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Active Labour Market Policies: What Works for the Long-term Unemployed?[*]

Rainer Eppel[†], Ulrike Huemer[‡], Helmut Mahringer[§], Lukas Schmoigl[**]

Abstract: There is still a lack of knowledge on how to effectively help the long-term unemployed into employment. We evaluate a wide range of active labour market policies for this target group, using a dynamic matching approach. Measures vary considerably in the extent to which they improve labour market prospects. Human capital-intensive training programmes that substantially enhance vocational skills and employment programs are most effective, short activating job search training the least. Our results suggest that not only wage subsidies in the private sector, but also direct job creation in the public and non-profit sector can work, if properly designed.

JEL classification: J24, J64, J68

Keywords: Long-term unemployment, active labour market policy, Public Employment Service, training, wage subsidies, direct job creation

1. Introduction

Preventing and reducing long-term unemployment is one of the most important challenges for OECD countries. The Great Recession of 2009 saw an unprecedented rise in unemployment and long-term joblessness in many regions. Subsequently, labour markets have only partially recovered (Bentolila and Jansen 2016; OECD 2019), and the new crisis caused by the COVID-19 pandemic has hit the labour market even harder (OECD 2021a; OECD 2021c). Even though many economies and labour markets have recovered swiftly from the COVID-19 crisis, the recovery remains fragile and is threatened by new negative economic shocks triggered by the war in Ukraine, including the highest inflation in decades (OECD 2022).

In many OECD countries, active labour market policies (ALMPs) are a key component in combating long-term unemployment. Especially in the post-crisis recovery, they are vital as they can help to reintegrate the unemployed more quickly into the labour market and thus avoid long-term exclusion and scarring effects (OECD 2021b; OECD 2021c; Miyamoto and Suphaphiphat 2021; Filomena 2023; Irandoust 2023). About two-thirds of the OECD countries have increased their budgets for Public Employment Services (PES) since the start of the COVID-19 crisis (OECD 2022).

To use resources effectively and cost-efficiently, policy makers rely on rigorous impact evaluations. However, the existing studies do not yet allow for strong and sufficiently nuanced conclusions about which specific measures are effective in helping the long-term unemployed return to employment. Typically, interventions are broadly categorised into a small number of programme types. This hides considerable heterogeneity in policies and impacts as well as the causes of this variation (cf. Bitler, Gelbach, and Hoynes 2006; Bredgaard 2015; Cockx, Lechner, and Bollens 2023; Crépon and van den Berg 2016; Katz et al. 2016).

We contribute to filling this research gap by evaluating all major active labour market programmes for the long-term unemployed in Austria, an OECD country with high spending on active labour market policies and one of the lowest unemployment rates (Lauringson and Lüske 2021; Miyamoto and

Suphaphiphat 2021).[1] This includes five types of training programmes – vocational orientation, basic skills training, vocational training (initial and continuing) offered by external providers on behalf of the PES, course subsidies for participation in courses on the open education market, and job search training –, as well as two types of employment programmes: temporary wage subsidies in the private sector and direct job creation in the public and non-profit sector. Using a dynamic statistical matching approach, we demonstrate whether participation in these programmes in the period from 2013 to 2017 significantly improved the prospect of unsubsidised employment in the six years after programme entry. For comparison, we identify effects not only for the long-term unemployed, but also for all participating unemployed.

Our study has three distinguishing features: First, despite a great diversity of offers, evaluations do not yet sufficiently distinguish between different types of training (cf. McCall, Smith, and Wunsch 2016; Cerqua et al. 2020). By providing separate estimates for five kinds of measures, we contribute to a better understanding of the heterogeneity of training effects. Second, we put into perspective the prevailing view that subsidised public sector employment is generally ineffective (Card, Kluve, and Weber 2010; Card, Kluve, and Weber 2018). Our results suggest that this instrument can work if it is properly targeted. Third, we propose a way to estimate the effects of temporary wage subsidies that takes into account deadweight effects, i.e., the fact that some of the subsidised workers would have been hired anyway in the absence of the subsidy. These unintended indirect effects have usually been disregarded in micro-econometric evaluations.

In brief, we find that measures vary considerably in the extent to which they improve labour market prospects. Human capital intensive training programmes that substantially enhance vocational skills and employment programmes are most effective, while short activating job search training is the least

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[1] In 2013, at the beginning of the evaluation period, the unemployment rate in Austria according to Eurostat was 5.7% (EU27 11.6%) and 4.8% in 2022 (EU27 6.2%). Like many other countries, Austria was hit by a sharp rise in long-term unemployment in the wake of the Great Recession and later the COVID-19 crisis (see Figure 6 in the Online Appendix).

effective. Our results suggest that not only wage subsidies in the private sector, but also direct job creation in the public and non-profit sector can work if properly designed.

2. The programmes evaluated

In Austria, labour market policy is implemented by the Austrian Public Employment Service ("Arbeits-marktservice", AMS). A wide range of active measures aim at securing employment and supporting the unemployed in their reintegration into the labour market (cf. AMS 2021; BMAW 2023; Eppel et al. 2022; Federal Ministry of Labour and Economy 2023). Traditionally, there has been a special focus on training programmes to improve individual skills. In 2017, these accounted for two thirds of the participants and the budget (AMS 2018).

Five types of training are quantitatively relevant for the long-term unemployed and are therefore evaluated: vocational orientation, basic skills training, vocational training (initial and continuing) provided by external education providers, subsidies for course costs, and job search training. For the long-term unemployed, employment subsidies play an even greater role than training programmes, and two in particular: temporary wage subsidies in the private sector ("integration subsidy") and direct job creation in the public and non-profit sector. Both are targeted at unemployed persons who face particular difficulties in the labour market, especially the long-term unemployed.

Figure 1: Evaluated programmes: number of entries of long-term unemployed
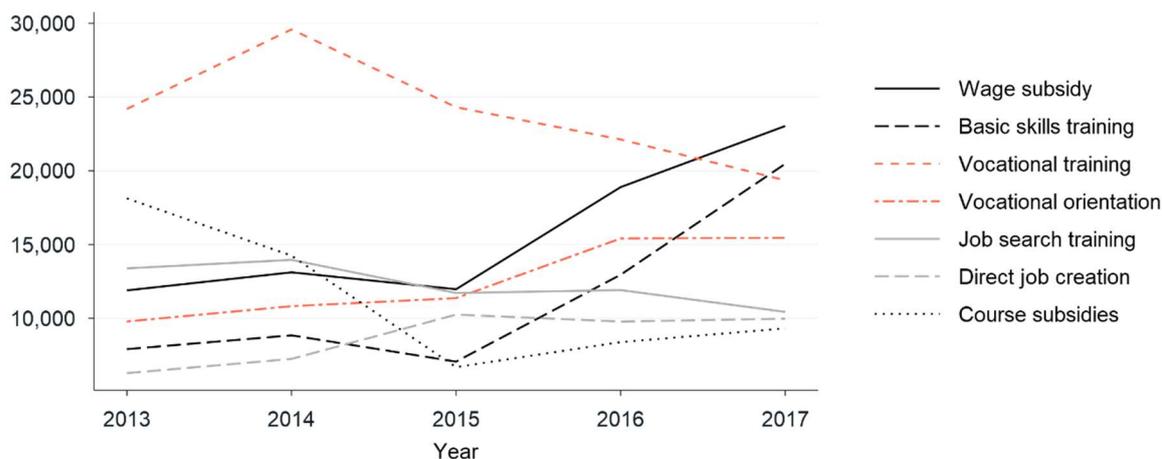
Source: AMS and own calculations.

Vocational orientation helps participants to determine their occupational opportunities, plan their careers and gain initial work experience. This includes discussing previous experiences, expanding career options, short internships in companies, getting to know different professions in sheltered workshops, etc. In addition, German language courses, job application training and courses to catch up on gaps in education are possible. Typically, the orientation prepares for participation in formal training or immediate employment. Programmes are often short, sometimes less than a month, rarely more than three months.

Basic skills training conveys general, non-occupation-specific skills that are needed to enter the labour market or to participate in further initial or continuing training. These are mainly German courses for foreigners, but also literacy courses, basic IT courses and courses to complete compulsory schooling. The programmes often last three to four months and are thus usually longer than the other training programmes.

Initial and continuing **vocational training** is offered by external education providers on behalf of and funded by the PES. Participants acquire vocational knowledge and skills that often lead to a state-recognised school-leaving qualification or other certified vocational training, e.g., a completed apprenticeship. Other courses are for continuing education without a state-recognised vocational qualification.

They provide entry-level vocational qualifications (e.g., serving courses) or additional qualifications that complement initial vocational training (e.g., high-level software courses). In some cases, they prepare for a standard examination (e.g., welding) or similar examinations. The PES pays directly for the training provision. In addition, all participants receive income support during participation. Courses often last between two and three months, i.e., longer than JSA and orientation, but rarely longer.

Job search training ("active job search") teaches skills directly related to the job search: writing application letters and CVs, interview training, developing application strategies, self-marketing, personal telemarketing, analysing job advertisements, etc. The aim is to activate the unemployed and increase their search efficiency. Like orientation, basic skills training, and initial and continuing training, active job search courses are offered by external education providers on behalf of and funded by the PES. They are not targeted at specific groups. On average, they are even shorter than orientation, very often lasting a month, rarely longer, sometimes only a few days.

Course subsidies cover up to 100% of the costs of courses chosen by unemployed individuals on the free education market that are not commissioned and financed by the PES (course fees, tuition fees, learning materials, examination fees, special clothing, co-payments for textbooks and fees for sign language interpretation). As in the case of initial and continuing training offered by external providers, the focus is on specialist qualification in areas such as office and administration or health and social services. Also, the acquisition of licenses to operate equipment and vehicles (such as forklift driving licenses) and German language courses play a relevant role. Courses are agreed between the unemployed applicant and the PES and must provide skills that are in demand on the labour market. The duration of the programme is on average shorter than for initial and continuing training, rarely longer than two months.

The "integration subsidy" (*Eingliederungsbeihilfe*) is a temporary **wage subsidy** paid to employers for hiring persons at risk of or affected by long-term unemployment. The subsidy can amount to up to 66.7% of the wage costs (gross monthly salary excluding special payments) plus a flat rate of 50% for non-wage costs. During a probationary period of up to three months (six months for persons with disabilities),

the subsidy can amount to 100% of the wage costs. It can be granted for the duration of the employment relationship, but for a maximum of three years. There is no follow-up period during which the employer is legally obliged to maintain the employment relationship. Individuals are eligible for the subsidy if they are older (women 45+, men 50+), are distant from the labour market, long-term unemployed (under-25s at least six months, over-25s at least 12 months), or considered to be at serious risk of long-term unemployment (e.g., women returning to the labour market, people with outdated labour market skills, and persons with health issues). The actual programme duration is often between three and six months, rarely longer.

Direct job creation is another key instrument in enabling disadvantaged persons to re-enter the labour market. Under this scheme, unemployed individuals at risk of permanent exclusion from the labour market, often with limited work capacity and multiple problems, are offered temporary subsidised jobs in public or non-profit firms operating in the market but serving social needs. Before taking up employment, participants can take part in a preparatory programme that lasts up to eight weeks and includes work training and work trials. The actual programme of subsidised transitional employment lasts a maximum of 12 months but can be extended in certain cases. Participants receive a regular wage. They gain work experience in a market-oriented but relatively protected environment. In addition, they are supported by job-related skills training and socio-pedagogical support. This may also include targeted outplacement services, such as job search and application assistance, as well as some follow-up support. The main objective is to stabilise the supported persons and qualify them for later reintegration into the regular labour market. The median programme duration is half a year (cf. AMS 2021; BMAW 2023; Eppel et al. 2022; Federal Ministry of Labour and Economy 2023).

Figure 1 shows the quantitative importance of programmes for the long-term unemployed over time.[2] As Figure 5 in the Appendix shows, the long-term unemployed are overrepresented in both employment programmes compared to their share in the eligible unemployed. They account for 40 percent of the

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[2] For all unemployed participants, see Table 5 in the Online Appendix.

participants in the wage subsidy scheme and two thirds of the participants in the direct job creation programme. Older people and people with health restrictions also participate particularly frequently in employment measures. In contrast, young people participate disproportionately in training. Foreigners who have at most completed compulsory education are the main participants in basic skills training. Participants in vocational training above the basic skills level are more likely to have higher qualifications. Vocational orientation is relatively more likely to benefit young people, women, especially mothers re-entering the labour market, and people with low levels of education.[3]

3. Empirical research design

3.1. Identification strategy

We evaluate the causal effects of participation in the seven labour market programmes evaluated from 2013 to 2017 on the labour market integration of participants in the six years after programme entry. Following the "potential outcomes framework" as shaped by Splawa-Neyman (1923), Fisher (1935), and Rubin (1974; 1978; 1980), our parameter of interest is the average treatment effect on the treated (ATT), i.e., the difference between the actual labour market outcomes of the participants and the hypothetical outcomes they would have achieved if they had not participated in the programme (cf. Heckman, LaLonde, and Smith 1999). Since the outcomes of the participants in the case of non-participation are not observable, we rely on a control group design. Thus, we compare outcomes between participants and comparable eligible non-participants to estimate the ATT.

Formally, the fundamental evaluation problem can be described by denoting D_i as a binary indicator variable that equals 1 in the case of programme participation ($D_i = 1$) and 0 in the case of non-participation ($D_i = 0$). Each individual i has two possible outcomes: one in the case of participation (Y_{1i}) and

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[3] Of all persons who were long-term unemployed in a calendar month between 2013 and 2017, 0.8% entered job search training ("programme entry rate"), 0.7% entered vocational orientation, 0.6% entered basic skills training, 0.9% entered the wage subsidy programme, 0.7% entered the course subsidy programme, 1.5% entered vocational training and 0.5% entered the direct job creation scheme.

one in the case of non-participation (Y_{0i}). Since the variable *Y* captures subsequent labour market outcomes, the outcome for individual *i* can be written as

$$Y_i = Y_{1i} * D_i + (1 - D_i) * Y_{0i} \tag{1}$$

and the treatment effect is given by

$$\Delta_i = Y_{1i} - Y_{0i} \tag{2}$$

As the outcome of the non-treated is counterfactual, we cannot calculate this difference. Instead, we estimate it using a control group of non-participants. The ATT can thus be written as:

$$ATT = E(\Delta|D = 1) = E\big((Y_1 - Y_0)\big|D = 1\big) = E(Y_1|D = 1) - E(Y_0|D = 1) \tag{3}$$

For the treated individuals, we estimate the population average $E(Y_1|D = 1)$ from the available data, and we estimate the unobservable outcome $E(Y_0|D = 1)$ with the observable $E(Y_0|D = 0)$ by using the non-participation outcomes of the non-treated.

In the absence of an experimental setting, a simple comparison of average outcomes would most likely lead to biased estimates, as assignment to treatment may not be random. Therefore, we apply a dynamic (nearest neighbour) propensity score matching approach (Rosenbaum and Rubin 1983) to adjust for pre-treatment observable differences between treated and controls. The matching procedure basically consists of two steps: First, we estimate the propensity score by means of a logit model with a very large number of individual characteristics. Second, we use the obtained propensity score to match each participant with up to four similar non-participants ("statistical twins").[4] To ensure that only very similar individuals are matched, we set a "caliper" of 0.8, i.e., we only allow pairs of participants and non-participants whose difference in the estimated propensity score does not exceed this tolerance level.[5]

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[4] Matching is with replacement: A person from the control group can be matched to more than one treated person.

[5] Stratification by month and (in the case of all unemployed) by previous unemployment entails a large number of propensity score estimates and matchings. With a caliper of 0.8 we avoid bad matches and keep bias low without being too restrictive in the sense of losing many observations due to lack of common support. In all estimations we achieve a very good covariate balance. The

In a third step, we estimate the ATT by comparing the outcomes between treated and matched non-treated individuals over the common support.

The difference in outcomes between participants and non-participants after matching is interpreted as the causal effect of interest:

$$ATT = E(\Delta|X, D = 1) = E(Y_1|X, D = 1) - E(Y_0|X, D = 1) = E(Y_1|X, D = 1) - E(Y_0|X, D = 0) \tag{4}$$

We choose this propensity score matching procedure for each of the seven programmes (and, in the case of the wage subsidy programme, for each of the two scenarios). For each programme, we separately estimate a propensity score using an individually adjusted logit model, which we then use to match programme participants with similar non-participants. This results in specific control groups for each of the programmes considered.

3.2. The counterfactuals

In contrast to studies that use inflow samples into unemployment and focus on the first programme entry of an unemployed person, we estimate treatment effects for the entire treated population and carefully control for previous participation in active labour market policies. We do not restrict the analyses to the first programme entry, as we would then be evaluating a highly restricted, selective sample of all programme entries and our results would therefore be unrepresentative of the overall effects of the measures and therefore less policy relevant. This is particularly the case for the long-term unemployed because, firstly, the unemployed usually participate in a measure before they become long-term unemployed. Secondly, the two employment programmes examined are specifically targeted at the long-term unemployed. They are usually only used when other measures have not worked. For these reasons,

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loss to common support is well below 1% in most cases. Matching quality would neither deteriorate nor improve with a smaller caliper size, but we would suffer a significant loss to common support in a few of the many estimates. The larger caliper is necessary to avoid this loss of treated observations and to ensure an adequate number of matched pairs and results representative of the treated long-term unemployed.

most of the treated people have already participated in some kind of programme during their unemployment spell, and a significant proportion have already participated in the programme evaluated.[6]

In order to define the comparison groups as precisely as possible, we stratify the evaluated programme entries into monthly intervals. In each month from January 2013 to December 2017, we compare individuals who started the programme (treatment group) with eligible individuals who did not participate in the evaluated programme or in any other programme in the respective month (control group).[7] Thus, we first split the sample into numerous subpopulations and estimate propensity scores separately for each stratum, based on different sets of controls. We then pool all monthly samples to estimate programme effects. The persons in the control group may have participated in the programme before and after. We control very carefully for previous participation in all relevant types of measures.[8] In contrast, we do not condition on future participation after the month in question, as this is to be viewed as an outcome (Sianesi 2004).[9]

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[6] Depending on the programme, almost or more than 90% of the treated had already participated in a programme during their unemployment spell. The proportion of those who had already participated in the same programme, i.e., the programme being evaluated, during their unemployment spell is also considerable: For 37.8% of the participants in vocational orientation, 55.1% of the participants in basic skills training, 62.1% of the participants in vocational training, 55.6% of the recipients of course subsidies, 40.3% of the participants in job search training, 17.7% of the participants in direct job creation and 11.1% of the participants in the wage subsidy scheme were not participating for the first time in the respective measure. The treated people are also more likely to participate in labour market programmes later than the control group (see Table 9 in the Online Appendix).

[7] Thus, we do not compare one programme with another, but joining a programme in one month with not joining the programme in one month, but possibly later. The control group includes people who join later and people who never join. In the month of interest, persons in the control group must not have participated in a measure directly aimed at integrating the unemployed into the labour market. This includes the programmes evaluated as well as, for example, the wage top-up scheme, non-profit labour leasing, work foundations, start-up subsidies, apprenticeship subsidies and external counselling.

[8] As can be seen in Table 2 in the Appendix, we control for a large number of variables related to participation in different active labour market programmes (private sector wage subsidies, wage top-up scheme, direct job creation, non-profit labour leasing, job search training, vocational orientation, vocational training, course subsidies and external counselling) in different periods prior to the month of (hypothetical) programme entry (dummies and days of participation in the last quarter, penultimate quarter, last two years and last four years prior to the month of interest). Persons in inter-company or in-company training in the last six months are completely excluded from the analysis.

