0.71

Note: Numbers are proportions of all participations in a certain ALMP type. 338 ALMP participations are covered.