

Direct job creation in Germany revisited: Is it effective for welfare recipients and does it matter whether participants receive a wage?

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Abstract

Bringing welfare recipients into jobs is a major goal of a German labour market policy reform in the year 2005. To achieve this goal major emphasis was given to job creation schemes which provide participants with temporary subsidized jobs mainly in the non-profit sector and which differ only with respect to a few features. We study and compare the effectiveness of three job creation schemes for welfare recipients for the programme inflow in mid 2005. This enables us to study the implications of single programme features for effectiveness. A major difference is that the traditional job creation scheme and work opportunities as contributory jobs provide participants with regular earnings, while in the One-Euro-Job scheme they only receive their benefit and additionally a small allowance to cover costs of working. Hence, participation in the latter programme in contrast to the other two programmes should provide higher incentives to search for regular jobs. We estimate participation effects on employment outcomes, earnings and welfare benefit levels with propensity score matching using rich administrative data. We find that the programmes are partly effective in moving welfare recipients to work and reducing their welfare benefit dependency. Moreover, our findings do not imply that for participants in the two schemes offering regular wages the incentives to search for regular jobs are much lower than for the alternative One-Euro-Jobs. Only with work opportunities as contributory jobs commercial jobs can be subsidized. This may explain why we find the most beneficial impacts for participants in this programme.

JEL classification: C13, I38, J68

Keywords: Evaluation of active labour market policy, propensity score matching, pairwise matching, workfare, welfare benefit recipients

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1. Introduction

Subsidizing temporary, mainly public and non-profit sector jobs for unemployed people with severe difficulties of finding regular jobs is a traditional tool of active labour market policy (ALMP). The goals of direct job creation include enhancing the employability and well-being of participants. Additional aims are integrating participants into regular jobs, providing public goods and relief work when unemployment is high (in specific periods, regions or occupations). Moreover, by offering such jobs to unemployed people public employment services (PES) can test their willingness to work.

Evidence on impacts of direct job creation schemes on participants' performance in the labour market is frequently not encouraging. Martin/Grubb (2001, p. 24) mention in their survey on ALMPs in OECD countries that there are few long-run benefits of direct job creation schemes and that they create low marginal product jobs. Results of many recent evaluation studies on the German traditional job creation scheme imply for most participant groups that participation prevents the take-up of regular jobs during the potential participation period without improving job finding perspectives thereafter (e.g., Caliendo/Hujer/Thomsen 2008a, Hujer/Thomsen 2006, Wunsch/Lechner 2008).

Past German evaluation studies were mainly concerned with participants who were unemployment insurance (UI) recipients prior to entering the job creation scheme and with periods, in which activation of unemployed people was not central to the agenda of labour market policy. Our central theme is that impacts of direct job creation might be different for welfare benefit recipients, for whom since 2005 such schemes operate under a new regime of mutual obligation to activate welfare recipients: The PES should assist them towards employment take-up and they are obliged to put considerable effort into finding jobs and thereby reducing their dependency on welfare.

There are a number of reasons why direct job creation might be more beneficial in our specific context. First of all, unemployed welfare benefit recipients are very frequently harder to place individuals. Therefore, their participation does not much prevent them from taking up regular jobs and there is a far larger scope to improve their employability and employment prospects than for UI recipients with a better past employment record. Second, given welfare recipients' low earnings potential, participants' wages in subsidized jobs often hardly exceed their welfare benefit. Therefore, they often do not provide any additional disincentive to search for regular jobs. Third, stronger job search obligations and lower restrictions on acceptable job offers under the new regime might imply that gains in human capital during participation do not lead to much higher reservations wages, which would slow down impacts on the employment prospects of participants.