[9] Thus, we choose months as the classification windows that define participation and non-participation. This provides a clear temporal context for our analysis. We estimate the impact of programme participation during this specific time frame, and our results apply to this period. By controlling for participation before the given month, we can attribute the observed differences between the treated and control groups during this period to the programme itself, rather than to pre-existing differences in characteristics. By controlling for future participation, we avoid conditioning on expected future outcomes.

Jaenichen and Stephan (2011) choose a similar approach. They use propensity score matching to examine the effectiveness of targeted wage subsidies for hard-to-place workers in Germany. To estimate the ATT, they compare all previously unemployed

To assess treatment effects, we compare the labour market integration of participants and non-partici-pants at annual cut-off dates in the six-year period starting on the first day after the respective month. Our follow-up period thus begins immediately after (hypothetical) programme entry. Its exact location varies depending on the date of programme entry, but all individuals are followed for the same length of time before and after this event. This moving window approach allows us to precisely control for initial conditions at the time of programme entry, at both the individual and the macroeconomic level.

Treatment is defined in terms of entry into the programme, not necessarily completion, as a measure starts to work from the moment of entry. Any lock-in effect during the programme has to be considered as part of the effect (Sianesi 2004). In addition, whether people complete the programme or drop out can also be seen as an outcome of treatment. With our dynamic control group design, we explicitly take into account that people who have not yet been treated could potentially be treated later and that treat-ment is not random and depends on previous unemployment duration (cf. Sianesi 2004, Fredriksson and Johansson 2008). First, we avoid the potential bias of a static comparison with only people who were never treated during their entire unemployment spell.[10] Second, we account for the timing of treat-ment in the unemployment spell and compare only individuals who have been unemployed for the same length of time and thus had the same risk of being treated.

In our main estimation, we focus on the long-term unemployed and control for the duration of previous unemployment in months. When estimating the effects for all unemployed participants (excluding direct job creation), we even stratify the time until treatment in the unemployment spell into five intervals (1-3

individuals who took up subsidised employment in the second quarter of 2002 with those who did not participate in that window, but potentially later, controlling for previous programme participation. Brändle and Fervers (2021) examine the impact of a job creation programme specifically designed for hard-to-place workers. They also do not restrict the analysis to the first participation, but take a random sample of all individuals who under-went a period of intensified counselling and monitoring but were still un-employed at the end of the period. Like us, they stratify their sample in monthly intervals. To estimate the ATT, they compare all individuals who started treatment in a given month with all individuals who did not start treatment in that month, regardless of future participation. The covariates they use include information on programme history.

[10] As Sianesi (2004) and Fredriksson and Johansson (2008) have pointed out, in European countries people enter programmes all the time. Every unemployed person is a potential participant. Those who do not participate today may participate tomorrow. A static comparison with unemployed people who never participate could introduce a selection bias, because we would only take into account a selective part of people, especially those who find a job quickly anyway (see also Bernhard, Gartner, and Stephan 2006; Jaenichen and Stephan 2011).

months, 4-6 months, 7-12 months, 13-24 months, 25 months and more) and only compare individuals who were in the same stage of unemployment at the time of (hypothetical) programme entry. This approach follows the dynamic treatment effects framework proposed by Sianesi (2004): For each possible duration of unemployment, among all persons at risk of participating, those who actually participated during this period are compared with persons who were unemployed for at least the same duration but did not participate during this period.

We control for socio-demographic characteristics, regional characteristics, as well as employment, participation and benefit receipt status on the day before the month of (hypothetical) programme entry. From this date, we also adjust for differences in labour market history and previous programme participation. As outcomes, we compare labour market success up to six years after the month of the (hypothetical) programme entry.[11]

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[11] An alternative approach to avoid the potential bias of a static treatment indicator in a setting with dynamic treatment assignment would be to use causal multivariate duration models. These have the advantage that they can model the time to treatment and include covariates that change over time. Duration models explicitly account for the timing of events and allow the estimation of time-varying treatment effects. However, they typically rely on certain assumptions, such as proportional hazards, which may not be valid in all cases. They can be more complex to implement and interpret than non-parametric methods, and results may be sensitive to the parametric form of the duration distribution and covariate specifications chosen. On the other hand, nonparametric matching estimates have the advantage of simplicity and robustness to model misspecification, as they avoid making strong parametric assumptions. However, they do not explicitly model the timing of events, such as time to treatment. In addition, nonparametric matching methods may be biased if there are unobserved confounders and therefore the CIA does not hold.

Our approach is very similar to that of Sianesi (2004). She also uses non-parametric matching to estimate how entering a programme in a given month of unemployment, compared to waiting longer in open unemployment, affects the subsequent probability of being in a particular labour market status. She controls for elapsed unemployment duration and a number of other covariates at the individual and regional level. Duration models include in particular the Timing of Events (ToE) approach. As Abbring and van den Berg (2003) have shown, the timing of events provides useful information on the treatment effect. Van den Berg, van der Klaauw, and van Ours (2004) provide an example of an application. They use this information to identify the effect of a sanction on the transition rate from welfare to work. Thereby, they model both the process by which welfare recipients receive a sanction and the process by which they leave unemployment. As is typical of the ToE approach, selection into treatment is allowed to be based on both observed and unobserved heterogeneity. Thus, a possible advantage is the avoidance of conditional independence assumptions (CIA), which require that any selectivity in treatment assignment can be controlled by conditioning on observed covariates. Another advantage of such an approach is that it allows selection on time-varying covariates. However, a potential disadvantage is that identification may require further structural and parametric assumptions. For example, Abbring and van den Berg (2003) impose the mixed proportional hazards structure. More recent approaches attempt to avoid this. For example, Vikström (2017) provides a new dynamic inverse probability weighting estimator that requires no additional functional form assumptions once the scores that form the weights have been estimated. More recently, van den Berg and Vikström (2022) have proposed new estimators for treatment evaluations that, in addition to unconfoundedness, do not impose any structure on the assignment process. Fredriksson and Johansson (2008) combine elements of the various approaches. They propose nonparametric matching estimators of discrete-time survival functions that do not rely on strong assumptions about the functional forms of the two processes that generate inflows into programmes and employment. However, they must assume that selection is based purely on observables.

The special case of wage subsidies

The wage subsidy is a special case because, firstly, participation in this scheme requires a specific job and, secondly, it is likely that some of the jobs would have been created anyway without this incentive. The size of this "deadweight loss", i.e., the proportion of the subsidy paid out to workers who would have been employed regardless of the subsidy, cannot be observed. For these reasons, an exclusive comparison of participants with a control group of all (long-term) unemployed who did not participate is likely to overestimate the true participation effects. First, it is uncertain whether the matching on observables is sufficient to correct for selection into employment. As Schünemann, Lechner, and Wunsch (2015) argue, part of the measured effects may still reflect the impact of getting a job relative to a control group that has a somewhat lower probability of leaving unemployment for employment, rather than the incremental impact of the wage subsidy itself. Second, we overestimate the programme effect with this comparison group scenario if deadweight effects are present.[12]

Only in the case of the wage subsidy scheme do we therefore add a second scenario with a control group that is not composed of all (long-term) unemployed non-participants, but only of those who also took up employment in the month under consideration, however not a subsidised one, but an

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[12] Schünemann, Lechner, and Wunsch (2015) find evidence of such an overestimation of effects for Germany. They examine the impact of an employer wage subsidy for the long-term unemployed on employment outcomes. When they use matching to compare participants with a control group of all long-term unemployed workers not receiving the subsidy, they find substantial positive employment effects, in line with previous studies using this approach. However, using an alternative identification strategy, they find that the availability of the subsidy has no significant effect. Specifically, they exploit the programme eligibility criterion and estimate the impact of programme availability using a combined regression discontinuity and difference-in-differences design. This approach does not require observability of all selection factors and uses a different comparison group. The authors caution that the estimated policy parameter is different from that estimated using the usual matching approaches. They estimate the effect of eligibility for the benefit rather than the effect of actual receipt. Moreover, they estimate effects locally at the eligibility threshold that requires jobseekers to have been unemployed for at least 12 months. Nevertheless, they conclude from their results that, due to the lack of full adjustment for selection into employment, matching with a control group of all (long-term) unemployed is not well suited to disentangling the effect of finding a job from the incremental effect of the wage subsidy. Largely in line with this result, Boockmann et al. (2012), using natural experiments and difference-in-differences estimation, find that eligibility for hiring subsidies among older workers in Germany has a consistently positive "intention to treat" effect on exiting unemployment only for women in West Germany. The authors attribute the absence of positive employment effects for men to the fact that the observed increase in subsidised employment is offset by deadweight effects. However, a recent study for Italy casts doubt on the hypothesis of Schünemann, Lechner, and Wunsch (2015): Using the same counterfactual method, Pasquini, Centra, and Pellegrini (2019) find for Italy strong positive intention-to-treat effects of targeted tax credits paid to firms for hiring long-term unemployed. Sjögren and Vikström (2015) are another example to find positive effects of eligibility for wage subsidies targeted to the long-term unemployed for Sweden with a similar approach.

unsubsidised one. While scenario 1 applies to a situation with zero deadweight loss (all jobs were cre-ated only by the subsidy) and is based on the assumption that selection into employment is fully captured by observables, scenario 2 assumes that all jobs would have been created anyway (100% deadweight loss). In the latter case, we underestimate the programme effect if this is not the case for all subsidies. The scenario 2 estimates indicate whether the subsidy had an impact on subsequent labour market outcomes even though it did not induce job take-up. In other words, it provides information on the incre-mental effect of the wage subsidy beyond the effect of taking up employment.

Since deadweight effects cannot be ruled out and at the same time 100% deadweight is not likely, the effects estimated with the two scenarios should give the range of the programme effect net of deadweight loss. The higher effects estimated with scenario 1 represent its upper limit, the lower effects estimated with scenario 2 its lower limit.

Jaenichen and Stephan (2011) use a similar approach, estimating two counterfactuals for people enter-ing wage subsidy programmes: First, they estimate the effect of taking up a subsidised job versus re-maining unemployed. The estimates of this scenario reflect the combined effect of receiving a subsidy and taking a job. In a second scenario, they estimate the effect of taking a subsidised job compared to taking an unsubsidised job. In this way, they identify only the effect of the subsidy conditional on having found a job - subsidised or unsubsidised. They estimate a lower bound on the effect, as it does not include the effect of the subsidy on job take-up.[13]

We cannot identify the extent of deadweight effects with our analysis, but we can use an estimate from another study of the Austrian wage subsidy programme to provide a rough estimate of the programme effects net of deadweight effects. Eppel et al. (2011) estimated the size of the deadweight loss in the period 2003-2006 by exploiting regional variation in the use of wage subsidies and comparing the esti-mated number of additional job entries by the unemployed as a whole (worker-employer matches) with

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[13] The results of Jaenichen and Stephan (2011) are also similar to ours: In comparison with all previously unemployed individuals, the employment prospects of subsidised workers increase to a considerable amount. At the same time, they hardly differ from those of unemployed persons taking unsubsidised employment.

the increase in subsidised job entries. They found a deadweight loss of about 50%, meaning that half of the jobs taken up would have been created anyway without the subsidy. We can roughly estimate the impact of the programme by subtracting a deadweight loss of this magnitude. At 50%, it should be in the middle of the estimates from our two scenarios.

What we do not capture are general equilibrium effects. For example, wage subsidies may induce additional hiring and thus increase aggregate employment if they more than compensate for the productivity deficits of the subsidised workers and thereby reduce employers' labour costs for some time. However, if employers perceive eligibility for a subsidy or participation in the programme as a negative signal and the subsidy therefore stigmatises workers, an increase in job destruction is also possible (cf. Bernhard, Jaenichen, and Stephan 2006; Wolff and Stephan 2013). We also do not capture possible indirect effects on non-participants in the form of substitution and displacement effects, i.e., the displacement of existing workers within the firm or in other firms by newly hired unemployed workers. However, these may not be considered as important from a policy perspective, as the aim of targeted wage subsidies is to "shuffle the queue" of jobseekers, i.e., to induce employers to hire the subsidised unemployed instead of the unsubsidised (Wolff and Stephan 2013). The available empirical literature is unclear on the existence of displacement effects (Pasquini, Centra, and Pellegrini 2019).

3.3. Data and variables

Our matching approach relies on two identifying assumptions: (1) that, conditional on the propensity score, treatment assignment and potential outcomes are independent (conditional independence assumption, CIA), and (2) that there is sufficient overlap in the distribution of covariates between the treatment and the comparison group (common support condition). We observe the entire population of the unemployed in Austria rather than drawing from a random sample. Hence, there is a sufficiently large pool of potential controls and overlap, even for the subgroup of the long-term unemployed.[14]

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[14] Several types of post-matching balancing tests confirm that the chosen propensity score matching procedure balances the distribution of covariates extremely well. As can be seen from Table 1 in the Appendix, the median standardised bias suggested

Furthermore, we are confident that the CIA is also fulfilled, as the combination of several data sources allows us to draw from an extraordinarily large set of factors that are potentially related to participation and outcomes.

Our evaluation is based on two merged sources of administrative data. One is the Austrian Social Security Database (ASSD): a matched firm-worker dataset administered by the Association of Austrian Social Security Institutions, which provides a complete record of all labour market histories on a daily basis from 1972 onwards, as well as information on earnings on a monthly basis, some demographic characteristics and attributes of employers. The second source is the Austrian Unemployment Register (AUR), from which we obtain extensive information on the socio-economic characteristics of all unemployed individuals registered with the Public Employment Service (PES), their participation in labour market programmes, transfer payments received, and their counselling history with the PES. In addition, we use data from Statistics Austria on regional characteristics.

Based on this rich database, we adjust for differences in numerous socio-demographic characteristics such as gender, age, education, health, marital status, and migration background, previous duration of unemployment, time elapsed since the last employment, industry, occupation and earnings of the last job, detailed fifteen-year employment histories (distinguishing between different forms of employment, various unemployment statuses and economic inactivity), previous sickness benefit receipt (during unemployment or dependent employment), ALMP participation specifically in the last two quarters and in the last four years, PES contacts and job proposals received from the PES in the last two years, current labour market status, type and amount of unemployment insurance benefit received, and many characteristics of the region of residence including federal province, type of economic region, unemployment rate, share of the long-term unemployed, annual change in unemployment, share of unemployed with hiring promise, benefit receipt rate, growth of labour supply and employment, development of vacancies,

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by Rosenbaum and Rubin (1985) is always well below 0.5% after matching. The pseudo-R^2 after matching is exactly or close to 0.000, and the p-value of the likelihood ratio test of the joint significance of all regressors after matching is 1.000 for all programmes.

share of commuters from abroad in the workforce, population density, gross regional product, and average wage level.

Following the example of Sianesi (2008), we add the local "programme rate" that equals the number of ALMP participants as a share of the eligible unemployed without employment promise.[15] This variable reflects the local programme capacity and is intended to capture unobserved local aspects. All regional characteristics are collected at the level of local labour market districts, i.e., geographical areas that are each served by one of the 101 regional employment offices. Only the gross regional product is measured at the NUTS 3 level.

The stratification by month and, in the case of all unemployed, by month and unemployment interval leads to an unusually large number of propensity score estimates. For each of these estimates we separately choose the optimal set of controls.[16] The standard variables used to estimate programme effects for the long-term unemployed are shown in Table 2 in the Appendix. When estimating effects for all unemployed participants, we are able to draw on additional variables, especially for region of residence. These include the share of seasonal unemployment, the share of older, health-impaired and low-skilled unemployed, the average benefit level, the growth of foreign labour supply, and the structure of employment (respective shares of manufacturing, construction and tourism).

Programme allocation is strongly in the hands of the PES caseworkers. They have to follow federal guidelines that specify well-defined eligibility criteria. In addition, at the level of the federal provinces (*Länder*) and the regional labour market districts, the employment offices set different priorities in the mix of active labour market measures they implement. However, conditional on programme availability and eligibility, the caseworkers have a lot of leeway in deciding who to assign to which programme. They decide on assignment in consultation with the potential participant (and any participating

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[15] We do not take into account in the local "programme rate" unemployed persons who already have a promise of a job from an employer, because they are too little at risk of participating.

[16] In addition, there is a second control group scenario in the case of the wage subsidy. This results in a total of 480 propensity score estimates in the case of the long-term unemployed and 2,400 in the case of all unemployed. Due to these quantities, we refrain from presenting propensity score estimates.

employer), taking into account local labour market conditions and the person's employment prospects, deficits and needs. Our selection of covariates is based on the official eligibility criteria and the factors relevant to the caseworker's decision. All covariates are measured prior to participation to ensure that they are not influenced by the programme.

The duration of our outcome period varies with the year of programme entry. Since the data cover all years up to 2019, all entries from 2013 to 2017 can be included in the estimation of 1- and 2-year effects. Three-year effects are based on entries from 2013 to 2016, four-year effects on entries from 2013 to 2015, five-year effects on entries from 2013 to 2014, and six-year effects on entries in 2013.

Our main measure of programme effectiveness is the share of people in unsubsidised, dependent, active employment. First, this does not include persons with a valid employment relationship who are receiving maternity allowance or childcare allowance or are temporarily absent for other reasons such as educational leave. Second, it does not include subsidised employment in the form of wage subsidies, direct job creation, non-profit labour leasing, a wage top-up scheme, and apprenticeship subsidies. As a further outcome measure, we choose the share of people in any form of employment, whether active or temporarily absent, employed or self-employed, subsidised or not. Moreover, we show effects on the share of people who are unemployed or economically inactive at the annual cut-off dates. Unemployment is broadly defined and includes all unemployed persons registered with the PES, including for example those in PES training. Economically inactive persons are those who are neither employed nor unemployed.

3.4. Sample

Our sample includes – with some exceptions – all persons aged 25 to 59 who meet the following two criteria[17]: First, they were registered as unemployed with the Austrian PES for at least one day in the

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[17] The focus is on 25-59 year olds, as younger people have short employment histories and may therefore have too little information about ex-ante labour market opportunities. Older people aged 60 and over are excluded in order to focus on periods before the statutory retirement age (65 for men and 60 for women).

programme start month, were looking for an apprenticeship or were participating in a relevant labour market programme. Second, they were "long-term jobless" as defined by the PES on the day before the month in which the programme started.[18]

We do not consider persons with a promise of employment from an employer, as this group has a job in prospect and is therefore systematically treated differently by the PES. In the case of persons granted asylum or subsidiary protection, it is too uncertain whether all the characteristics that determine their ex-ante chances are fully and validly recorded in the PES data. Furthermore, we exclude persons who died during the outcome period, as well as the few individuals for whom key information is missing: gender, age, highest completed education and the current unemployment spell. We also remove the very few persons who participated in a company-based or supra-company-based subsidised apprenticeship training in the last six months. Due to the small number of cases, it is not possible to control for these programme participations.

Each person is included in the evaluation only once per month. If there is more than one programme entry in the month of interest, the most relevant one is selected. As a rule, we choose the longest programme episode. In the case of equal duration, we give priority to the programme type; in the case of equal durations and same programme type, we choose the one with the latest start date. If a person started another measure in the same month, this may also have affected labour market outcomes. However, we minimise this problem by choosing a very short time window and the most relevant programme.

We do not evaluate participation in initial and continuing training or courses on the open education market that were shorter than five days and cost less than €100. This is because no substantial impact can be expected from the outset. Direct job creation is only taken into account if the beneficiaries were

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[18] In short, these are persons who have been unemployed for more than one year, excluding short interruptions. More precisely, we adopt the PES indicator of "long-term joblessness", which, in contrast to "long-term unemployment", treats periods in PES training as unemployment and does not take into account interruptions of up to 62 days. The Austrian PES combines episodes of six labour market statuses, including unemployment, apprenticeship search and PES training, into one "business case" that only ends with an interruption of more than 62 days. A person is considered as long-term jobless if the business case has already lasted more than 365 days on the reference date. Interruptions are not counted.

not only in a preparation measure but actually took up a transition job. In order to exclude trial months, we exclude participation in DJC and the wage subsidy scheme that did not last longer than one month.

Our final evaluation sample varies depending on the programme, the population group (long-term unemployed vs. all unemployed) and – since we can consider different programme start years in each case – the duration of the follow-up period. Furthermore, in the case of scenario 2 for the evaluation of wage subsidies, we restrict the sample to persons with a job take-up. Our full pooled dataset with all monthly sub-populations for the evaluation of vocational training for the long-term unemployed consists of 5,316,428 observations. In total, 82,412 treatments are included across all months (500 to 2,500 per month).[19] Depending on the month of the (hypothetical) start of the programme, the number of control observations varies between 50,000 and 110,000. For the other programmes, only the number of treatments differs[20].

Summary statistics can be found for the example of direct job creation in Table 2 in the Appendix and for all other programmes in Tables 6 to 8 in the Online Appendix. We use our pooled dataset to compare the means of the covariates between participants and non-participants among the long-term unemployed before matching. The comparison shows, for example, that for direct job creation, even among the long-term unemployed, there is a negative selection with respect to the main determinants of labour market opportunities age, health and education: participants are on average older and more likely to be low-skilled or in poor health.

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[19] The estimate of the 1- and 2-year effects is based on all 82,412 treatments (programme entries 2013-2017), the estimate of the 3-year effects on 69,760 treatments (programme entries 2013-2016), the estimate of the 4-year effects on 54,648 treatments (programme entries 2013-2015), the estimate of the 5-year effects on 38,099 treatments (programme entries 2013-2014) and the estimate of the 6-year effects on 17,137 treatments (programme entries 2013).

[20] The pooled datasets for the evaluation of effects for all treated unemployed are many times larger, because in this case we do not restrict to the long-term unemployed and we stratify the sample by the month of the start of the programme and unemployment duration interval. For example, the dataset for the evaluation of vocational training with all pooled strata has 16,372,515 observations and a total of 249,221 treatments are included in the evaluation.

4. Empirical results

In Figure 2, we present the effects of participation in the evaluated programmes on the probability of the treated long-term unemployed to be in unsubsidised, dependent active employment. The bars show the employment shares of the participants (treatment group) and the control group of non-participants at the annual cut-off dates after the (hypothetical) start of the programme. Above this is the difference between the two groups, i.e., the ATT, namely the absolute effect in percentage points and (in brackets) the relative effect in percent (for standard errors see Tables 3 and 4 in the Appendix, for the effects on the probability of total employment, unemployment and economic inactivity see Figures 7 to 9 in the Online Appendix). Figure 3 also illustrates the development of the impacts on all outcomes over time, further distinguishing between retirement and other reasons for inactivity.

We find that participation in all seven programmes evaluated has a positive impact on the subsequent labour market participation and employment prospects of the treated long-term unemployed: Participants are less likely to drop out of the labour market and are significantly better integrated into unsubsidised employment in the long term. However, the magnitude of these positive effects varies greatly between programmes. Those of wage subsidies depend strongly on the choice of control group or on the level of deadweight loss. The positive effects of direct job creation and vocational training, both courses offered by external training providers on behalf of the PES and those supported by course subsidies, are particularly clear and substantial. Vocational orientation also substantially improves the chances of finding unsubsidised employment, although only in the long term after six years. The employment effect of basic skills training and job search training is relatively weak.

The most striking evaluation result, given previous evidence, is that participation in the **direct job creation scheme** clearly and significantly improves the chances of finding regular employment. On average, it increases the probability of the treated long-term unemployed being in unsubsidised active dependent employment six years after programme entry by 6.0 percentage points, or 21.2%. Without changing unemployment, it reduces the probability of being economically inactive after six years by 7.1 percentage

points or 24.9%. As Figure 3 shows, the labour supply-increasing effect comes from both less frequent retirement and less frequent inactivity for other reasons such as discouragement.

For the **wage subsidy scheme**, we find in scenario 1 (no deadweight loss) a very strong increase in the probability of unsubsidised employment of +15.0 percentage points or 40.2%, a decrease in the probability of unemployment of 6.8 percentage points or 22.4% and a decrease in the probability of economic inactivity of 5.9 percentage points or 25.4%. As with the direct job creation scheme, both less frequent retirement and other reasons are responsible for maintaining labour force participation.

The estimates for scenario 2 (100% deadweight loss), on the other hand, are low, indicating strong similarities in the subsequent labour market trajectories between programme participants and non-participants who simultaneously took up unsubsidised employment. After six years, participants are slightly less likely to be in unsubsidised employment (-1.3 percentage points, -2.4%), equally likely to be unemployed and slightly more likely to be economically inactive (+2.1 percentage points, +13.9%).

The effect of the wage subsidy after deduction of deadweight loss is between the estimates of scenario 1 (upper limit) and scenario 2 (lower limit). Given the high estimates of scenario 1 and the low estimates of scenario 2, it clearly improves employment opportunities even with significant deadweight loss. For example, assuming a deadweight loss of 50%, as estimated by Eppel et al. (2011) for all unemployed, and therefore using the mean of the two scenarios, participation on average increases the probability of unsubsidised employment after six years by 6.9 percentage points and reduces the probability of unemployment by -3.7 percentage points and the probability of economic inactivity by -1.9 percentage points.

For the long-term unemployed, the deadweight loss is probably lower than for all unemployed, i.e., less than 50%. It is not plausible that they have a general preference for this group. On the contrary, many employers interpret long-term unemployment as a negative signal of reduced productivity or willingness to work and are therefore even more reluctant to hire the long-term unemployed than the short-term unemployed (cf. Eppel et al. 2018). For this reason, it can be assumed that the long-term unemployed would have been hired less often anyway without the subsidy. Thus, the genuine programme effect

should be above rather than below the mean of the two scenarios, and the finding of highly effective wage subsidies is thus well-founded.

On average, the two types of training that impart vocational skills above the basic level have a similar effect on labour market integration: **vocational training** (initial and continuing) offered by external training providers on behalf of the PES increases the probability of unsubsidised dependent employment six years after the start of the programme by 3.9 percentage points, or 12.1%. It reduces the probability of inactivity by 3.6 percentage points or 15.0%, with no significant change in unemployment in the long run. **Course subsidies** increase the probability of unsubsidised employment by 2.9 percentage points or 10.3%, increase the probability of unemployment minimally (+0.5 percentage points, +1.3%) and reduce the probability of inactivity significantly by 2.9 percentage points or 11.7%. In both cases, participation leads to less frequent retirement and less frequent exit from the labour market for other reasons.

However, the two types of training differ in the "timing" of the effects: vocational training by external training providers is associated with considerable "lock-in effects" (cf. van Ours 2004; Wunsch 2016): During training, participants reduce their search efforts and take up employment opportunities less often. Therefore, a significant positive employment effect is only detectable after two years. During the follow-up period, the size of the effect continues to increase as more and more people complete the training and take up employment. Thus, the initial negative lock-in effect of vocational training is only gradually overcompensated by an improvement in employment prospects after the programme. In contrast, the positive effect of course subsidies materialises more quickly. In this case, a clear, positive impact can already be observed after one year. "Lock-in effects" are obviously smaller because the funded courses are shorter.

A pronounced lock-in effect seems to be the reason why **vocational orientation** only slightly increases the probability of unsubsidised employment after six years (+2.3 percentage points, +8.2%). In the five-year period, the effect on subsidised employment is limited to +0.9 percentage points (+3.5%). Apparently, it takes a relatively long time for the initial negative lock-in effect to be offset by an improvement in job prospects, as orientation often prepares people for participation in more intensive, vocational

training. Only then does the focus shift to taking up employment.[21] The probability of unemployment does not change in the long run. However, the participants are significantly less likely to be economically inactive after six years (-2.9 percentage points, -10.9%). They are less likely to withdraw from the labour market due to retirement or other reasons.

Basic skills training also seems to produce a particularly strong lock-in effect. It is only after three years that we measure a (weakly) significant positive labour market impact. Even after six years, the participants are only 1.0 percentage point (3.3%) more likely to be in unsubsidised employment than without participation. They are similarly often unemployed and are slightly less often economically inactive than without participation, which is entirely due to less frequent retirement. There is evidence that the treated often participate in follow-up training measures. For example, after a basic German course, they attend a basic computer course or vocational training (Eppel et al. 2022). This could explain the strong lock-in effect and also the weak long-term employment impact: Basic skills training often only lays the foundation for further training without increasing the prospects of immediate employment.

Job search training has a similarly weak effect as basic skills training on labour market attachment and employment prospects of the long-term unemployed. On average, participation increases the probability of being in unsubsidised employment six years after the start of the programme by only 0.9 percentage points (4.0%). It has no effect on the likelihood of unemployment and lowers the probability of economic inactivity by 1.2 percentage points (4.2%). The maintenance of labour supply in the long run is not due to postponed retirements, but exclusively to less frequent withdrawals from the labour market for other reasons. In contrast to basic skills training, the still weak employment effect after six years cannot be explained by a long lock-in effect. The duration of the programmes is typically short and

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[21] We test whether the jump in the employment effect from the fifth to the sixth year could instead be due to differences in effectiveness over time. The six-year effect is based solely on participation in 2013. If the programme was significantly more effective in that year than in the subsequent years, this could help explain the jump. We therefore evaluate the effect of participation on the probability of being in unsubsidised, dependent employment after two years for each calendar year of the start of the programme. Two-year effects can be estimated for treatments in all calendar years. However, the results do not suggest that effect heterogeneity over time plays a role, at least not the decisive one. The effect in 2013 was only slightly higher than in 2014 and 2015 and weaker than in 2016 and 2017. These additional results are available from the authors upon request.

subsequent training measures are much less frequent than in the case of basic skills training and orientation. Accordingly, the effect size does not increase after three years. Thus, we conclude that the active job search programme is not very effective.

In Figure 4, we compare the impact of the seven programmes between the long-term unemployed and all treated unemployed. We find that the impact of the different types of training is generally below average, at least in absolute terms (in percentage points). In contrast, the employment programmes tend to have an above-average effect on the long-term unemployed. In particular, the relative employment effect in percent is comparatively strong. The positive employment effect of vocational orientation is (even) more strongly and quickly visible for all treated unemployed than for this specific target group. This is even more the case for basic skills training: When all programme participations are taken into account, this measure produces more than a weak effect. Job search training, on the other hand has only a weak effect both for the long-term unemployed and for the unemployed as a whole.[22]

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[22] For a comparison of effects between long-term unemployed and all treated unemployed on the share in total employment, unemployment and economic inactivity see Figures 10 to 12 in the Online Appendix.

Figure 2: Programme effects on the probability of the treated long-term unemployed to be in unsubsidised, dependent active employment

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 3: Programme effects on the probability of the treated long-term unemployed to be in different labour market positions
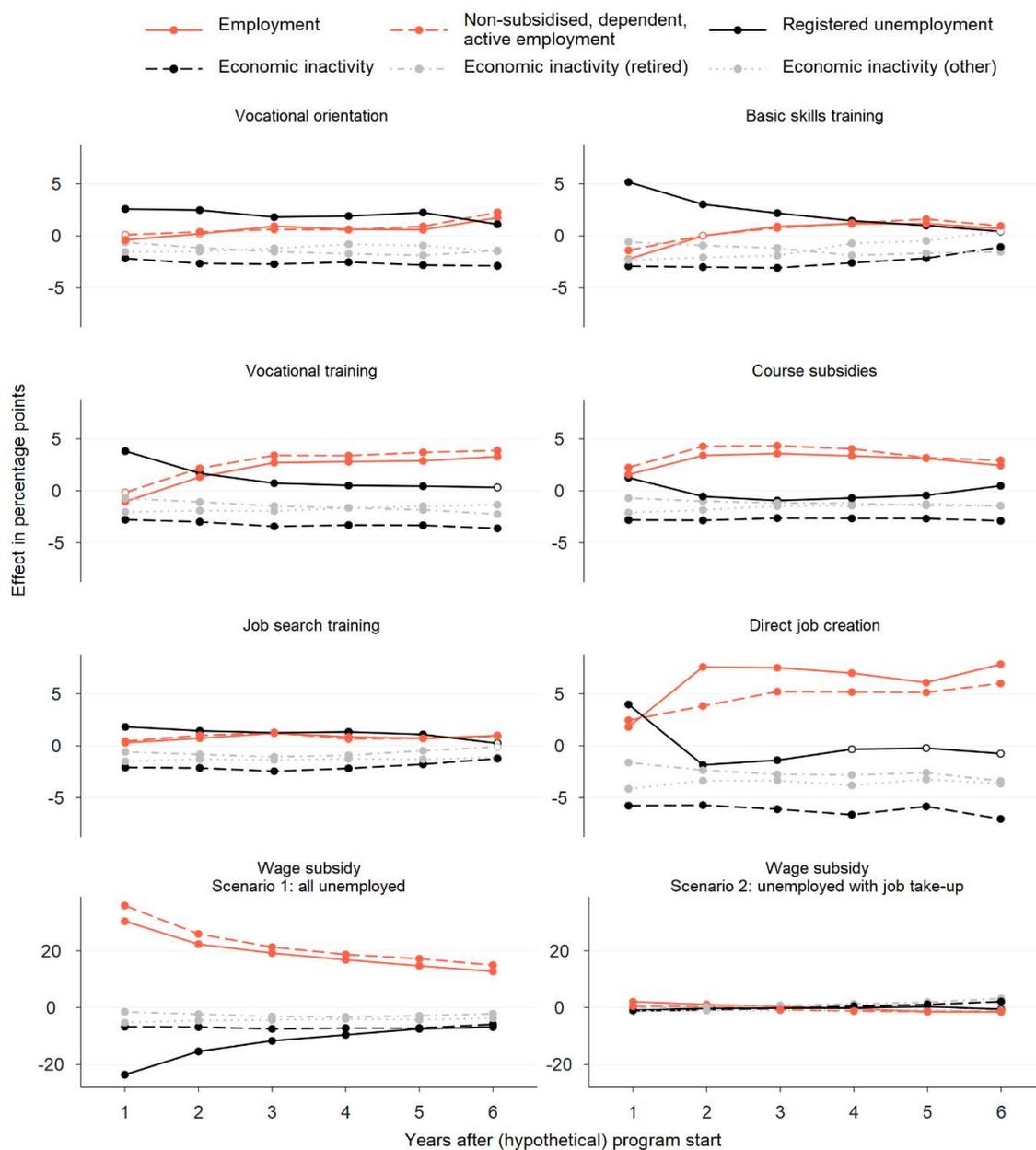
Source: AUR, ASSD, Statistics Austria, and own calculations. – Marker dots correspond to the average effect in percentage points (difference in average share between treated and controls). Without filling, if statistically insignificant at 10% error level. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006).

Figure 4: Comparison of effects on the probability of being in unsubsidised, dependent active employment between long-term unemployed and all participating unemployed
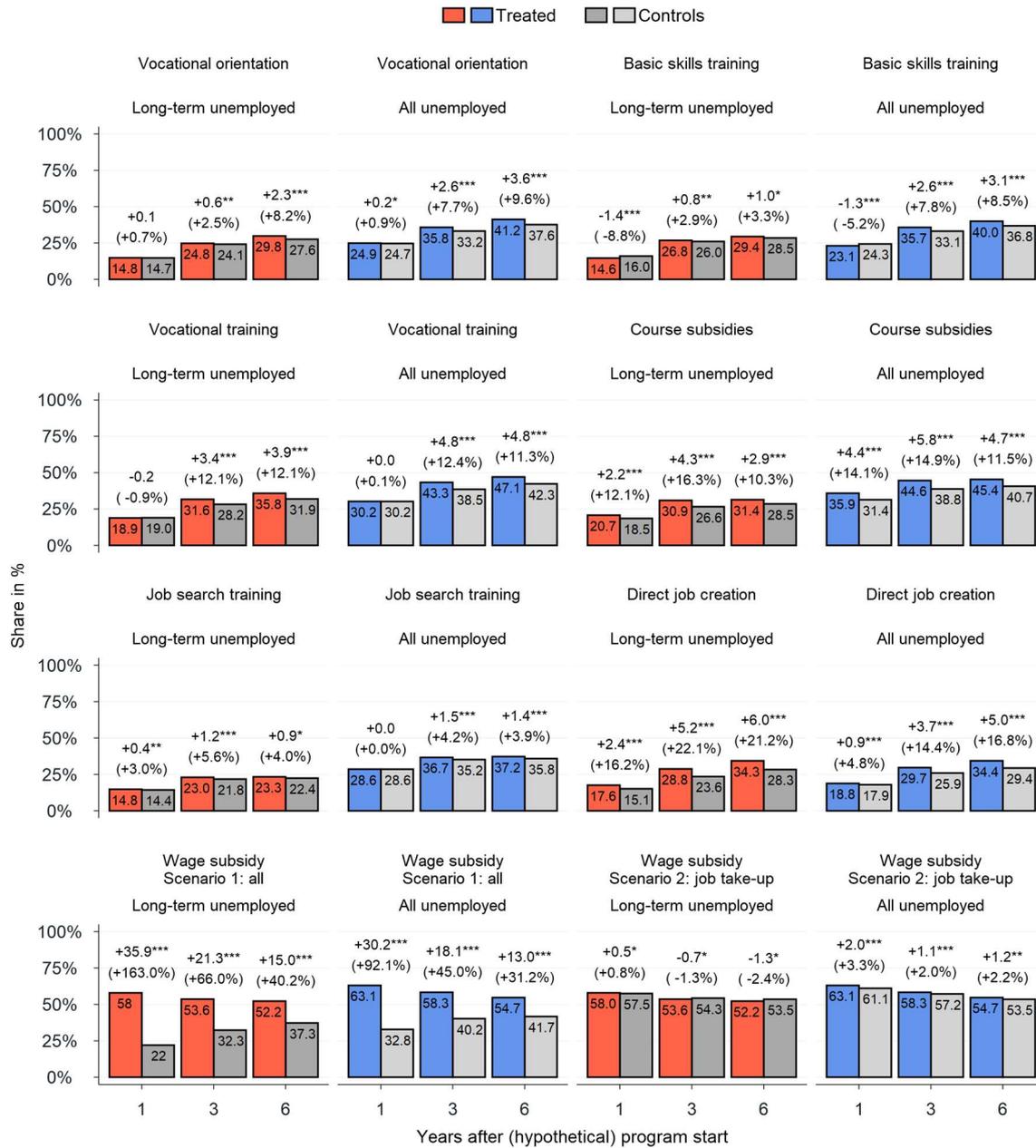
Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

5. Conclusions

Although long-term unemployment is a key challenge and OECD countries are investing considerable financial resources in ALMPs to counteract it, the available evidence on their impacts is still incomplete and inconclusive. So far, the literature provides some rough insights into what works but does not yet allow for strong and sufficiently nuanced conclusions about which specific measures are effective in helping the long-term unemployed to return to employment. In particular, the literature does not sufficiently distinguish between heterogeneous programme types and designs. Therefore, it offers little guidance on how programmes should be run in order to be effective.

We contribute to filling this research gap by evaluating all major active labour market programmes for the long-term unemployed in Austria, including five types of training programmes and two types of employment programmes. Our parameter of interest is the effect of participation in the period from 2013 to 2017 on participants' prospect for unsubsidised employment in the six years after programme entry. For identification, we use a dynamic statistical matching approach that explicitly accounts for dynamic treatment assignment. We compare treatment effects between the long-term unemployed and all participating unemployed. Furthermore, we propose an innovative approach to account for deadweight loss when estimating the effects of temporary wage subsidies.