We investigate impacts of three direct job creation schemes on the labour market performance of German welfare recipients. We analyse a period after the introduction of the "Basic Income Support for Job-Seekers" (SC II) in January 2005. This new regime replaced the former means-tested unemployment and social assistance by a new welfare benefit, the

unemployment benefit II, and introduced the system of mutual obligation. The reform came into force after a long period of high unemployment and rising poverty.¹

Two schemes subsidize contributory employment: the traditional job creation scheme and work opportunities with a regular wage; under the first scheme subsidized jobs are exempt from contributions to the UI fund, whereas under the latter scheme there are less restrictions on subsidizing commercial jobs and subsidy levels. The third alternative is a work opportunity scheme, where participants continue to receive their welfare benefit and on top of that one to two Euros per hour worked to compensate them for costs of working. Its popular name is therefore “One-Euro-Jobs”. In contrast to the other schemes, it is a programme with a high annual inflow of more than 600,000 persons. Some recent evaluation studies found that One-Euro-Job participation raises the prospects to enter regular employment for many groups of participants, though the impacts are usually not large (Hohmeyer 2009, Hohmeyer/Wolff 2007, Huber et al. 2009).

Our study compares the effectiveness of the three direct job creation schemes for the inflow of unemployed welfare recipients into the schemes between May and July 2005. We estimate net effects of treatment on the participants’ performance in the labour market for up to three years after participation started. We compare participants to similar welfare recipients who did not enter any of these programmes from May to July 2005 (joining-versus-waiting). We also estimate the impact of the job creation scheme and the work opportunities in contributory jobs compared with the alternative of participation in One-Euro-Jobs. The causal effects in this multiple treatment framework are estimated by radius-caliper matching, but also by further propensity score matching estimators to check the robustness of our results.

Our study uses rich administrative data. They include detailed information on socio-demographic characteristics, labour market performance, ALMP participation and welfare benefit levels for both the individuals under review and their household members. We regard treatment effects on unsubsidized contributory (regular) employment, (level of) dependence on welfare benefit and annual earnings.

There are at least three lessons to be learnt from the analyses. First, there is little research for European countries on the effectiveness of direct job creation paying a regular wage for welfare recipients under a mutual obligation regime. Does it bring welfare recipients back to work and out of welfare receipt? Second, past studies on the traditional job creation scheme find worse impacts on participants’ employment outcomes than recent studies on One-Euro-Jobs. This might be a consequence of different programme designs; participants receiving a regular wage have lower incentives to engage in job search than participants receiving not much more than their welfare benefit, while working. But it might be as much due to differences in characteristics of participant groups and time periods studied. Our direct comparison of the two schemes that imply receipt of regular wages for participants with the One-Euro-Job scheme under the same setting can shed some light on the incentive issue. Third, another small difference in programme design is that work opportunities as contributory jobs are less strict than the other schemes on subsidizing commercial jobs.

¹ This activation regime was adopted after a long period of persistently high unemployment with a level of nearly 10 % in 2004 (Source: OECD labour force statistics) and of rising poverty. At 11 % the poverty rate in 2004 had risen by 3.4 percentage points since 1995 (Förster/Mira d’Ercole 2008).

Hence, we can investigate the question whether the fact that treatment partly takes place in commercial jobs matters for the employment effects.

Our paper is structured as follows. Section two highlights major features of the new German welfare benefit system and the different job creation programmes under review. In section three we discuss some theoretical considerations on the effects of the programmes. Section four discusses previous research on the effectiveness of these programmes in Germany (if available), as well as some related international evidence on the impacts of job creation schemes on participants' success in the labour market. The econometric methods are discussed in section five. In section six we provide a description of the administrative data that our study relies on. Section seven provides the major results of our analysis. A summary of the results and major conclusions follow in the final section eight.

2. Institutional framework

Social Code II and direct job creation schemes

With the introduction of the Social Code (SC) II or "Basic Income Support for Job-Seekers" in January 2005 a major reform of the German unemployment benefit and welfare system came into force. The unemployment benefit II (UB II) was introduced as an integrative basic income support. This flat rate welfare benefit for households with an income below the official poverty line replaced the former unemployment assistance (UA) and flat rate social assistance.² The new welfare benefit's label "unemployment benefit II" is somewhat misleading. Benefit receipt is not conditional on unemployment or receiving no UI benefit.³ Eligibility depends on whether a person's household achieves an income below the poverty line, on limits on household wealth and on the fact that at least one household member is capable of working.⁴ Hence, people who are employed and achieve earnings or who receive UI benefits are eligible for the welfare benefit, if their household income is below the official poverty line. The welfare benefit then fills this gap. It covers cost of accommodation and heating and provides a cash benefit, which is currently 359 € per month for a single adult household.^{5, 6}