We find that all programmes have negative short-term lock-in effects on unsubsidised employment, the magnitude and duration of which depend on the duration of the programme and the likelihood of follow-up measures. In the long run, participation in all programmes has a positive impact on labour force participation and employment. Participants are less likely to leave the labour force due to retirement or other reasons and are significantly better integrated into unsubsidised employment. The initial negative lock-in effect is thus overcompensated by the improvement in employment opportunities after the programme. In this sense, ALMPs are effective for the long-term unemployed.

However, the magnitude of the effects varies considerably between programmes. The effects of private sector wage subsidies depend strongly on the control group chosen or on the level of deadweight loss. If we compare the participants with all previously unemployed non-participants (no deadweight loss

scenario), we find a strong increase in the probability of unsubsidised employment. Compared to only those unemployed who take up a job (scenario 2 with 100% deadweight loss), the estimates are low. The programme effect net of deadweight loss should be in the range of the two estimates. Our results suggest that even with a significant deadweight loss of 50%, wage subsidies are effective in getting the long-term unemployed back into unsubsidised employment. They appear to be successful in stimulating demand for hard-to-place workers and improving their employment prospects by offering them the opportunity to work and learn directly in the regular labour market. Tight targeting of the disadvantaged unemployed should minimise the risk of deadweight loss and increase employment effects (see Brown 2015). Most strikingly, given previous evidence, direct job creation also increases the chances of regular employment.

Among training measures, the most effective ones are those that teach vocational skills (above the basic level), i.e., initial and continuing vocational training offered by external training providers on behalf of the PES and courses on open free education market supported by course subsidies. These programmes clearly improve further integration into unsubsidised employment, even if the impact for the long-term unemployed tends to be below average. They are likely to complement each other well. Contracting external providers allows the PES to strategically manage the supply of training, while course subsidies give unemployed participants a high degree of control over the choice of training, which could increase their self-motivation. The third type of training, vocational orientation, also significantly improves the chances of finding a regular job, but only in the long term after six years. It therefore takes a long time for these positive effects to materialise, the obvious reason being that orientation often prepares people for participation in more intensive vocational training.

The employment effect of basic skills training and job search training is only weak. Basic skills training, like orientation, often prepares for participation in further training measures by addressing insufficient German language skills and other basic skills deficits. Thus, the lock-in effect of this programme is particularly strong, especially for the long-term unemployed. By contrast, the weak effect of job search training cannot be explained by a long investment period. This programme tends to be short and is not

designed as a preparatory measure, but teaches job search skills with the aim of activating the unemployed and encouraging them to take up a job quickly. For both the short- and long-term unemployed, it only slightly improves labour market attachment and employment integration. We conclude that more intensive vocational training that substantially enhances human capital and productivity is more promising than short activation-type training with little or no investment in human capital.

Most of our findings are consistent with the available international evidence, such as that summarised by Card, Kluve, and Weber (2010; 2016; 2018), based on about 200 microeconometric evaluations of ALMPs, or by Bown and Freund (2019).[23] With few exceptions (e.g., Schünemann, Lechner, and Wunsch 2015 for Germany), most studies find positive effects of hiring subsidies and wage subsidies on subsequent employment prospects. More recent studies[24] not included in the aforementioned meta-analyses include a paper by Sjögren and Vikström (2015), which found substantial effects on the job-finding rates of the long-term unemployed in Sweden. Pasquini, Centra, and Pellegrini (2019) and Ciani, Grompone, and Olivieri (2019) show a positive and significant impact of a hiring subsidy for the long-term unemployed on the job-finding rate in Italy. Desiere and Cockx (2022) also report positive effects of a hiring subsidy targeted at long-term unemployed prime-age jobseekers in Belgium, but only in the short run.

There is a broad consensus on the effectiveness of training programmes (Blázquez, Herrarte, and Sáez 2019 for Spain; Goller et al. 2023 for Germany), which emerges in the medium and long term after initial lock-in effects. Kruppe and Lang (2018) examine the long-term effect of a German retraining programme for the long-term unemployed, which typically takes two years to complete. They report effects up to

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[23] Escudero (2018) examines the effectiveness of active labour market policies, especially for the low-skilled, by means of a pooled cross-country and time-series analysis based on 31 advanced countries. Fredriksson (2021) analyses the macroeconomic effects of four ALMP instruments on the unemployment rate in 19 welfare states. Dengler (2019) evaluates the impact of four major ALMPs in Germany on different dimensions of job quality.

[24] Without focussing on the long-term unemployed, Cahuc, Carcillo, and Le Barbanchon (2019) and Batut (2021) find positive effects of a wage subsidy targeted at low-wage workers in small firms during the Great Recession in France. They argue that the effectiveness was due to the non-anticipated temporary character of the programme and its targeted design. Albanese, Cockx, and Dejemeppe (2023) evaluate a wage subsidy targeted at low-educated unemployed youth in Belgium implemented during the recovery from the Great Recession and find positive effects in the short run.

seven years after the start of treatment, and find the highest effects after four years. Furthermore, they stress that the treatment effects vary considerably depending on the occupation trained. The enormous variety in the design of training measures, for example in terms of the training content (acquisition of occupational or basic skills), organisational structure (classroom training, on-the-job training) and duration of the measure, is also highlighted by Crépon and van den Berg (2016) and confirmed by our results.

Job search training or job search assistance has generally been found to yield positive outcomes on employment, with higher short-term and lower long-term effects. The intervention is meant to speed up the return to employment, for example by improving job search techniques. It is typically accompanied by some form of monitoring and sanctions for failure to search. More recent work confirms the findings of the meta-study mentioned above and our results. Altmann et al. (2018) evaluate the treatment effects of providing an information booklet to the unemployed.[25] They report a positive impact in the short run, especially for those at risk of long-term unemployment. It has also been shown that a job readiness programme in South Africa on how to use LinkedIn as a tool for job search increases the employment rate of the treated (Wheeler 2022). Evidence for Spain confirms the effectiveness of job search assistance programmes for long-term unemployed. Participation increases the probability of employment in the short and medium run (Blázques, Herrarte, and Sáez, 2019). A job search monitoring programme implemented in Belgium in 2004 for the long-term unemployed significantly reduces unemployment. However, instead of stimulating job take-up, it increases the likelihood of receiving disability benefits. Given the multiple barriers to employment faced by the long-term unemployed, the authors argue for an appropriate policy mix (De Brouwer, Leduc, and Tojerow 2023).

Our estimates for direct job creation contradict the prevailing view that subsidised public employment is generally ineffective. They suggest that this instrument can bridge the transition to the primary labour market, if only it is properly designed. In particular, they support the recent finding that careful targeting is crucial. Earlier pessimistic assessments were largely based on negative impacts found for Germany

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[25] This booklet contains e.g., stylised facts on the labour market situation in Germany, job search strategies and empirical findings on job search and the negative consequences of unemployment.

before the Hartz IV reforms, which were attributed to mis-selection of participants: Too many people with relatively good employment prospects participated. The effects improved after the Hartz IV reforms with a stronger focus of this instrument on the most disadvantaged unemployed. Hence, the lesson is that targeting the programme to workers with very poor employment prospects is key to improving participants' labour market prospects, mainly because they are less likely to be discouraged from regular employment (cf. Hohmeyer and Wolff 2010; Wolff and Stephan 2013; Brändle and Fervers 2021). Our results support this notion, as the Austrian scheme is precisely targeted at this group: people who have no prospects of finding a regular job because they face specific – often simultaneous – barriers, such as long-term unemployment, age, disability, severe health issues and social problems.

Finally, we identify some avenues for future research. First, more research is needed on how policies need to be specifically designed to be effective. Existing studies do not shed enough light on effect heterogeneity below the programme level. As a result, they provide little practical guidance on how to design effective programmes. Second, the role of contextual factors such as regional economic conditions, labour market structures and social support systems is underexplored. Third, it is not yet clear to what extent cross-country variation in impacts is due to policy design, the populations treated, or differences in economic and institutional contexts. Fourth, possible general equilibrium effects or indirect effects on non-participants, such as displacement effects or changes in the behaviour of non-participants, are underexposed. More randomised experiments would be a particularly valuable tool for identifying the nuances of programme effectiveness for the long-term unemployed, leading to more informed policy recommendations.[26]

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[26] One example is the pilot introduction of a guaranteed job programme in the Austrian municipality of Gramatneusiedl. Based on this experiment, Kasy and Lehner (2023) attempt to separate direct effects of programme participation, anticipation effects of future participation, and equilibrium effects at the municipal level.

6. References

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Online Appendix

Figure 6: The development of long-term unemployment in Austria
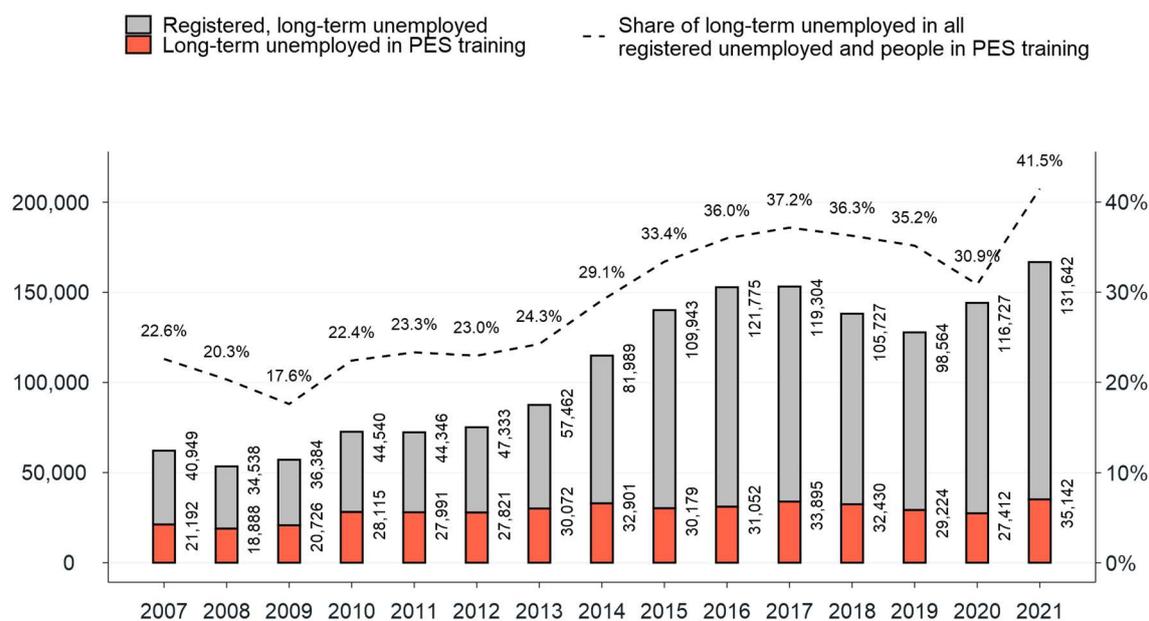
Source: AMS. – Annual average stock of long-term unemployed persons, including persons in PES training.

Table 5: Evaluated active labour market policies: number of programme entries

	Long-term unemployed					All treated unemployed				
	2013	2014	2015	2016	2017	2013	2014	2015	2016	2017
VO	9,785	10,821	11,367	15,411	15,457	44,659	43,103	41,376	54,733	60,394
BST	7,908	8,845	7,062	12,953	20,472	34,522	31,103	27,152	47,684	63,213
VT	24,193	29,586	24,312	22,123	19,351	95,656	101,532	84,943	67,561	55,715
JST	13,386	13,961	11,716	11,912	10,433	46,617	42,720	32,076	36,345	33,568
CS	18,130	14,244	6,689	8,385	9,316	63,743	48,312	24,176	28,499	31,637
WS	11,893	13,116	11,969	18,893	23,036	39,491	39,408	30,502	40,701	51,495
DJC	6,283	7,247	10,248	9,779	9,973	10,879	11,688	15,004	14,321	15,076

Source: AUR, ASSD, Statistics Austria and own calculations. – VO: Vocational orientation. BST: Basic skills training. VT: Vocational training. JST: Job search training. CS: Course subsidies. WS: Wage subsidy. DJC: Direct job creation.

Table 6: Descriptive sample characteristics by treatment status (before matching), vocational orientation, and basic skills training

		Vocational orientation				Basic skills training			
		Mean		t-test		Mean		t-test	
	C	T	Diff.	p>|t|		T	Diff.	p>|t|	
Month of elapsed unemployment									
13th	0.059	0.072	0.013	0.000	***	0.093	0.034	0.000	***
14th	0.051	0.060	0.009	0.000	***	0.078	0.027	0.000	***
15th	0.051	0.059	0.008	0.000	***	0.075	0.024	0.000	***
16th	0.044	0.049	0.005	0.000	***	0.062	0.018	0.000	***
17th	0.044	0.048	0.004	0.000	***	0.060	0.016	0.000	***
18th	0.038	0.041	0.003	0.001	***	0.054	0.016	0.000	***
19th	0.036	0.040	0.004	0.000	***	0.047	0.011	0.000	***
20th	0.036	0.040	0.004	0.000	***	0.044	0.008	0.000	***
21th	0.032	0.032	0.000	0.503		0.037	0.005	0.000	***
22th	0.032	0.033	0.001	0.126		0.033	0.001	0.122	
23th	0.028	0.029	0.001	0.128		0.030	0.002	0.008	***
24th	0.029	0.029	0.000	0.606		0.031	0.002	0.002	***
≥25th	0.520	0.467	-0.053	0.000	***	0.354	-0.166	0.000	***
Female	0.436	0.611	0.175	0.000	***	0.543	0.107	0.000	***
Age (in years)	43.510	39.590	-3.920	0.000	***	40.900	-2.610	0.000	***
Formal education level									
At most compulsory school	0.517	0.549	0.032	0.000	***	0.721	0.204	0.000	***
Apprenticeship	0.289	0.274	-0.015	0.000	***	0.113	-0.176	0.000	***
Intermediate vocational school	0.047	0.047	0.000	0.908		0.025	-0.022	0.000	***
Higher academic or vocational school	0.091	0.083	-0.008	0.000	***	0.083	-0.008	0.000	***
Academic education	0.056	0.047	-0.009	0.000	***	0.059	0.003	0.006	***
Single	0.586	0.556	-0.030	0.000	***	0.342	-0.244	0.000	***
Family-related returner to workforce (only women)	0.124	0.325	0.201	0.000	***	0.200	0.076	0.000	***
Number of children (only women)									
0.000	0.754	0.609	-0.145	0.000	***	0.806	0.052	0.000	***
1.000	0.108	0.163	0.055	0.000	***	0.093	-0.015	0.000	***
2.000	0.084	0.134	0.050	0.000	***	0.063	-0.021	0.000	***
≥3	0.054	0.095	0.041	0.000	***	0.039	-0.015	0.000	***
Age of the youngest child (years)									
≤2	0.006	0.021	0.015	0.000	***	0.008	0.002	0.000	***
3-7	0.069	0.194	0.125	0.000	***	0.087	0.018	0.000	***
8-10	0.030	0.054	0.024	0.000	***	0.028	-0.002	0.050	**
11-15	0.037	0.048	0.011	0.000	***	0.030	-0.007	0.000	***
≥16	0.104	0.074	-0.030	0.000	***	0.041	-0.063	0.000	***
Nationality									
Austria	0.768	0.706	-0.062	0.000	***	0.298	-0.470	0.000	***
EU15 (without Austria), Switzerland	0.022	0.020	-0.002	0.008	***	0.022	0.000	0.569	

EU2004/2007-member state	0.052	0.056	0.004	0.005	***	0.137	0.085	0.000	***
Turkey, former Yugoslavia (without Slovenia)	0.108	0.103	-0.005	0.001	***	0.178	0.070	0.000	***
Others	0.049	0.115	0.066	0.000	***	0.365	0.316	0.000	***
Migration background	0.389	0.454	0.065	0.000	***	0.834	0.445	0.000	***
Naturalised	0.140	0.143	0.003	0.131		0.121	-0.019	0.000	***
Health-related placement restriction									
Legal disability status	0.057	0.054	-0.003	0.003	***	0.018	-0.039	0.000	***
Other health-related employment limitation	0.268	0.292	0.024	0.000	***	0.110	-0.158	0.000	***
Economic sector of last employment									
Agriculture, mining	0.005	0.004	-0.001	0.001	***	0.006	0.001	0.058	*
Manufacturing	0.086	0.077	-0.009	0.000	***	0.050	-0.036	0.000	***
Energy and water supply	0.004	0.003	-0.001	0.000	***	0.002	-0.002	0.000	***
Construction	0.063	0.038	-0.025	0.000	***	0.047	-0.016	0.000	***
Trade	0.144	0.153	0.009	0.000	***	0.083	-0.061	0.000	***
Transport and logistics	0.047	0.033	-0.014	0.000	***	0.031	-0.016	0.000	***
Accommodation and gastronomy	0.095	0.103	0.008	0.000	***	0.121	0.026	0.000	***
Information and communication, financial and insurance service provider, real estate and housing	0.041	0.028	-0.013	0.000	***	0.016	-0.025	0.000	***
Freelance, academic, technological services	0.033	0.026	-0.007	0.000	***	0.014	-0.019	0.000	***
Other economical service	0.236	0.226	-0.010	0.000	***	0.216	-0.020	0.000	***
Public service	0.165	0.176	0.011	0.000	***	0.085	-0.080	0.000	***
Other services	0.043	0.040	-0.003	0.003	***	0.032	-0.011	0.000	***
Others, unknown	0.037	0.095	0.058	0.000	***	0.297	0.260	0.000	***
Last occupation									
Professionals	0.053	0.040	-0.013	0.000	***	0.038	-0.014	0.000	***
Armed forces occupations	0.000	0.000	0.000	0.110		0.000	0.000	0.114	
Plant and Machine Operators and Assemblers	0.076	0.059	-0.018	0.000	***	0.055	-0.022	0.000	***
Clerical Support Workers	0.095	0.095	0.001	0.678		0.049	-0.046	0.000	***
Services and Sales Workers	0.192	0.245	0.053	0.000	***	0.153	-0.039	0.000	***
Skilled Agricultural, Forestry and Fishery Workers	0.004	0.003	0.000	0.484		0.003	-0.001	0.002	***
Managers	0.031	0.016	-0.015	0.000	***	0.011	-0.020	0.000	***
Craft and Related Trades Workers	0.125	0.101	-0.024	0.000	***	0.094	-0.031	0.000	***
Elementary Occupations	0.332	0.357	0.025	0.000	***	0.533	0.201	0.000	***
Technicians and Associate Professionals	0.088	0.076	-0.011	0.000	***	0.043	-0.044	0.000	***
In PES training at end of previous month	0.017	0.036	0.019	0.000	***	0.042	0.025	0.000	***
Unemployment insurance benefit receipt									
Unemployment benefit	0.038	0.039	0.001	0.121		0.048	0.010	0.000	***
Unemployment assistance	0.793	0.740	-0.053	0.000	***	0.505	-0.288	0.000	***
Other benefit	0.035	0.050	0.015	0.000	***	0.046	0.011	0.000	***
Unemployment insurance benefit level (per day in €)									
≤5	0.033	0.044	0.011	0.000	***	0.042	0.009	0.000	***
≤10	0.026	0.029	0.003	0.001	***	0.024	-0.002	0.005	***
≤20	0.151	0.156	0.005	0.005	***	0.122	-0.029	0.000	***
>20	0.656	0.600	-0.056	0.000	***	0.411	-0.245	0.000	***
No benefit	0.134	0.171	0.037	0.000	***	0.401	0.267	0.000	***

Employment history: days in last 2 years									
Active unsubsidizsd dependent employment	52.870	49.950	-2.920	0.000	***	57.970	5.100	0.000	***
Active subsidised dep. employment 1st labour market	2.795	2.735	-0.060	0.504		1.793	-1.002	0.000	***
Active subsidised dep. employment 2nd labour market	9.244	9.873	0.629	0.000	***	6.067	-3.177	0.000	***
Temporary absence	4.750	14.650	9.900	0.000	***	8.599	3.849	0.000	***
Self-employment	2.298	1.632	-0.666	0.000	***	1.734	-0.564	0.000	***
Registered unemployment	531.400	494.500	-36.900	0.000	***	416.600	-114.800	0.000	***
PES training	65.130	94.170	29.040	0.000	***	152.500	87.370	0.000	***
Other unemployment status	3.157	3.369	0.212	0.004	***	4.951	1.794	0.000	***
Out of labour force and not socially insured	9.247	8.495	-0.752	0.000	***	17.390	8.143	0.000	***
Employment history: days in last 5 years									
Dependent employment	450.100	489.200	39.100	0.000	***	422.900	-27.200	0.000	***
Self-employment	22.360	14.180	-8.180	0.000	***	18.520	-3.840	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,093.000	1,030.000	-63.000	0.000	***	853.500	-239.500	0.000	***
Other unemployment status	8.640	9.181	0.541	0.001	***	11.920	3.280	0.000	***
Out of labour force and not socially insured	57.350	77.300	19.950	0.000	***	246.500	189.150	0.000	***
Employment history: days in last 15 years									
Dependent employment	2,109.000	2,098.000	-11.000	0.121		1,394.000	-715.000	0.000	***
Self-employment	115.700	68.650	-47.050	0.000	***	61.780	-53.920	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,977.000	1,774.000	-203.000	0.000	***	1,201.000	-776.000	0.000	***
Other unemployment status	27.640	27.820	0.180	0.668		24.220	-3.420	0.000	***
Out of labour force and not socially insured	639.400	885.600	246.200	0.000	***	2,098.000	1,458.600	0.000	***
Employed at cut-off dates									
3 months ago	0.026	0.023	-0.003	0.000	***	0.022	-0.004	0.000	***
6 months ago	0.026	0.031	0.005	0.000	***	0.020	-0.006	0.000	***
1 year ago	0.031	0.037	0.006	0.000	***	0.027	-0.004	0.000	***
2 years ago	0.258	0.285	0.027	0.000	***	0.281	0.023	0.000	***
Unemployed at cut-off dates (incl. PES training and apprenticeship search)									
3 months ago	0.921	0.936	0.015	0.000	***	0.948	0.027	0.000	***
6 months ago	0.921	0.925	0.004	0.009	***	0.948	0.027	0.000	***
1 year ago	0.917	0.920	0.003	0.043	**	0.939	0.022	0.000	***
2 years ago	0.597	0.547	-0.050	0.000	***	0.426	-0.171	0.000	***
Past sick pay receipt (days)									
During dependent employment in last 2 years	3.416	4.213	0.797	0.000	***	2.591	-0.825	0.000	***
During dependent employment in last 15 years	16.380	15.130	-1.250	0.000	***	7.928	-8.452	0.000	***
During unemployment in last 2 years	34.630	33.550	-1.080	0.000	***	17.080	-17.550	0.000	***
During unemployment in last 15 years	91.600	76.840	-14.760	0.000	***	35.100	-56.500	0.000	***
Time since last job									
0	0.012	0.014	0.002	0.000	***	0.009	-0.003	0.000	***
≤90	0.049	0.040	-0.009	0.000	***	0.035	-0.014	0.000	***
≤180	0.036	0.042	0.006	0.000	***	0.031	-0.005	0.000	***
≤366	0.059	0.071	0.012	0.000	***	0.055	-0.004	0.007	***
>366	0.730	0.673	-0.057	0.000	***	0.528	-0.202	0.000	***
No job	0.115	0.160	0.045	0.000	***	0.342	0.227	0.000	***

Income in last job (in €)

≤1,000	0.388	0.415	0.027	0.000	***	0.332	-0.056	0.000	***
1,000-1,500	0.218	0.208	-0.010	0.000	***	0.178	-0.040	0.000	***
1,500-2,000	0.139	0.120	-0.019	0.000	***	0.089	-0.050	0.000	***
2,000-2,500	0.073	0.063	-0.010	0.000	***	0.038	-0.035	0.000	***
>2,500	0.067	0.033	-0.034	0.000	***	0.021	-0.046	0.000	***
None	0.115	0.161	0.046	0.000	***	0.342	0.227	0.000	***
Active labour market policy participation in last quarter									
Job search training	0.025	0.016	-0.009	0.000	***	0.013	-0.012	0.000	***
Vocational orientation	0.019	0.096	0.077	0.000	***	0.047	0.028	0.000	***
Vocational training	0.051	0.061	0.010	0.000	***	0.092	0.041	0.000	***
Support measure	0.195	0.263	0.068	0.000	***	0.523	0.328	0.000	***
Active labour market policy participation in penultimate quarter									
Job search training	0.036	0.032	-0.004	0.000	***	0.020	-0.016	0.000	***
Vocational orientation	0.028	0.079	0.051	0.000	***	0.045	0.017	0.000	***
Vocational training	0.085	0.112	0.027	0.000	***	0.166	0.081	0.000	***
Support measure	0.188	0.259	0.071	0.000	***	0.429	0.241	0.000	***
Active labour market policy participation in last half-year									
Private-sector wage subsidies or wage top-up scheme	0.016	0.014	-0.002	0.022	**	0.011	-0.005	0.000	***
Direct job creation or non-profit labour leasing	0.036	0.033	-0.003	0.001	***	0.024	-0.012	0.000	***
Course subsidies	0.042	0.040	-0.002	0.019	**	0.032	-0.010	0.000	***
Active labour market policy participation in last two years									
Private-sector wage subsidies or wage top-up scheme	0.063	0.066	0.003	0.014	**	0.045	-0.018	0.000	***
Direct job creation	0.047	0.054	0.007	0.000	***	0.031	-0.016	0.000	***
Non-profit labour leasing	0.092	0.093	0.001	0.509		0.062	-0.030	0.000	***
Job search training	0.175	0.171	-0.004	0.022	**	0.109	-0.066	0.000	***
Vocational orientation	0.122	0.313	0.191	0.000	***	0.159	0.037	0.000	***
Vocational training	0.268	0.368	0.100	0.000	***	0.449	0.181	0.000	***
Course subsidies	0.125	0.134	0.009	0.000	***	0.106	-0.019	0.000	***
External counselling	0.407	0.544	0.137	0.000	***	0.707	0.300	0.000	***
Active labour market policy participation in last four years (days)									
Private-sector wage subsidies or wage top-up scheme	11.880	12.550	0.670	0.007	***	7.490	-4.390	0.000	***
Direct job creation	10.520	11.460	0.940	0.000	***	6.388	-4.132	0.000	***
Non-profit labour leasing	11.940	11.310	-0.630	0.001	***	6.635	-5.305	0.000	***
Job search training	14.100	13.720	-0.380	0.009	***	7.303	-6.797	0.000	***
Vocational orientation	11.580	26.100	14.520	0.000	***	10.640	-0.940	0.000	***
Vocational training	50.670	67.850	17.180	0.000	***	90.910	40.240	0.000	***
Course subsidies	14.640	15.380	0.740	0.002	***	10.230	-4.410	0.000	***
External counseling and support	111.600	138.100	26.500	0.000	***	185.200	73.600	0.000	***
PES meetings in last half-year									
0.000	0.029	0.018	-0.011	0.000	***	0.024	-0.005	0.000	***
1.000	0.104	0.088	-0.016	0.000	***	0.142	0.038	0.000	***
2.000	0.243	0.207	-0.036	0.000	***	0.255	0.012	0.000	***
≥2	0.623	0.687	0.064	0.000	***	0.579	-0.044	0.000	***
PES meetings in last 2 years									
0	0.002	0.000	-0.002	0.000	***	0.000	-0.002	0.000	***
1-4	0.032	0.028	-0.004	0.000	***	0.042	0.010	0.000	***

5-8	0.180	0.182	0.002	0.362		0.282	0.102	0.000	***
>8	0.785	0.790	0.005	0.023	**	0.675	-0.110	0.000	***
PES placement offer in last half-year	0.501	0.489	-0.012	0.000	***	0.376	-0.125	0.000	***
PES placement offer in last 2 years									
0.000	0.239	0.233	-0.006	0.003	***	0.371	0.132	0.000	***
1	0.120	0.124	0.004	0.009	***	0.148	0.028	0.000	***
2-5	0.274	0.290	0.016	0.000	***	0.266	-0.008	0.001	***
6-10	0.164	0.164	0.000	0.936		0.115	-0.049	0.000	***
>10	0.203	0.190	-0.013	0.000	***	0.100	-0.103	0.000	***
Federal state (Bundesland)									
Burgenland	0.030	0.032	0.002	0.003	***	0.026	-0.004	0.000	***
Carinthia	0.065	0.061	-0.004	0.000	***	0.086	0.021	0.000	***
Lower Austria	0.192	0.164	-0.028	0.000	***	0.127	-0.065	0.000	***
Upper Austria	0.089	0.104	0.015	0.000	***	0.037	-0.052	0.000	***
Salzburg	0.022	0.031	0.009	0.000	***	0.019	-0.003	0.000	***
Styria	0.116	0.112	-0.004	0.005	***	0.022	-0.094	0.000	***
Tyrol	0.031	0.015	-0.016	0.000	***	0.009	-0.022	0.000	***
Vorarlberg	0.018	0.020	0.002	0.039	**	0.009	-0.009	0.000	***
Vienna	0.437	0.462	0.025	0.000	***	0.663	0.226	0.000	***
Regional characteristics at labour market district level (monthly data)									
Economic region type									
Metropolitan area	0.437	0.462	0.025	0.000	***	0.663	0.226	0.000	***
City	0.142	0.098	-0.044	0.000	***	0.072	-0.070	0.000	***
Suburban	0.093	0.059	-0.034	0.000	***	0.046	-0.047	0.000	***
Medium sized town	0.110	0.122	0.012	0.000	***	0.095	-0.015	0.000	***
Intensive industrial region	0.068	0.090	0.022	0.000	***	0.033	-0.035	0.000	***
Intensive touristic region	0.018	0.019	0.001	0.040	**	0.009	-0.009	0.000	***
Extensive industrial region	0.061	0.075	0.014	0.000	***	0.038	-0.023	0.000	***
Touristic periphery	0.024	0.013	-0.011	0.000	***	0.009	-0.015	0.000	***
Industrial periphery	0.048	0.062	0.014	0.000	***	0.035	-0.013	0.000	***
Unemployment rate	0.111	0.110	-0.001	0.045	**	0.124	0.013	0.000	***
Share of long-term unemployed among the unemployed	0.358	0.349	-0.009	0.000	***	0.371	0.013	0.000	***
Share of unemployed with hiring promise among the unemployed	0.099	0.101	0.002	0.000	***	0.086	-0.013	0.000	***
Relative change in unemployment to previous year	0.049	0.057	0.008	0.000	***	0.062	0.013	0.000	***
Share of unemployed with unemployment insurance benefit	0.876	0.878	0.002	0.000	***	0.160	-0.021	0.000	***
Population density (inhabitants per square kilometre)	2,031.000	2,120.000	89.000	0.000	***	0.502	0.018	0.000	***
Relative change in employment to previous year	0.013	0.012	-0.001	0.000	***	0.121	-0.005	0.000	***
Growth of labour supply	0.070	0.071	0.001	0.000	***	2,976.000	945.000	0.000	***
Share of commuters from abroad in the workforce	0.038	0.037	-0.001	0.000	***	0.012	-0.001	0.000	***
Average annual gross salary of year-round full-time employees (in €)	48,000.000	47,000.000	-1,000.000	0.000	***	0.034	-0.004	0.000	***
Gross regional product (GRP) per inhabitant (in €)*	43,000.000	42,000.000	-1,000.000	0.000	***	45,000.000	2,000.000	0.000	***
Program rate	31.180	32.150	0.970	0.000	***	33.72	2.540	0.000	***

Source: AUR, ASSD, Statistics Austria and own calculations. – Share of long-term unemployed in the unemployed. Share of commuters from abroad in the active workforce with place of work in the respective region. Gross regional product (GRP) per inhabitant (in €) at current prices. Program rate: persons with at least one day of participation in a relevant ALMP measure as a proportion of all persons with at least one day of unemployment or program participation and no hiring promise in the respective month. *at NUTS-3-level. Unless otherwise stated, share in %. *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 7: Descriptive sample characteristics by treatment status (before matching), vocational training and course subsidies

| | Vocational training | | | | | Course subsidies | | | |
| | Mean | | | t-test | | Mean | | t-test | |
	C	T	Diff.	p>|t|		T	Diff.	p>|t|	
Month of elapsed unemployment									
13th	0.059	0.081	0.022	0.000	***	0.074	0.014	0.000	***
14th	0.051	0.067	0.016	0.000	***	0.065	0.014	0.000	***
15th	0.051	0.063	0.012	0.000	***	0.061	0.010	0.000	***
16th	0.044	0.053	0.009	0.000	***	0.050	0.006	0.000	***
17th	0.044	0.052	0.008	0.000	***	0.051	0.007	0.000	***
18th	0.038	0.044	0.006	0.000	***	0.043	0.005	0.000	***
19th	0.036	0.040	0.004	0.000	***	0.041	0.005	0.000	***
20th	0.036	0.041	0.005	0.000	***	0.040	0.004	0.000	***
21th	0.032	0.033	0.001	0.016	**	0.032	0.000	0.944	
22th	0.032	0.033	0.001	0.027	**	0.032	0.000	0.794	
23th	0.028	0.029	0.001	0.036	**	0.027	-0.001	0.395	
24th	0.029	0.029	0.000	0.390		0.029	0.000	0.316	
≥25th	0.520	0.436	-0.084	0.000	***	0.456	-0.064	0.000	***
Female	0.436	0.508	0.072	0.000	***	0.533	0.097	0.000	***
Age (in years)	43.510	40.010	-3.500	0.000	***	40.950	-2.560	0.000	***
Formal education level									
At most compulsory school	0.517	0.441	-0.076	0.000	***	0.368	-0.149	0.000	***
Apprenticeship	0.289	0.298	0.009	0.000	***	0.257	-0.032	0.000	***
Intermediate vocational school	0.047	0.062	0.015	0.000	***	0.061	0.014	0.000	***
Higher academic or vocational school	0.091	0.126	0.035	0.000	***	0.170	0.079	0.000	***
Academic education	0.056	0.073	0.017	0.000	***	0.145	0.089	0.000	***
Single	0.586	0.606	0.020	0.000	***	0.617	0.031	0.000	***
Family-related returner to workforce (only women)	0.124	0.145	0.021	0.000	***	0.165	0.041	0.000	***
Number of children (only women)									
0.000	0.754	0.748	-0.006	0.000	***	0.738	-0.016	0.000	***
1.000	0.108	0.118	0.010	0.000	***	0.123	0.015	0.000	***
2.000	0.084	0.088	0.004	0.001	***	0.090	0.006	0.000	***
≥3	0.054	0.046	-0.008	0.000	***	0.048	-0.006	0.000	***
Age of the youngest child (years)									
≤2	0.006	0.009	0.003	0.000	***	0.012	0.006	0.000	***
3-7	0.069	0.092	0.023	0.000	***	0.105	0.036	0.000	***
8-10	0.030	0.034	0.004	0.000	***	0.034	0.004	0.000	***
11-15	0.037	0.041	0.004	0.000	***	0.038	0.001	0.285	
≥16	0.104	0.075	-0.029	0.000	***	0.072	-0.032	0.000	***
Nationality									
Austria	0.768	0.729	-0.039	0.000	***	0.767	-0.001	0.505	
EU15 (without Austria), Switzerland	0.022	0.029	0.007	0.000	***	0.032	0.010	0.000	***
EU2004/2007-member state	0.052	0.070	0.018	0.000	***	0.063	0.011	0.000	***

Turkey, former Yugoslavia (without Slovenia)	0.108	0.079	-0.029	0.000	***	0.070	-0.038	0.000	***
Others	0.049	0.092	0.043	0.000	***	0.067	0.018	0.000	***
Migration background	0.389	0.419	0.030	0.000	***	0.391	0.002	0.462	
Naturalised	0.140	0.134	-0.006	0.000	***	0.143	0.003	0.069	*
Health-related placement restriction									
Legal disability status	0.057	0.034	-0.023	0.000	***	0.040	-0.017	0.000	***
Other health-related employment limitation	0.268	0.212	-0.056	0.000	***	0.177	-0.091	0.000	***
Economic sector of last employment									
Agriculture, mining	0.005	0.004	-0.001	0.000	***	0.003	-0.002	0.000	***
Manufacturing	0.086	0.076	-0.010	0.000	***	0.070	-0.016	0.000	***
Energy and water supply	0.004	0.003	-0.001	0.000	***	0.003	-0.001	0.000	***
Construction	0.063	0.043	-0.020	0.000	***	0.041	-0.022	0.000	***
Trade	0.144	0.157	0.013	0.000	***	0.157	0.013	0.000	***
Transport and logistics	0.047	0.040	-0.007	0.000	***	0.051	0.004	0.000	***
Accommodation and gastronomy	0.095	0.093	-0.002	0.034	**	0.083	-0.012	0.000	***
Information and communication, financial and insurance service provider, real estate and housing	0.041	0.044	0.003	0.000	***	0.071	0.030	0.000	***
Freelance, academic, technological services	0.033	0.038	0.005	0.000	***	0.058	0.025	0.000	***
Other economical service	0.236	0.230	-0.006	0.000	***	0.188	-0.048	0.000	***
Public service	0.165	0.166	0.001	0.491		0.168	0.003	0.066	*
Other services	0.043	0.044	0.001	0.809		0.054	0.011	0.000	***
Others, unknown	0.037	0.064	0.027	0.000	***	0.054	0.017	0.000	***
Last occupation									
Professionals	0.053	0.065	0.012	0.000	***	0.125	0.072	0.000	***
Armed forces occupations	0.000	0.001	0.000	0.001	***	0.001	0.000	0.063	*
Plant and Machine Operators and Assemblers	0.076	0.052	-0.025	0.000	***	0.056	-0.020	0.000	***
Clerical Support Workers	0.095	0.139	0.044	0.000	***	0.143	0.048	0.000	***
Services and Sales Workers	0.192	0.223	0.031	0.000	***	0.200	0.008	0.000	***
Skilled Agricultural, Forestry and Fishery Workers	0.004	0.003	0.000	0.122		0.003	-0.001	0.001	***
Managers	0.031	0.030	0.000	0.628		0.060	0.029	0.000	***
Craft and Related Trades Workers	0.125	0.110	-0.015	0.000	***	0.087	-0.038	0.000	***
Elementary Occupations	0.332	0.265	-0.067	0.000	***	0.179	-0.153	0.000	***
Technicians and Associate Professionals	0.088	0.106	0.019	0.000	***	0.140	0.053	0.000	***
In PES training at end of previous month	0.017	0.078	0.061	0.000	***	0.124	0.107	0.000	***
Unemployment insurance benefit receipt									
Unemployment benefit	0.038	0.082	0.044	0.000	***	0.083	0.045	0.000	***
Unemployment assistance	0.793	0.722	-0.071	0.000	***	0.752	-0.041	0.000	***
Other benefit	0.035	0.056	0.021	0.000	***	0.053	0.018	0.000	***
Unemployment insurance benefit level (per day in €)									
≤5	0.033	0.038	0.005	0.000	***	0.035	0.002	0.059	*
≤10	0.026	0.026	0.000	0.946		0.027	0.001	0.485	
≤20	0.151	0.143	-0.008	0.000	***	0.143	-0.008	0.000	***
>20	0.656	0.653	-0.003	0.115		0.685	0.029	0.000	***
No benefit	0.134	0.140	0.006	0.000	***	0.111	-0.023	0.000	***