² The former means-tested UA benefit was earnings related with a replacement rate of 53 % for childless people and 57 % for parents. It was paid without a time limit to unemployed people who ran out of their UI benefit. Also people who just became unemployed and contributed to the UI fund for a period that was too short for qualifying for UI benefit could receive the less generous UA benefit. The reform of 2005 implied for many former UA recipients a reduction of their benefit.

³ The UI benefit is related to previous earnings with a replacement rate of 67 % for parents and 60 % for childless people. In contrast to UB II, it is time-limited and its entitlement length is increasing in age and length of past UI contribution periods during the seven years prior to the benefit claim. The maximum duration of UI receipt currently ranges from 12 months for those aged less than 50 years up to 24 months for UI claimants aged at least 58 years. Due to reforms it has changed twice during our observation window.

⁴ People who are aged between 15 and 64 and can work under the usual conditions of the labour market for at least three hours a day are regarded as employable. Only due to an illness or disability, it is possible not to fulfil this criterion (Article 8 SC II). If no member of a poor household is capable of working, the household is eligible for social assistance.

⁵ This is also the base cash benefit for a lone parent or for an adult with a partner aged younger than 18 years. For further persons in a household who are capable of working it is 20 % lower, e.g., for children aged 15 to 17 years. For two partners aged at least 18 years it is 90 % of 359 € for each of them. For children younger than 15 years the cash benefit is 60 % of 359 €.

⁶ The cash benefit is indexed to changes of the old-age pension and therefore altered once a year in July. Before July 2006 it was lower in East Germany (331 €) than in West Germany (345 €). People who ran out of their UI receipt receive a small additional benefit in the two subsequent years after exhausting UI. Moreover, some further costs of the households are covered by the welfare benefit, e.g., for health insurance.

Earnings are deducted from the welfare benefit at a marginal benefit reduction rate that is smaller than 100 %. E.g., for a single adult the first 100 € earned marginal benefit reduction rate is zero, it is 80 % for earnings above 100 but no higher than 800 € and 90 % for earnings above 800 € and but no higher than 1,200 €.

The reform led to a strong emphasis on activating a broad group of (mainly) unemployed welfare recipients. Furthermore, it enlarged the group which is focussed by labour market policies: All household members, who are capable of working, should contribute to reducing the household's dependence on welfare benefit. They are in contact with the PES and are subject to activation policies. Prior to the reform an UA recipient's household members had no such obligation and members of households receiving social assistance were often not registered at the PES. As one means of activation three direct job creation schemes were made available for UB II recipients: The traditional job creation scheme (*Arbeitsbeschaffungsmaßnahmen*), work opportunities with an allowance for additional expenses (so-called One-Euro-Jobs) and work opportunities paying participants a wage. The schemes are similar since they provide unemployed welfare recipients with a job, subsidize additional jobs of public interest, and are subordinate to regular employment, vocational training and other active labour market programmes (ALMPs) (Federal Employment Agency 2005). They were designed for unemployed people with low employment prospects.

Of these three programmes One-Euro-Jobs are far more important than the others in terms of programme inflow. More than 600,000 individuals entered the programme each year from 2005 and 2008 (Table 1 in the Appendix). The other two schemes are of much less importance with an annual inflow of welfare recipients ranging from 26,000 to 62,000 people over the same period.⁷ Not surprisingly, the total programme expenditure is highest for One-Euro-Jobs with normally more than one billion Euros per year (Table 2). Nevertheless, looking at average direct costs per month and participant One-Euro-Jobs are the cheapest programme with about 350 € compared to 1,100 € to 2,200 € in the other programmes paying a wage.⁸ However, if we add the total welfare benefit of a single adult to the average direct programme cost of One-Euro-Jobs with no other means of income, we can reach a level of somewhat more than 1,000 € per month. We will later show that for the unemployed welfare recipients we study the average benefit level is of an order of magnitude of around 700 € per month.