Employment history: days in last 2 years

Active unsubsidised dependent employment	52.870	80.820	27.950	0.000	***	72.640	19.770	0.000	***
Active subsidised dep. employment 1st labour market	2.795	3.037	0.242	0.000	***	2.642	-0.153	0.083	*
Active subsidised dep. employment 2nd labour market	9.244	10.740	1.496	0.000	***	7.739	-1.505	0.000	***
Temporary absence	4.750	7.538	2.788	0.000	***	9.030	4.280	0.000	***
Self-employment	2.298	2.371	0.073	0.350		3.013	0.715	0.000	***
Registered unemployment	531.400	461.000	-70.400	0.000	***	468.600	-62.800	0.000	***
PES training	65.130	119.100	53.970	0.000	***	124.100	58.970	0.000	***
Other unemployment status	3.157	3.013	-0.144	0.005	***	2.500	-0.657	0.000	***
Out of labour force and not socially insured	9.247	9.200	-0.047	0.687		7.383	-1.864	0.000	***
Employment history: days in last 5 years									
Dependent employment	450.100	567.100	117.000	0.000	***	562.300	112.200	0.000	***
Self-employment	22.360	22.050	-0.310	0.485		30.210	7.850	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,093.000	996.800	-96.200	0.000	***	1,010.000	-83.000	0.000	***
Other unemployment status	8.640	8.107	-0.533	0.000	***	6.724	-1.916	0.000	***
Out of labour force and not socially insured	57.350	76.960	19.610	0.000	***	61.470	4.120	0.000	***
Employment history: days in last 15 years									
Dependent employment	2,109.000	2,196.000	87.000	0.000	***	2,228.000	119.000	0.000	***
Self-employment	115.700	98.010	-17.690	0.000	***	132.600	16.900	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,977.000	1,685.000	-292.000	0.000	***	1,724.000	-253.000	0.000	***
Other unemployment status	27.640	24.590	-3.050	0.000	***	20.660	-6.980	0.000	***
Out of labour force and not socially insured	639.400	893.400	254.000	0.000	***	799.400	160.000	0.000	***
Employed at cut-off dates									
3 months ago	0.026	0.043	0.017	0.000	***	0.024	-0.002	0.044	**
6 months ago	0.026	0.048	0.022	0.000	***	0.034	0.008	0.000	***
1 year ago	0.031	0.050	0.019	0.000	***	0.039	0.008	0.000	***
2 years ago	0.258	0.348	0.090	0.000	***	0.343	0.085	0.000	***
Unemployed at cut-off dates (incl. PES training and apprenticeship search)									
3 months ago	0.921	0.934	0.013	0.000	***	0.959	0.038	0.000	***
6 months ago	0.921	0.923	0.002	0.036	**	0.940	0.019	0.000	***
1 year ago	0.917	0.920	0.003	0.007	***	0.934	0.017	0.000	***
2 years ago	0.597	0.522	-0.075	0.000	***	0.533	-0.064	0.000	***
Past sick pay receipt (days)									
During dependent employment in last 2 years	3.416	4.231	0.815	0.000	***	3.895	0.479	0.000	***
During dependent employment in last 15 years	16.380	13.400	-2.980	0.000	***	12.810	-3.570	0.000	***
During unemployment in last 2 years	34.630	24.330	-10.300	0.000	***	25.090	-9.540	0.000	***
During unemployment in last 15 years	91.600	53.510	-38.090	0.000	***	52.650	-38.950	0.000	***
Time since last job									
0	0.012	0.030	0.018	0.000	***	0.013	0.001	0.006	***
≤90	0.049	0.053	0.004	0.000	***	0.039	-0.010	0.000	***
≤180	0.036	0.051	0.015	0.000	***	0.038	0.002	0.049	**
≤366	0.059	0.079	0.020	0.000	***	0.067	0.008	0.000	***
>366	0.730	0.674	-0.056	0.000	***	0.738	0.008	0.000	***
No job	0.115	0.113	-0.002	0.245		0.105	-0.010	0.000	***
Income in last job (in €)									
≤1,000	0.388	0.374	-0.014	0.000	***	0.361	-0.027	0.000	***

1,000-1,500	0.218	0.206	-0.012	0.000	***	0.197	-0.021	0.000	***
1,500-2,000	0.139	0.145	0.006	0.000	***	0.137	-0.002	0.372	
2,000-2,500	0.073	0.093	0.020	0.000	***	0.086	0.013	0.000	***
>2,500	0.067	0.068	0.001	0.247		0.113	0.046	0.000	***
None	0.115	0.114	-0.001	0.255		0.105	-0.010	0.000	***
Active labour market policy participation in last quarter									
Job search training	0.025	0.018	-0.007	0.000	***	0.024	-0.001	0.268	
Vocational orientation	0.019	0.065	0.046	0.000	***	0.032	0.013	0.000	***
Vocational training	0.051	0.182	0.131	0.000	***	0.087	0.036	0.000	***
Support measure	0.195	0.222	0.027	0.000	***	0.241	0.046	0.000	***
Active labour market policy participation in penultimate quarter									
Job search training	0.036	0.035	-0.001	0.505		0.039	0.003	0.001	***
Vocational orientation	0.028	0.063	0.035	0.000	***	0.041	0.013	0.000	***
Vocational training	0.085	0.233	0.148	0.000	***	0.139	0.054	0.000	***
Support measure	0.188	0.217	0.029	0.000	***	0.233	0.045	0.000	***
Active labour market policy participation in last half-year									
Private-sector wage subsidies or wage top-up scheme	0.016	0.017	0.001	0.007	***	0.014	-0.002	0.001	***
Direct job creation or non-profit labour leasing	0.036	0.035	-0.001	0.221		0.030	-0.006	0.000	***
Course subsidies	0.042	0.052	0.010	0.000	***	0.278	0.236	0.000	***
Active labour market policy participation in last two years									
Private-sector wage subsidies or wage top-up scheme	0.063	0.066	0.003	0.000	***	0.059	-0.004	0.003	***
Direct job creation	0.047	0.044	-0.003	0.000	***	0.023	-0.024	0.000	***
Non-profit labour leasing	0.092	0.113	0.021	0.000	***	0.108	0.016	0.000	***
Job search training	0.175	0.194	0.019	0.000	***	0.210	0.035	0.000	***
Vocational orientation	0.122	0.226	0.104	0.000	***	0.171	0.049	0.000	***
Vocational training	0.268	0.551	0.283	0.000	***	0.395	0.127	0.000	***
Course subsidies	0.125	0.183	0.058	0.000	***	0.508	0.383	0.000	***
External counselling	0.407	0.456	0.049	0.000	***	0.422	0.015	0.000	***
Active labour market policy participation in last four years (days)									
Private-sector wage subsidies or wage top-up scheme	11.880	11.640	-0.240	0.156		11.010	-0.870	0.000	***
Direct job creation	10.520	9.911	-0.609	0.000	***	5.048	-5.472	0.000	***
Non-profit labour leasing	11.940	14.650	2.710	0.000	***	11.350	-0.590	0.002	***
Job search training	14.100	14.760	0.660	0.000	***	15.110	1.010	0.000	***
Vocational orientation	11.580	17.350	5.770	0.000	***	13.270	1.690	0.000	***
Vocational training	50.670	110.700	60.030	0.000	***	74.530	23.860	0.000	***
Course subsidies	14.640	19.930	5.290	0.000	***	61.540	46.900	0.000	***
External counseling and support	111.600	122.900	11.300	0.000	***	132.500	20.900	0.000	***
PES meetings in last half-year									
0.000	0.029	0.038	0.009	0.000	***	0.039	0.010	0.000	***
1.000	0.104	0.094	-0.010	0.000	***	0.067	-0.037	0.000	***
2.000	0.243	0.213	-0.030	0.000	***	0.148	-0.095	0.000	***
≥2	0.623	0.655	0.032	0.000	***	0.746	0.123	0.000	***
PES meetings in last 2 years									
0	0.002	0.002	0.000	0.802		0.004	0.002	0.000	***
1-4	0.032	0.039	0.007	0.000	***	0.037	0.005	0.000	***
5-8	0.180	0.182	0.002	0.164		0.133	-0.047	0.000	***

>8	0.785	0.777	-0.008	0.000	***	0.826	0.041	0.000	***
PES placement offer in last half-year	0.501	0.556	0.055	0.000	***	0.486	-0.015	0.000	***
PES placement offer in last 2 years									
0.000	0.239	0.183	-0.056	0.000	***	0.221	-0.018	0.000	***
1	0.120	0.108	-0.012	0.000	***	0.124	0.004	0.003	***
2-5	0.274	0.280	0.006	0.000	***	0.293	0.019	0.000	***
6-10	0.164	0.185	0.021	0.000	***	0.172	0.008	0.000	***
>10	0.203	0.243	0.040	0.000	***	0.190	-0.013	0.000	***
Federal state (Bundesland)									
Burgenland	0.030	0.020	-0.010	0.000	***	0.019	-0.011	0.000	***
Carinthia	0.065	0.048	-0.017	0.000	***	0.047	-0.018	0.000	***
Lower Austria	0.192	0.094	-0.098	0.000	***	0.088	-0.104	0.000	***
Upper Austria	0.089	0.120	0.031	0.000	***	0.037	-0.052	0.000	***
Salzburg	0.022	0.015	-0.007	0.000	***	0.019	-0.003	0.000	***
Styria	0.116	0.086	-0.030	0.000	***	0.069	-0.047	0.000	***
Tyrol	0.031	0.029	-0.002	0.028	**	0.014	-0.017	0.000	***
Vorarlberg	0.018	0.015	-0.003	0.000	***	0.023	0.005	0.000	***
Vienna	0.437	0.572	0.135	0.000	***	0.684	0.247	0.000	***
Regional characteristics at labour market district level (monthly data)									
Economic region type									
Metropolitan area	0.437	0.572	0.135	0.000	***	0.684	0.247	0.000	***
City	0.142	0.100	-0.042	0.000	***	0.082	-0.060	0.000	***
Suburban	0.093	0.050	-0.043	0.000	***	0.052	-0.041	0.000	***
Medium sized town	0.110	0.082	-0.028	0.000	***	0.051	-0.059	0.000	***
Intensive industrial region	0.068	0.062	-0.006	0.000	***	0.037	-0.031	0.000	***
Intensive touristic region	0.018	0.016	-0.002	0.000	***	0.013	-0.005	0.000	***
Extensive industrial region	0.061	0.063	0.002	0.039	**	0.036	-0.025	0.000	***
Touristic periphery	0.024	0.014	-0.010	0.000	***	0.015	-0.009	0.000	***
Industrial periphery	0.048	0.042	-0.006	0.000	***	0.029	-0.019	0.000	***
Unemployment rate	0.111	0.115	0.004	0.000	***	0.117	0.006	0.000	***
Share of long-term unemployed among the unemployed	0.358	0.345	-0.013	0.000	***	0.342	-0.016	0.000	***
Share of unemployed with hiring promise among the unemployed	0.099	0.093	-0.006	0.000	***	0.088	-0.011	0.000	***
Relative change in unemployment to previous year	0.049	0.071	0.022	0.000	***	0.077	0.028	0.000	***
Share of unemployed with unemployment insurance benefit	0.876	0.012	-0.001	0.000	***	0.153	-0.028	0.000	***
Population density (inhabitants per square kilometre)	2,031.000	0.073	0.003	0.000	***	0.512	0.028	0.000	***
Relative change in employment to previous year	0.013	0.035	-0.003	0.000	***	0.116	-0.010	0.000	***
Growth of labour supply	0.070	0.874	-0.002	0.000	***	3,028.000	997.000	0.000	***
Share of commuters from abroad in the workforce	0.038	2,582.000	551.000	0.000	***	0.012	-0.001	0.000	***
Average annual gross salary of year-round full-time employees (in €)	48,000.000	48,000.000	0.000	0.000	***	0.035	-0.003	0.000	***
Gross regional product (GRP) per inhabitant (in €)*	43,000.000	44,000.000	1,000.000	0.000	***	45,000.000	2,000.000	0.000	***
Programme rate	31.180	33.230	2.050	0.000	***	35.060	3.880	0.000	***

Source: AUR, ASSD, Statistics Austria and own calculations. – Share of long-term unemployed in the unemployed. Share of commuters from abroad in the active workforce with place of work in the respective region. Gross regional product (GRP) per inhabitant (in €) at current prices. Programme rate: persons with at least one day of participation in a relevant ALMP measure as a proportion of all persons with at least one day of unemployment or programme participation and no hiring promise in the respective month. *at NUTS-3-level. Unless otherwise stated, share in %. *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 8: Descriptive sample characteristics by treatment status (before matching), job search training and wage subsidy

		Job search training				Wage subsidy			
		Mean		t-test		Mean		t-test	
	C	T	Diff.	p>|t|		T	Diff.	p>|t|	
Month of elapsed unemployment									
13th	0.059	0.068	0.009	0.000	***	0.079	0.020	0.000	***
14th	0.051	0.056	0.005	0.000	***	0.067	0.016	0.000	***
15th	0.051	0.051	0.000	0.798		0.069	0.018	0.000	***
16th	0.044	0.044	0.000	0.619		0.058	0.014	0.000	***
17th	0.044	0.045	0.001	0.321		0.058	0.014	0.000	***
18th	0.038	0.037	-0.001	0.289		0.050	0.012	0.000	***
19th	0.036	0.035	-0.001	0.348		0.047	0.011	0.000	***
20th	0.036	0.035	-0.001	0.406		0.044	0.008	0.000	***
21th	0.032	0.031	-0.001	0.672		0.038	0.006	0.000	***
22th	0.032	0.032	0.000	0.973		0.038	0.006	0.000	***
23th	0.028	0.029	0.001	0.368		0.029	0.001	0.246	
24th	0.029	0.031	0.002	0.007	***	0.030	0.001	0.022	**
≥25th	0.520	0.505	-0.015	0.000	***	0.394	-0.126	0.000	***
Female	0.436	0.396	-0.040	0.000	***	0.473	0.037	0.000	***
Age (in years)	43.510	41.950	-1.560	0.000	***	43.000	-0.510	0.000	***
Formal education level									
At most compulsory school	0.517	0.496	-0.021	0.000	***	0.403	-0.114	0.000	***
Apprenticeship	0.289	0.277	-0.012	0.000	***	0.374	0.085	0.000	***
Intermediate vocational school	0.047	0.045	-0.002	0.036	**	0.063	0.016	0.000	***
Higher academic or vocational school	0.091	0.107	0.016	0.000	***	0.105	0.014	0.000	***
Academic education	0.056	0.074	0.018	0.000	***	0.054	-0.002	0.105	
Single	0.586	0.623	0.037	0.000	***	0.531	-0.055	0.000	***
Family-related returner to workforce (only women)	0.124	0.130	0.006	0.000	***	0.103	-0.021	0.000	***
Number of children (only women)									
0.000	0.754	0.782	0.028	0.000	***	0.710	-0.044	0.000	***
1.000	0.108	0.096	-0.012	0.000	***	0.129	0.021	0.000	***
2.000	0.084	0.073	-0.011	0.000	***	0.109	0.025	0.000	***
≥3	0.054	0.049	-0.005	0.000	***	0.051	-0.003	0.017	**
Age of the youngest child (years)									
≤2	0.006	0.007	0.001	0.023	**	0.008	0.002	0.000	***
3-7	0.069	0.076	0.007	0.000	***	0.075	0.006	0.000	***
8-10	0.030	0.031	0.001	0.257		0.032	0.002	0.003	***
11-15	0.037	0.034	-0.003	0.001	***	0.043	0.006	0.000	***
≥16	0.104	0.071	-0.033	0.000	***	0.131	0.027	0.000	***
Nationality									
Austria	0.768	0.764	-0.004	0.034	**	0.792	0.024	0.000	***
EU15 (without Austria), Switzerland	0.022	0.023	0.001	0.375		0.027	0.005	0.000	***
EU2004/2007-member state	0.052	0.054	0.002	0.247		0.063	0.011	0.000	***

Turkey, former Yugoslavia (without Slovenia)	0.108	0.114	0.006	0.000	***	0.080	-0.029	0.000	***
Others	0.049	0.046	-0.003	0.006	***	0.039	-0.010	0.000	***
Migration background	0.389	0.423	0.034	0.000	***	0.335	-0.054	0.000	***
Naturalised	0.140	0.164	0.024	0.000	***	0.113	-0.027	0.000	***
Health-related placement restriction									
Legal disability status	0.057	0.027	-0.030	0.000	***	0.063	0.006	0.000	***
Other health-related employment limitation	0.268	0.197	-0.071	0.000	***	0.208	-0.060	0.000	***
Economic sector of last employment									
Agriculture, mining	0.005	0.002	-0.003	0.000	***	0.006	0.001	0.000	***
Manufacturing	0.086	0.071	-0.015	0.000	***	0.168	0.082	0.000	***
Energy and water supply	0.004	0.004	0.000	0.168		0.005	0.001	0.027	**
Construction	0.063	0.059	-0.004	0.000	***	0.062	-0.002	0.235	
Trade	0.144	0.140	-0.004	0.018	**	0.097	-0.047	0.000	***
Transport and logistics	0.047	0.050	0.003	0.020	**	0.048	0.001	0.432	
Accommodation and gastronomy	0.095	0.086	-0.009	0.000	***	0.097	0.002	0.160	
Information and communication, financial and insurance service provider, real estate and housing	0.041	0.045	0.004	0.000	***	0.041	0.000	0.632	
Freelance, academic, technological services	0.033	0.039	0.006	0.000	***	0.040	0.007	0.000	***
Other economical service	0.236	0.273	0.037	0.000	***	0.226	-0.010	0.000	***
Public service	0.165	0.166	0.001	0.434		0.156	-0.009	0.000	***
Other services	0.043	0.039	-0.004	0.000	***	0.044	0.001	0.353	
Others, unknown	0.037	0.027	-0.010	0.000	***	0.012	-0.025	0.000	***
Last occupation									
Professionals	0.053	0.064	0.011	0.000	***	0.049	-0.004	0.000	***
Armed forces occupations	0.000	0.001	0.000	0.308		0.000	0.000	0.368	
Plant and Machine Operators and Assemblers	0.076	0.073	-0.003	0.007	***	0.072	-0.005	0.000	***
Clerical Support Workers	0.095	0.099	0.004	0.009	***	0.118	0.023	0.000	***
Services and Sales Workers	0.192	0.198	0.006	0.003	***	0.197	0.005	0.003	***
Skilled Agricultural, Forestry and Fishery Workers	0.004	0.004	0.000	0.877		0.004	0.000	0.315	
Managers	0.031	0.035	0.004	0.000	***	0.036	0.006	0.000	***
Craft and Related Trades Workers	0.125	0.129	0.004	0.044	**	0.135	0.010	0.000	***
Elementary Occupations	0.332	0.302	-0.030	0.000	***	0.278	-0.054	0.000	***
Technicians and Associate Professionals	0.088	0.094	0.006	0.000	***	0.108	0.021	0.000	***
In PES training at end of previous month	0.017	0.014	-0.003	0.000	***	0.109	0.092	0.000	***
Unemployment insurance benefit receipt									
Unemployment benefit	0.038	0.037	-0.001	0.496		0.108	0.070	0.000	***
Unemployment assistance	0.793	0.847	0.054	0.000	***	0.749	-0.044	0.000	***
Other benefit	0.035	0.022	-0.013	0.000	***	0.062	0.027	0.000	***
Unemployment insurance benefit level (per day in €)									
≤5	0.033	0.024	-0.009	0.000	***	0.055	0.022	0.000	***
≤10	0.026	0.024	-0.002	0.004	***	0.025	-0.001	0.300	
≤20	0.151	0.159	0.008	0.000	***	0.129	-0.022	0.000	***
>20	0.656	0.700	0.044	0.000	***	0.709	0.053	0.000	***
No benefit	0.134	0.093	-0.041	0.000	***	0.081	-0.053	0.000	***
Employment history: days in last 2 years									