Although the programmes are similar, they nevertheless differ with respect to certain programme characteristics. Below, the three programmes are briefly described. Table 3 summarizes key characteristics of the programmes.

Job creation scheme (JCS)

The JCS (currently regulated under Art. 260-271 SC III) has been introduced with the law on employment promotion ("*Arbeitsförderungsgesetz*") in 1969. In the 1990s and the early

⁷ Table 1 as well as all data and figures in this study exclude the 69 districts in which only local authorities are in charge of administering the UB II, for which no systematic information is available in the period just after the reform due to problems with data collection. According to estimates of the Federal Employment Agency, around 13 % of unemployed welfare recipients are cared for in these 69 districts. In 2007, around 94,000 entries into work opportunities (including those with a wage) were reported to the statistics of the Federal Employment Agency by 67 of these 69 districts (Department for Statistics of the Federal Employment Agency 2007).

⁸ However, receiving the wage is of course not necessarily sufficient to move the participant's household above the poverty line, so that the participants in these scheme can still receive (a reduced) welfare benefit.

2000s it was one of the most important ALMPs for UI and UA benefit recipients in terms of programme inflow (Hujer/Thomsen 2006). In 2005, it was made available to UB II recipients. One primary goal of the JCS is relieving regional or professional labour markets with excess labour supply. Due to this goal the JCS is more predominant in East than in West Germany with a much lower unemployment rate. JCS should provide unemployed people with temporary employment, if other policies are unlikely to achieve their re-employment in regular jobs and if they can only find work through a JCS (Federal Employment Agency 2004). Since 2004, stronger emphasis is placed on the goal of keeping up or increasing the employability of participants instead of integrating them into the regular labour market. Nevertheless, the law on JCS still specifies a preference for participations that are expected to raise re-employment prospects of participants (Art. 260 (2), SC III).

Jobs carried out have to be additional jobs of public utility. The criterion “additional” implies that without the subsidy the tasks related to the subsidized job would not or only later have been accomplished. The criterion “public utility” instead implies that the output produced is by and large a public good and that commercial jobs should not qualify for the subsidy. The participation is mainly organised by public sector or non-profit-making organisations to which the PES assigns participants. Participants earn a regular wage while a subsidy of 900 and 1,300 € per month and participant is paid to the employers in case of full-time employment (Article 264 SC III).

Subsidies can deviate from the above specified lump-sums and some regulation is directly concerned with wages paid. The subsidies can be up to 10 % higher due to specific characteristics of the job or of the regional (labour market) situation. Moreover, for specific costs of organising the participation an additional subsidy of up to 300 € monthly is possible. Taken together the subsidies have some fixed upper limits depending on the qualification of participants.

In many cases subsidies can also be a lot lower than the mentioned lump-sums. First, they should never exceed the gross wage of the participant. Second, in case of part-time jobs the subsidy lump-sum is reduced accordingly. Third, for participants aged less than 25 years the subsidy and wage should be designed such that there is an incentive to enter vocational training. In other words, their wages should be lower than apprenticeship pay.⁹ To sum up, subsidies and wages are possible that are even far lower than welfare benefits, which is of particular importance for young participants and matters for our West German sample as we will see later.

The subsidized jobs are subject to social security contribution with the exception of UI and thus JCS participation does not contribute to becoming eligible for UI benefit. Participation lasts up to twelve months. If employers offer a permanent contract after participation or if the tasks carried out are of particular importance to achieve goals of regional labour market policy, it can be up to 24 months. For participants aged 55 or older the maximum duration is even 36 months. Working time can be full- or part-time. Jobs often take place in social services and agriculture and landscaping.¹⁰

⁹ According to statistics of the German Federal Institute for Vocational Education and Training the monthly apprenticeship pay was 529 € in East and 623 € in West Germany. For specific types of vocational training in firms the apprenticeship pay is even lower than the highest monthly wage in minor non-contributory employment of 400 €.

¹⁰ Source: Department for Statistics of the Federal Employment Agency

Since 2009, welfare recipients are no longer eligible for the JCS. It is now limited to UI benefit recipients. However, this was not due to negative results of research on the effectiveness of the JCS for means-tested benefit recipients, since this is the first study on this topic in Germany. It was rather due to the fact that contributory work opportunities are available for welfare recipients. Hence, the JCS employer subsidy can well be administered through this scheme.

One-Euro-Jobs (1EJs)

1EJs have been introduced in 2005 for UB II recipients. A similar programme existed before for recipients of social assistance benefits.

1EJs have various aims (Federal Employment Agency 2005). First, they should raise the employability of long-term unemployed and enhance their employment prospects. Furthermore, they aim at social integration of needy unemployed persons by providing them with a task and a daily routine. Moreover, they can be seen as a contribution to the provision of public goods by benefit recipients who work for their UB II receipt. Finally, 1EJs are also a means of testing an unemployed individual's willingness to work. Benefits can be cut temporarily, if a benefit recipient fails to start a 1EJ or does not complete a given participation without a good reason.

As JCS, 1EJs have to be additional jobs of public utility (SC II, Art. 16d). The participants receive an allowance of usually one to two Euros per hour worked in addition to their UB II. Jobs are not subject to social security contributions. A lump sum is paid to the organisation providing the 1EJ to cover the related costs. Participation is temporary. In 2005, participation usually lasted up to six months (Hohmeyer/Schöll/Wolff 2006). To ensure that participants have sufficient time to engage in job search, 1EJs are supposed to be part-time jobs with an average working time of no more than 30 hours per week. In the majority of cases, planned working time equals the upper limit of 30 hours per week (Department for Statistics of the Federal Employment Agency 2006, 2007). However, weekly working hours can be designed variably in order to meet specific needs of participants. 1EJs often take place in the sectors of infrastructure improvement, environmental protection and landscaping and health and care (Department for Statistics of the Federal Employment Agency 2009).

1EJs should be created for unemployed persons with severe difficulties to find a job (SC II, Art. 16d). This conflicts with the programme also serving as a work-test which might lead to targeting rather unemployed welfare recipients with good employment prospects. Moreover, young unemployed people under the age of 25 years by law have to be placed to employment, vocational training or a 1EJ or work opportunities in contributory jobs without delay (Art. 3 (2) SC II), which implies that they are a specific, though not necessarily hard to place, target group of the programme.

Work opportunities in contributory jobs (WO-CJ)

Like 1EJs, WO-CJ (Art. 16d SC II) have been introduced as a specific programme for UB II recipients in 2005. Before, a similar programme existed for social assistance benefit recipients. The goals of the programme are similar to the other two programmes but WO-CJ focus more strongly on a permanent integration of participants into regular employment (Federal Employment Agency 2005).

In contrast to jobs subsidized by the two programmes that we already discussed, WO-CJs do not necessarily have to be additional jobs of public utility. It can be abstained from these two criteria if for instance prospects of integrating a participant into the regular labour market are regarded as high by the job centre. A wage subsidy is paid to the employer. The level of the subsidy is not explicitly regulated under the SC II but it should be designed such that employers are compensated for the difference between the wage and the (lower) productivity of the worker and should be comparable to similar subsidies. Thus, in contrast to JCS there are no strict upper limits for the subsidy. That may help to bring participants with a relatively high subsidy into well paid jobs. From 2009 on, the Federal Employment Agency recommends that the subsidy should be designed according to the rules of the traditional JCS (Federal Employment Agency 2009).

The participant earns a regular wage in a contributory job. Before the year 2009 this included contributions to UI. Hence, in contrast to the previously discussed schemes participants could become eligible for a new entitlement to UI benefit, provided that programme participation helped them to pay such contributions for at least one year in the two years prior to their UI benefit claim. In order to prevent malpractice, the duration of WO-CJ is restricted to less than twelve months. Of course, this does not prevent some participants from renewing their eligibility for UI benefits through a WO-CJ participation combined with some sufficiently long previous or subsequent period of unsubsidised contributory employment.