|									
Active unsubsidised dependent employment	52.870	57.510	4.640	0.000	***	98.000	45.130	0.000	***
Active subsidised dep. employment 1st labour market	2.795	2.700	-0.095	0.274		7.444	4.649	0.000	***
Active subsidised dep. employment 2nd labour market	9.244	13.460	4.216	0.000	***	7.407	-1.837	0.000	***
Temporary absence	4.750	4.990	0.240	0.128		6.470	1.720	0.000	***
Self-employment	2.298	2.229	-0.069	0.518		2.756	0.458	0.000	***
Registered unemployment	531.400	532.600	1.200	0.083	*	480.000	-51.400	0.000	***
PES training	65.130	73.500	8.370	0.000	***	95.000	29.870	0.000	***
Other unemployment status	3.157	3.353	0.196	0.006	***	2.510	-0.647	0.000	***
Out of labour force and not socially insured	9.247	8.715	-0.532	0.001	***	6.052	-3.195	0.000	***
Employment history: days in last 5 years									
Dependent employment	450.100	484.600	34.500	0.000	***	690.000	239.900	0.000	***
Self-employment	22.360	21.830	-0.530	0.400		26.000	3.640	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,093.000	1,117.000	24.000	0.000	***	940.000	-153.000	0.000	***
Other unemployment status	8.640	9.277	0.637	0.000	***	5.853	-2.787	0.000	***
Out of labour force and not socially insured	57.350	54.980	-2.370	0.004	***	42.000	-15.350	0.000	***
Employment history: days in last 15 years									
Dependent employment	2,109.000	2,126.000	17.000	0.011	**	2700.000	591.000	0.000	***
Self-employment	115.700	105.800	-9.900	0.000	***	130.000	14.300	0.000	***
Unemployment (incl. PES training and apprenticeship search)	1,977.000	2,030.000	53.000	0.000	***	1600.000	-377.000	0.000	***
Other unemployment status	27.640	29.620	1.980	0.000	***	18.000	-9.640	0.000	***
Out of labour force and not socially insured	639.400	675.500	36.100	0.000	***	590.000	-49.400	0.000	***
Employed at cut-off dates									
3 months ago	0.026	0.017	-0.009	0.000	***	0.038	0.012	0.000	***
6 months ago	0.026	0.030	0.004	0.000	***	0.040	0.014	0.000	***
1 year ago	0.031	0.038	0.007	0.000	***	0.051	0.020	0.000	***
2 years ago	0.258	0.288	0.030	0.000	***	0.430	0.172	0.000	***
Unemployed at cut-off dates (incl. PES training and apprenticeship search)									
3 months ago	0.921	0.964	0.043	0.000	***	0.935	0.014	0.000	***
6 months ago	0.921	0.938	0.017	0.000	***	0.929	0.008	0.000	***
1 year ago	0.917	0.925	0.008	0.000	***	0.916	-0.001	0.427	
2 years ago	0.597	0.600	0.003	0.203		0.479	-0.118	0.000	***
Past sick pay receipt (days)									
During dependent employment in last 2 years	3.416	2.672	-0.744	0.000	***	5.324	1.908	0.000	***
During dependent employment in last 15 years	16.380	9.643	-6.737	0.000	***	20.000	3.620	0.000	***
During unemployment in last 2 years	34.630	28.140	-6.490	0.000	***	25.000	-9.630	0.000	***
During unemployment in last 15 years	91.600	65.130	-26.470	0.000	***	57.000	-34.600	0.000	***
Time since last job									
0	0.012	0.005	-0.007	0.000	***	0.215	0.203	0.000	***
≤90	0.049	0.046	-0.003	0.012	**	0.077	0.028	0.000	***
≤180	0.036	0.043	0.007	0.000	***	0.052	0.016	0.000	***
≤366	0.059	0.074	0.015	0.000	***	0.082	0.023	0.000	***
>366	0.730	0.755	0.025	0.000	***	0.465	-0.265	0.000	***
No job	0.115	0.076	-0.039	0.000	***	0.110	-0.005	0.001	***
Income in last job (in €)									
≤1,000	0.388	0.416	0.028	0.000	***	0.312	-0.076	0.000	***

1,000-1,500	0.218	0.220	0.002	0.218		0.221	0.003	0.097	*
1,500-2,000	0.139	0.145	0.006	0.001	***	0.178	0.039	0.000	***
2,000-2,500	0.073	0.071	-0.002	0.062	*	0.100	0.027	0.000	***
>2,500	0.067	0.073	0.006	0.000	***	0.080	0.013	0.000	***
None	0.115	0.076	-0.039	0.000	***	0.110	-0.005	0.000	***
Active labour market policy participation in last quarter									
Job search training	0.025	0.027	0.002	0.009	***	0.031	0.006	0.000	***
Vocational orientation	0.019	0.013	-0.006	0.000	***	0.031	0.012	0.000	***
Vocational training	0.051	0.030	-0.021	0.000	***	0.115	0.064	0.000	***
Support measure	0.195	0.147	-0.048	0.000	***	0.197	0.002	0.271	
Active labour market policy participation in penultimate quarter									
Job search training	0.036	0.046	0.010	0.000	***	0.035	-0.001	0.182	
Vocational orientation	0.028	0.022	-0.006	0.000	***	0.034	0.006	0.000	***
Vocational training	0.085	0.071	-0.014	0.000	***	0.142	0.057	0.000	***
Support measure	0.188	0.168	-0.020	0.000	***	0.176	-0.012	0.000	***
Active labour market policy participation in last half-year									
Private-sector wage subsidies or wage top-up scheme	0.016	0.016	0.000	0.402		0.048	0.032	0.000	***
Direct job creation or non-profit labour leasing	0.036	0.037	0.001	0.398		0.040	0.004	0.000	***
Course subsidies	0.042	0.049	0.007	0.000	***	0.074	0.032	0.000	***
Active labour market policy participation in last two years									
Private-sector wage subsidies or wage top-up scheme	0.063	0.072	0.009	0.000	***	0.140	0.077	0.000	***
Direct job creation	0.047	0.052	0.005	0.000	***	0.045	-0.002	0.037	**
Non-profit labour leasing	0.092	0.156	0.064	0.000	***	0.066	-0.026	0.000	***
Job search training	0.175	0.303	0.128	0.000	***	0.162	-0.013	0.000	***
Vocational orientation	0.122	0.128	0.006	0.000	***	0.140	0.018	0.000	***
Vocational training	0.268	0.323	0.055	0.000	***	0.359	0.091	0.000	***
Course subsidies	0.125	0.184	0.059	0.000	***	0.158	0.033	0.000	***
External counselling	0.407	0.376	-0.031	0.000	***	0.378	-0.029	0.000	***
Active labour market policy participation in last four years (days)									
Private-sector wage subsidies or wage top-up scheme	11.880	12.540	0.660	0.005	***	23.000	11.120	0.000	***
Direct job creation	10.520	12.020	1.500	0.000	***	9.886	-0.634	0.004	***
Non-profit labour leasing	11.940	18.940	7.000	0.000	***	7.569	-4.371	0.000	***
Job search training	14.100	23.860	9.760	0.000	***	11.000	-3.100	0.000	***
Vocational orientation	11.580	11.680	0.100	0.530		13.000	1.420	0.000	***
Vocational training	50.670	59.270	8.600	0.000	***	74.000	23.330	0.000	***
Course subsidies	14.640	20.210	5.570	0.000	***	16.000	1.360	0.000	***
External counseling and support	111.600	107.500	-4.100	0.000	***	86.000	-25.600	0.000	***
PES meetings in last half-year									
0.000	0.029	0.010	-0.019	0.000	***	0.044	0.015	0.000	***
1.000	0.104	0.048	-0.056	0.000	***	0.103	-0.001	0.465	
2.000	0.243	0.187	-0.056	0.000	***	0.214	-0.029	0.000	***
≥2	0.623	0.754	0.131	0.000	***	0.639	0.016	0.000	***
PES meetings in last 2 years									
0	0.002	0.001	-0.001	0.000	***	0.004	0.002	0.000	***
1-4	0.032	0.017	-0.015	0.000	***	0.049	0.017	0.000	***
5-8	0.180	0.123	-0.057	0.000	***	0.195	0.015	0.000	***

|									
>8	0.785	0.859	0.074	0.000	***	0.751	-0.034	0.000	***
PES placement offer in last half-year	0.501	0.628	0.127	0.000	***	0.723	0.222	0.000	***
PES placement offer in last 2 years									
0.000	0.239	0.133	-0.106	0.000	***	0.104	-0.135	0.000	***
1	0.120	0.101	-0.019	0.000	***	0.087	-0.033	0.000	***
2-5	0.274	0.287	0.013	0.000	***	0.271	-0.003	0.154	
6-10	0.164	0.202	0.038	0.000	***	0.213	0.049	0.000	***
>10	0.203	0.277	0.074	0.000	***	0.325	0.122	0.000	***
Federal state (Bundesland)									
Burgenland	0.030	0.034	0.004	0.000	***	0.040	0.010	0.000	***
Carinthia	0.065	0.017	-0.048	0.000	***	0.133	0.068	0.000	***
Lower Austria	0.192	0.099	-0.093	0.000	***	0.179	-0.013	0.000	***
Upper Austria	0.089	0.052	-0.037	0.000	***	0.108	0.019	0.000	***
Salzburg	0.022	0.030	0.008	0.000	***	0.038	0.016	0.000	***
Styria	0.116	0.141	0.025	0.000	***	0.110	-0.006	0.000	***
Tyrol	0.031	0.015	-0.016	0.000	***	0.041	0.010	0.000	***
Vorarlberg	0.018	0.012	-0.006	0.000	***	0.028	0.010	0.000	***
Vienna	0.437	0.598	0.161	0.000	***	0.323	-0.114	0.000	***
Regional characteristics at labour market district level (monthly data)									
Economic region type									
Metropolitan area	0.437	0.598	0.161	0.000	***	0.323	-0.114	0.000	***
City	0.142	0.146	0.004	0.015	**	0.150	0.008	0.000	***
Suburban	0.093	0.049	-0.044	0.000	***	0.092	-0.001	0.212	
Medium sized town	0.110	0.044	-0.066	0.000	***	0.122	0.012	0.000	***
Intensive industrial region	0.068	0.050	-0.018	0.000	***	0.088	0.020	0.000	***
Intensive touristic region	0.018	0.005	-0.013	0.000	***	0.031	0.013	0.000	***
Extensive industrial region	0.061	0.045	-0.016	0.000	***	0.093	0.032	0.000	***
Touristic periphery	0.024	0.019	-0.005	0.000	***	0.040	0.016	0.000	***
Industrial periphery	0.048	0.043	-0.005	0.000	***	0.061	0.013	0.000	***
Unemployment rate	0.111	0.116	0.005	0.000	***	0.102	-0.009	0.000	***
Share of long-term unemployed among the unemployed	0.358	0.349	-0.009	0.000	***	0.335	-0.023	0.000	***
Share of unemployed with hiring promise among the unemployed	0.099	0.085	-0.014	0.000	***	0.122	0.023	0.000	***
Relative change in unemployment to previous year	0.049	0.075	0.026	0.000	***	0.037	-0.012	0.000	***
Share of unemployed with unemployment insurance benefit	0.876	0.871	-0.005	0.000	***	0.885	0.009	0.000	***
Population density (inhabitants per square kilometre)	2,031.000	2,706.000	675.000	0.000	***	1500.000	-531.000	0.000	***
Relative change in employment to previous year	0.013	0.012	-0.001	0.000	***	0.013	0.000	0.108	
Growth of labour supply	0.070	0.075	0.005	0.000	***	0.070	0.000	0.000	***
Share of commuters from abroad in the workforce	0.038	0.037	-0.001	0.000	***	0.040	0.002	0.000	***
Average annual gross salary of year-round full-time employees (in €)	48,000.000	48,000.000	0.000	0.000	***	47000.000	-1,000.000	0.000	***
Gross regional product (GRP) per inhabitant (in €)*	43,000.000	44,000.000	1,000.000	0.000	***	41000.000	-2,000.000	0.000	***
Programme rate	31.180	33.410	2.230	0.000	***	31.000	-0.180	0.000	***

Source: AUR, ASSD, Statistics Austria and own calculations. – Share of long-term unemployed in the unemployed. Share of commuters from abroad in the active workforce with place of work in the respective region. Gross regional product (GRP) per inhabitant (in €) at current prices. Programme rate: persons with at least one day of participation in a relevant ALMP measure as a proportion of all persons with at least one day of unemployment or programme participation and no hiring promise in the respective month. *at NUTS-3-level. Unless otherwise stated, share in %. *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 7: Programme effects on the share of the treated long-term unemployed in total employment
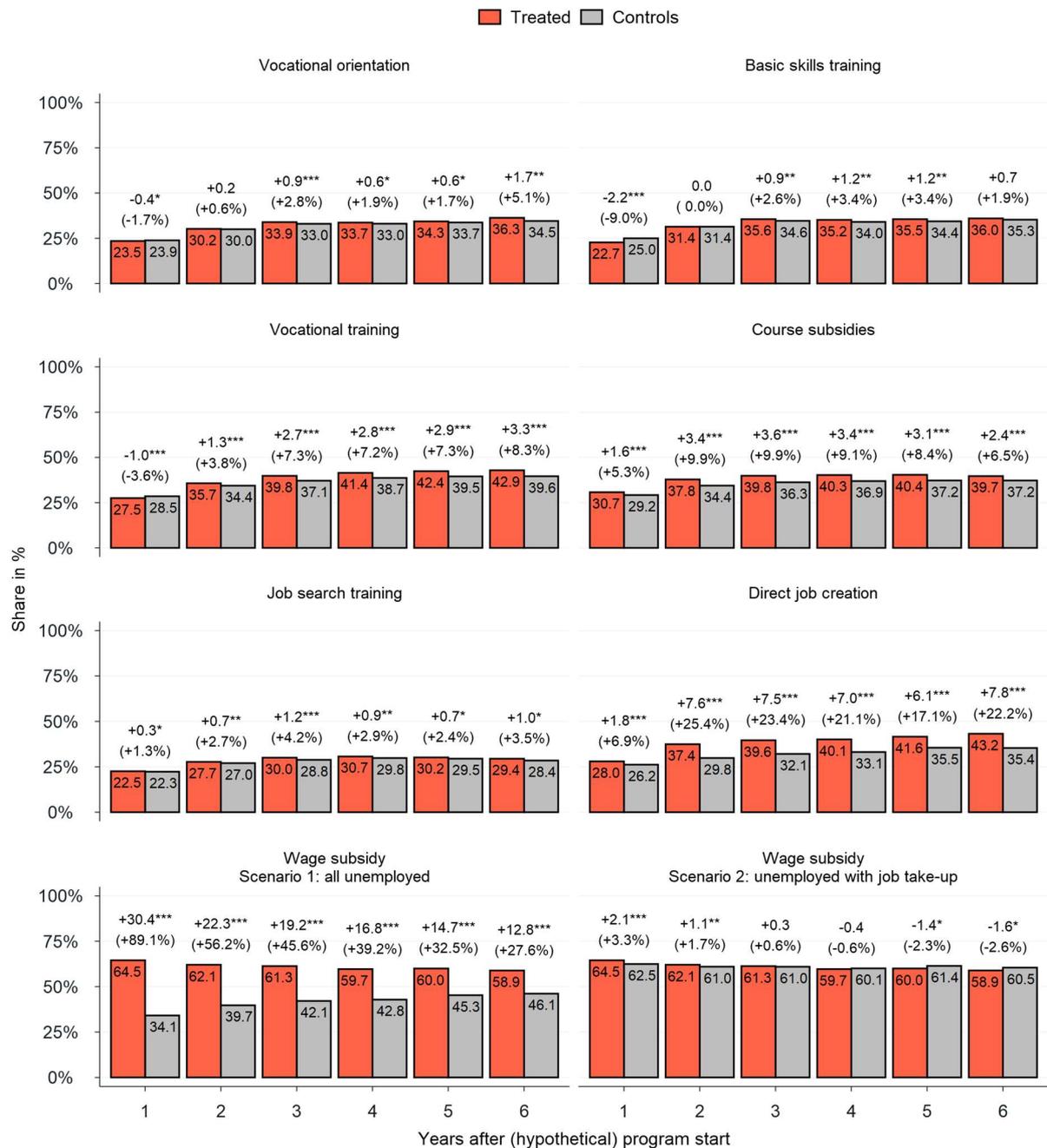
Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 8: Programme effects on the share of the treated long-term unemployed being unemployed
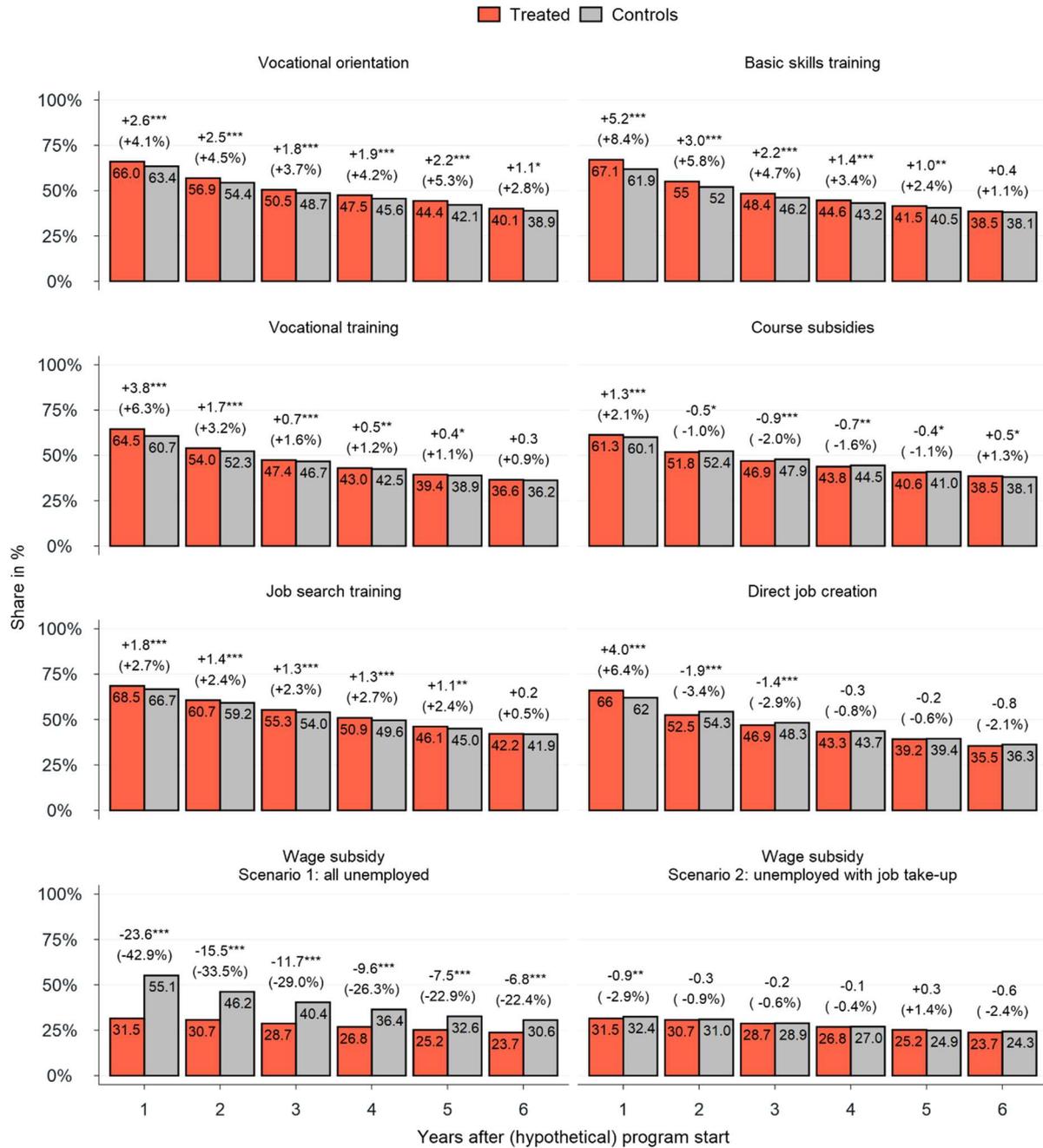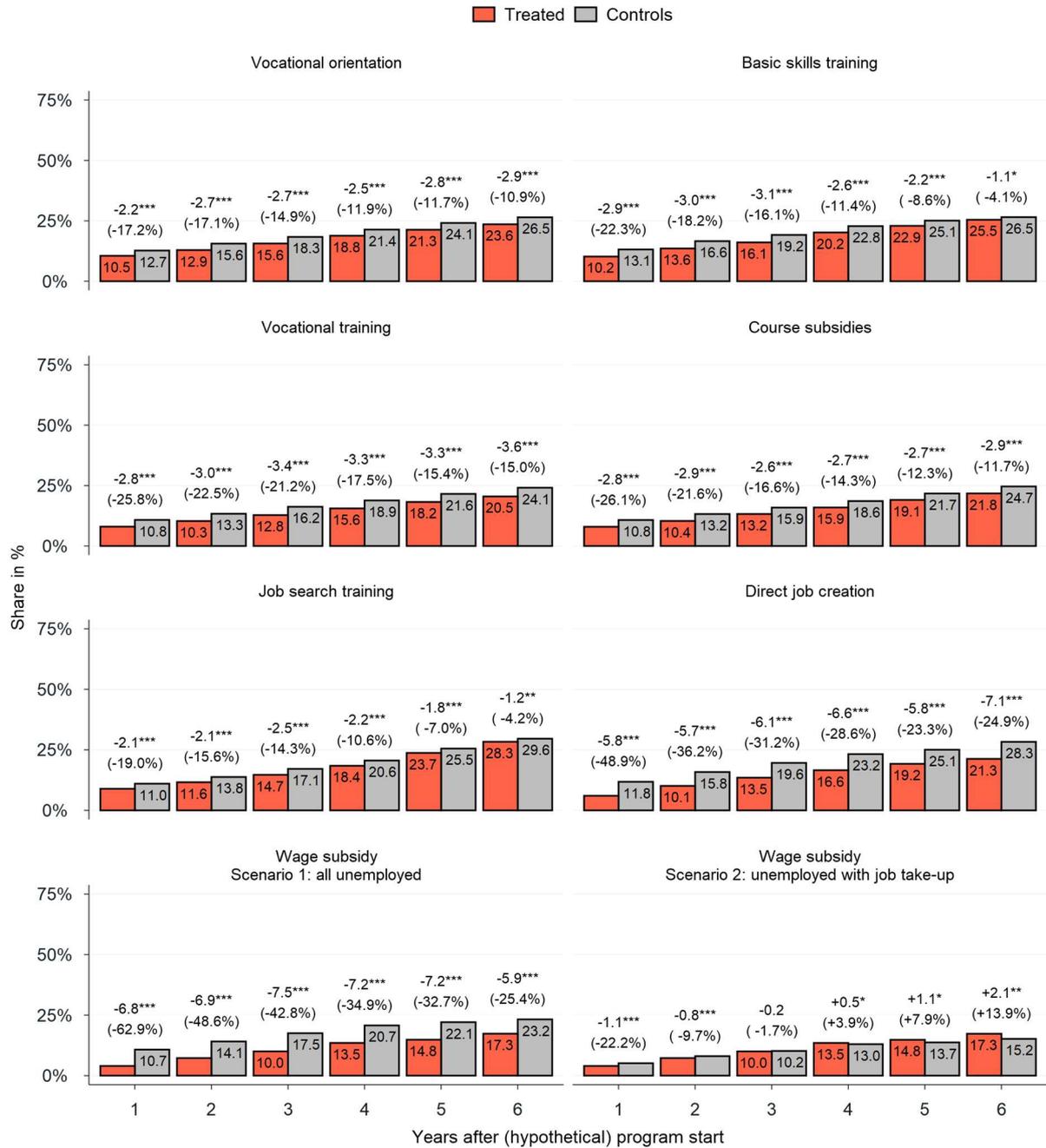