More than half of the WO-CJs in 2007 and 2008 were in the sectors of infrastructure improvement and environment protection landscaping (Department for Statistics of the Federal Employment Agency 2008, 2009).

3. Theoretical considerations

The selected employment programmes might have both beneficial as well as adverse effects on the labour market performance of welfare recipients who participate. Let us start with some of the beneficial effects. Participants' effectiveness as job-seekers might increase after programme participation, leading to better prospects of working in a regular job, higher earnings and in turn less need for income support (Calmfors 1994). One reason for this is that participation provides the welfare benefit recipients with some work experience. This may matter in particular for people who have been jobless for a very long period and are no longer used to regular work schedules. By participating in one of the schemes, this obstacle for taking up regular jobs may disappear. Next, participation signals a welfare recipient's willingness to work to employers. Moreover, they might receive both formal and informal training while holding their subsidized job. This raises their competitiveness in the labour market and hence their prospects to successfully apply for some job offers and to remain in their new job.

Since long-term joblessness may discourage unemployed welfare recipients, the contact to the work environment through participating in one of the programmes might have further beneficial effects. It might raise their motivation to search for regular jobs by improving their well-being. These are implications of psychological theories, e.g., Jahoda's (1982) latent function approach that regards fundamental needs that can be achieved by working: time structure, social contacts, participation in collective purposes, status and identity and regular

activity. Also Fryer's (1986) agency approach implies a beneficial impact of taking-up work on well-being as it raises a person's control over his/her life situation. To what extent such impacts can be achieved depends certainly on how well the programme participation fits the needs of the participant and contributes to resolving some of his/her problems for an employment take-up.

Potential adverse effects include first of all that job search effort for regular jobs is reduced as long as participation in the schemes can continue. One reason for this is that participants compared to unemployed welfare recipients have less time to search for work while being employed in one of the schemes. In case of the JCS and WO-CJ but not in the 1EJ scheme, participants also achieve regular earnings which can be considerably higher than the welfare benefit and not necessarily lower than wages that they could achieve in regular jobs. For many welfare recipients this might be a considerable disincentive to search and take up a regular job as long as participation is not completed. In other words, the two subsidized contributory employment schemes might raise the welfare recipient's reservation wages and reduce his/her search effort considerably during participation. But naturally if the wages achieved during participation tend to be not or not much higher than the welfare benefit, it is rather the loss of time for job search that matters. Some disutility of working time might even reduce reservation wages. However, as already mentioned participants might also derive a direct utility from working, which would raise their reservation wage and lead to less intensive search for regular jobs. Taken together participation should imply the well-known lock-in effect (van Ours 2004): During the potential programme participation period the rate of taking up an unsubsidized job is reduced. This lock-in effect should be more severe for participants receiving a wage than for 1EJ participants.

Even after participation is completed, the treatment by any of the programmes might even imply a lower regular employment rate. The reason is that many still have to search for a considerable period of time for a regular job prior to working, before they can catch up the initial disadvantage of less intensive job search. Moreover, the participation in the programmes could rather stigmatise the participant than signal the participant's willingness to work to employers. This could be important if it is well known that only very hard to place individuals participate in such schemes. Also for these reasons adverse impacts on employment perspectives of participants are possible and might persist after completing programme participation.

Differences in the impacts of the three programmes might not only arise due to differences in payment during participation but also for other reasons. One issue of importance might be that the potential duration of the programmes differs with longer programmes leading to a higher initial lock-in effect but presumably later to a higher beneficial effect, once the participation is completed. Next, the selection of subsidized jobs may matter. Of the three schemes only WO-CJ can subsidize commercial jobs. Therefore, participants in this scheme have presumably a higher chance than participants in one of the other programmes to continue working in an unsubsidized job in the company where participation took place. Working in commercial jobs might also imply that participants improve skills, for which there is high net demand in the economy. For these reasons the treatment by WO-CJ might be more effective than treatment by one of the other two schemes. Next, in contrast to 1EJs, work opportunities in contributory jobs and the JCS are implemented relatively rarely.

Therefore, job centres presumably put more effort in ensuring a positive selection of institutions organising these schemes. This could lead to a higher quality of treatment than for the large scale 1EJ programme.

Job centres though could place welfare recipients to WO-CJ, because it is likely that they gain a contribution record to UI that is sufficient to claim UI after completing their participation. These participants would either no longer receive their welfare benefit or receive a reduced welfare benefit. Hence, there could be carousel effects. If job centres at least partly implement the policy this way, they might assign people with relatively good employment prospects to the scheme, who are less likely than hard-to-place unemployed to need this type of treatment to improve their employability. Furthermore, this might set work disincentives for participants (Sianesi 2004).

4. Previous findings

4.1 Direct job creation schemes in Germany

4.1.1 Traditional job creation scheme

As the JCS already has been introduced in 1969 and they have been a major programme in the past particularly after the German reunification, various studies exist looking at the effectiveness of the programme. All existing studies analyse its effects for UI and UA benefit recipients. Not a single study regards recipients of the new welfare benefit, the UB II, since its introduction in the year 2005.

The earliest studies have been conducted after the German unification at the start of the 1990s when the JCS played a major role in East Germany. The JCS was used as relief work in a situation of extremely high joblessness during the transition shock period. As administrative data of the relevant population were not available in the 1990s, these studies are based on survey data with the disadvantage of representing small samples of the population under review. This only allowed analyses on a comparatively high level of aggregation, e.g., concerning the time of entry into programme, personal characteristics or programme types. We therefore focus on more recent studies based on administrative data in this literature review.¹¹

In the early 2000s large administrative datasets became available. Therefore, several micro-evaluation studies of the JCS were conducted applying a statistical matching approach comparing participants in the standard case with similar (unemployed) non-participants who are eligible for the programme. The bulk of the studies estimate the net impact of the programme on the participants' probability of working in unsubsidized contributory jobs at different points in time after programme start.

Several studies were carried out by Caliendo, Hujer and Thomsen (e.g., Caliendo 2006, Caliendo/Hujer/Thomsen 2008a,b, Hujer/Thomsen 2010). Most of their analyses are based on unemployed individuals entering the programme in February 2000. Only the study of Hujer/Thomsen (2010) analyses JCS inflow cohorts at later points in time covering entrances

¹¹ Reviews of the early studies using survey data can be found in Fitzenberger/Speckesser (2000), Hagen/Steiner (2000), Hujer/Caliendo (2001), Hujer/Thomsen (2006) and Thomsen (2007).

between July 2000 and March 2001. Furthermore, there are several studies by Stephan and others using a particular database of the Federal Employment Agency called 'TrEffeR' (Stephan/Pahnke 2008, Stephan/Rässler/Schewe 2008). Besides, Wunsch and Lechner (2008) analysed the effects of programme participation including JCS for persons entering unemployment between January 2000 and the first half of December 2002.

To a large extent the results of the studies implied adverse treatment effects on the treated: in the short run, strong lock-in effects on the employment rate of participants occur (Caliendo/Hujer/Thomsen 2008b, Hujer/Thomsen 2010) and participants recover only slowly from the initial lock-in period (Wunsch/Lechner 2008). Looking at medium-term effects, some studies find that employment effects stay negative until the end of the available observation windows whereas others find insignificant or small positive effects. The estimates of Caliendo, Hujer and Thomsen imply that nearly three years after programme start effects on the probability of holding a regular job are still significantly negative for East German participants, insignificant for male participants in West Germany, and positive and well-determined for West German women (Caliendo 2006, Caliendo/Hujer/Thomsen 2008a). The results of Wunsch and Lechner (2008) imply negative impacts of JCS participation on employment prospects and cumulated time in employment 2.5 years after programme start. However, Wunsch and Lechner use a different definition of non-participation. While the other authors define non-participation in the sense of waiting, they require non-participants not to start a programme in a longer period of time of 18 months. This might lead to a positive selection of controls and thus to less favourable employment effects.¹² Stephan and Pahnke (2008) find 42 months after programme start an insignificant effect on employment prospects for jobs with a duration of up to six months and a slightly positive effect of jobs with a duration between seven and twelve months. But the cumulated regular employment history over the entire 42 months period is still negatively affected by JCS participation.