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 9: Programme effects on the share of the treated long-term unemployed being economically inactive
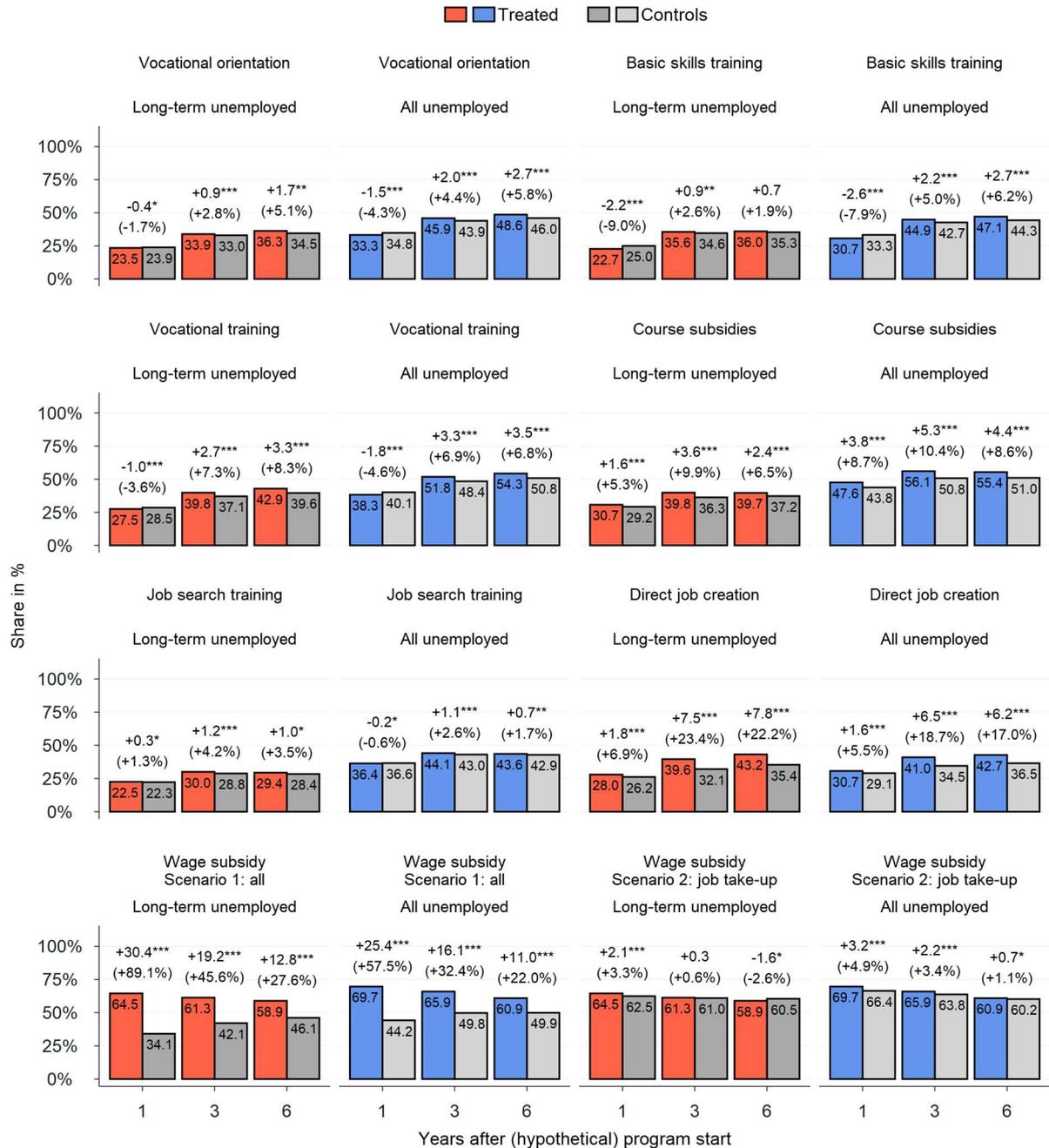

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 10: Comparison of programme effects on the share in total employment between long-term unemployed and all subsidised unemployed

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 11: Comparison of programme effects on the share being unemployed between long-term unemployed and all subsidised unemployed
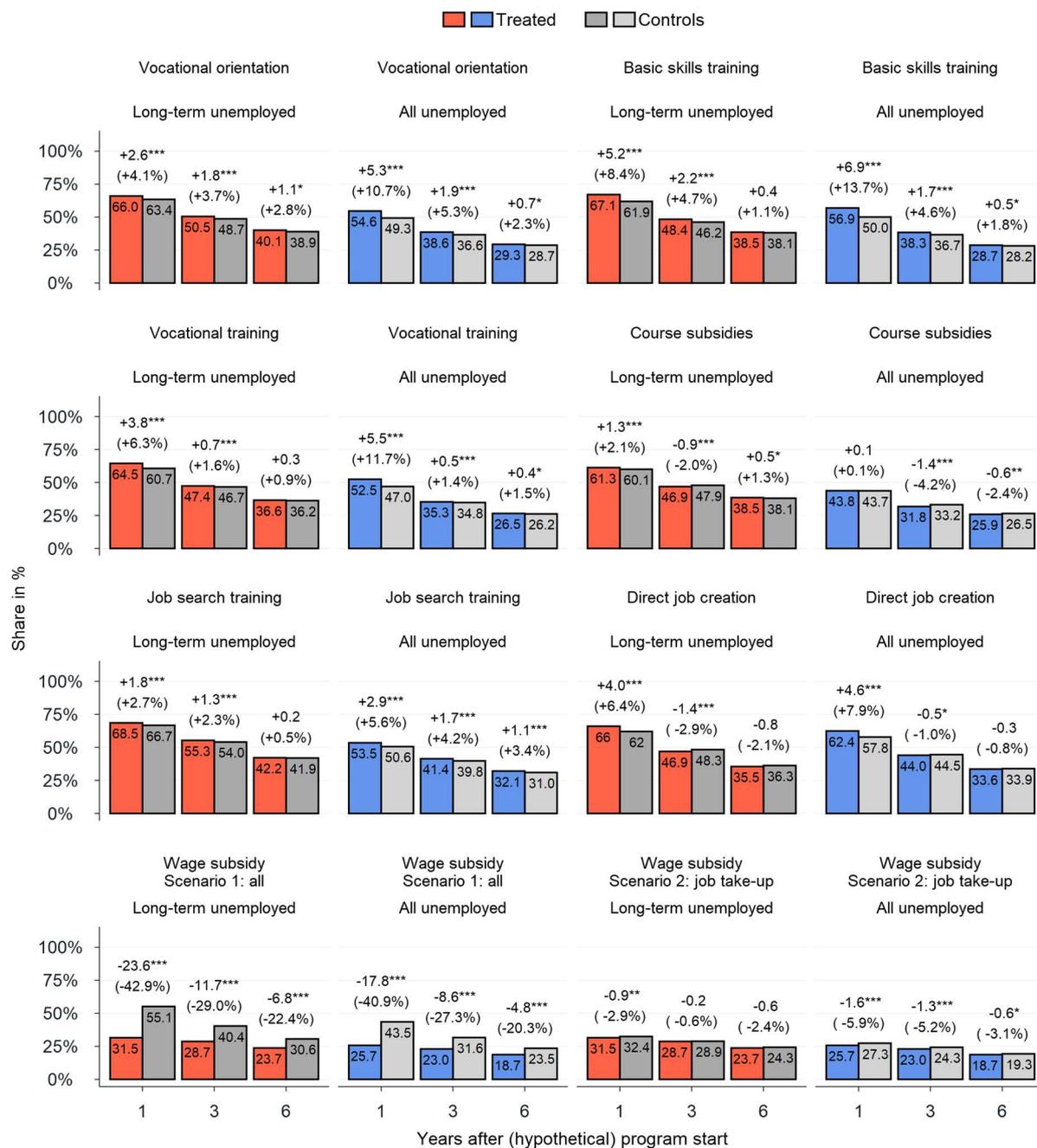

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Figure 12: Comparison of programme effects on the share being economically inactive between long-term unemployed and all subsidised unemployed
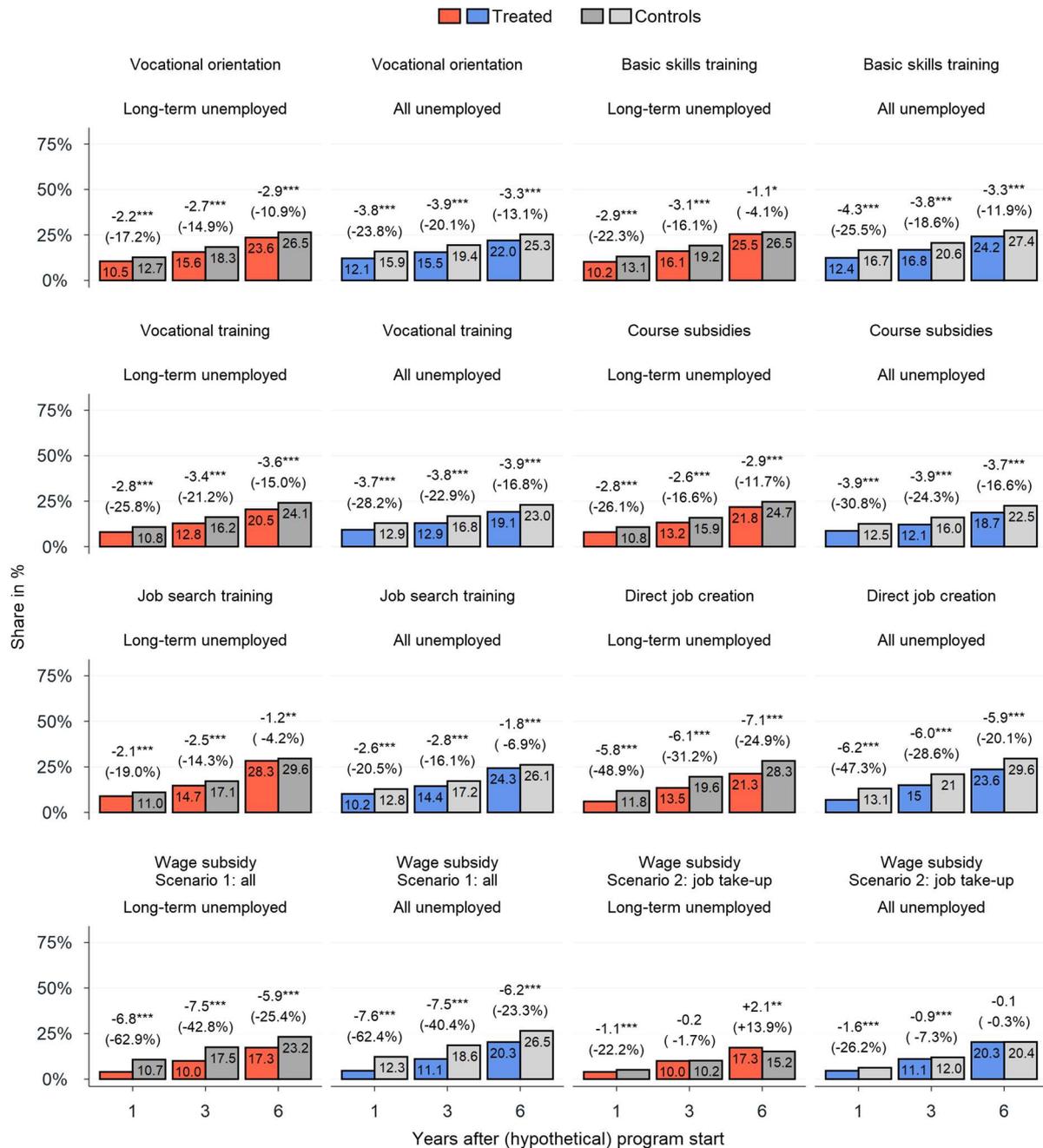

Source: AUR, ASSD, Statistics Austria, and own calculations. – In the bars: average share of treated and controls. Above the bars: Treatment effect as difference between treated and controls in percentage points and (in parentheses) in %. Statistical significance based on analytical standard errors as proposed by Abadie and Imbens (2006). *** significant at 1% level, ** significant at 5% level, * significant at 10% level.

Table 9: Programme participation before and after the month of (hypothetical) programme entry

	Before								After							
	Any		Same		Any		Same		Any		Same		Any		Same	
	Unemployment spell				Total				With evaluated particiation				Without			
Vocational orientation																
Treated	0.925		0.378		0.945		0.401		0.941		0.842		0.607		0.147	
Controls	0.831		0.180		0.860		0.194		0.505		0.047		0.440		0.047	
Difference	0.094		0.198		0.085		0.207		0.436		0.796		0.167		0.101	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Basic skills training																
Treated	0.955		0.551		0.966		0.551		0.986		0.974		0.651		0.315	
Controls	0.831		0.099		0.860		0.099		0.505		0.033		0.440		0.033	
Difference	0.124		0.452		0.106		0.452		0.481		0.941		0.211		0.282	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Vocational training																
Treated	0.941		0.621		0.958		0.657		0.974		0.955		0.522		0.198	
Controls	0.831		0.367		0.860		0.397		0.505		0.082		0.440		0.082	
Difference	0.110		0.254		0.098		0.260		0.469		0.873		0.082		0.116	
p>|t|	0.000		0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Course subsidies																
Treated	0.948		0.556		0.962		0.586		0.900		0.800		0.564		0.228	
Controls	0.831		0.190		0.860		0.206		0.505		0.035		0.440		0.035	
Difference	0.117		0.366		0.102		0.380		0.395		0.765		0.124		0.193	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Job search training																
Treated	0.886		0.403		0.919		0.447		0.947		0.912		0.509		0.083	
Controls	0.831		0.263		0.860		0.285		0.505		0.056		0.440		0.056	
Difference	0.055		0.140		0.059		0.162		0.442		0.856		0.069		0.028	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Direct job creation																
Treated	0.922		0.177		0.949		0.305		0.472		0.321		0.294		0.083	
Controls	0.831		0.049		0.860		0.082		0.505		0.030		0.440		0.030	
Difference	0.091		0.128		0.089		0.223		-0.033		0.291		-0.146		0.054	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***
Wage subsidy																
Treated	0.874		0.111		0.898		0.203		0.190		0.095		0.152		0.035	
Controls	0.815		0.079		0.842		0.130		0.211		0.020		0.195		0.020	
Difference	0.059		0.032		0.056		0.073		-0.021		0.075		-0.043		0.014	
p>|t|	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***	0.000	***

Source: AUR, ASSD, and own calculations. – Before: in the 4 years before the month of (hypothetical) programme entry. After: in the first year after the month of (hypothetical) programme entry. Any: any programme. Same: same programme as evaluated programme entry. Unemployment spell: only programme participation during the unemployment spell. Total: including programme participation before the unemployment spell. With vs. without evaluated programme participation. p-value from t-test.