The estimated impacts of JCS treatment on the employment performance of aggregate participant groups are certainly not promising.¹³ Yet, there are several papers studying effect heterogeneity to see whether specific groups of participants nevertheless benefit from participation or specific programme types achieve better results. These results provide some hints for implementing the JCS in a way that improves their employment effects for participants.

Caliendo and others (Caliendo 2006, Caliendo/Hujer/Thomsen 2008a) analyse different groups of participants according to personal characteristics and find that the net impacts on the regular employment rate of participants vary to some extent over different participant groups: For many subgroups there are no significant treatment effects but in West Germany long-term unemployed men and women, highly qualified men and older women benefit from participation. In East Germany, there are negative effects on the regular employment rate of male and female participants with a short unemployment duration and for middle-aged women, whereas there are small positive effects for long-term (at least 12 months)

¹² For the discussion of different definitions of non-treatment and its impact on results see Sianesi (2008) and Stephan (2008).

¹³ There are also studies which analyse the scheme's effects on the labour market and not only on participants. According to results of these regional panel data analyses, an increased intensity of the job creation scheme tends to have adverse effects on the labour market. Following Hagen (2004) it reduces the long-term (regular) labour demand in East Germany. According to the results of Hujer/Zeiss (2005) increased intensity of the job creation scheme reduces the efficiency matching function in West Germany.

unemployed women. Hujer and Thomsen identify effect heterogeneity according to duration of unemployment before (potential) entry into the programme (Hujer/Thomsen 2010, Thomsen 2007). In West Germany, positive treatment effects occur 30 months after programme start only for those who start the programme in the fifth or ninth quarter after entering unemployment. The authors conclude that JCS participation is less harmful for long-term than for short-term unemployed. In East Germany, no positive treatment effects occur 30 months after programme start but only negative and insignificant effects.

With respect to programme heterogeneity, Caliendo, Hujer and Thomsen analyse the effectiveness of different types of JCS compared to non-participation ('waiting') (Caliendo 2006, Caliendo/Hujer/Thomsen 2006). They distinguish between five different industries, two types of support (regular vs. increased) and two implementing organisations (public vs. private). Again, they find positive employment effects only for some groups, i.e., men in West Germany in "Office and Service Sector" and women in East Germany in "Community Service Sector".

Furthermore, there are studies estimating the effects of participation in the JCS not only compared to non-participation or 'waiting', but also compared to participation in a different programme (Stephan/Pahnke 2008, Wunsch/Lechner 2008). By working with a multiple treatment framework, they shed light on the issue whether a different treatment would have been more effective for JCS participants. Stephan and Pahnke compare participation in JCS to provision of skills and short-term training and find no positive effects of JCS participation compared with participation in one of the other programmes with respect to employment prospects and cumulated employment in the 3.5 years after programme start. But it has to be kept in mind that the comparison is not easy due to difficulties to find an adequate control group because participants differ from those in training programmes. Wunsch and Lechner (2008) found that JCS participants would have benefited from participating in short-term training, a combination of several short training measures or general further training with a duration of more than six months. None of the participant groups of the other observed programmes would have benefited from participating in the JCS instead.

4.1.2 One-Euro-Jobs

1EJs have been introduced for welfare recipients in 2005. Since then several micro evaluation studies have been conducted looking at participants starting the programme in 2005 shortly after the introduction of the SC II (Hohmeyer 2009, Hohmeyer/Wolff 2007, Wolff/Popp/Zabel 2010) and between November 2006 and March 2007 (Huber et al. 2009). In general, lock-in effects occur in the short run. Yet, with an order of magnitude of two to four percentage points, the net reduction of the participants' employment rate in the first couple of months after programme start is negligible compared with lock-in effects that many studies find for JCS participation (Hohmeyer 2009, Hohmeyer/Wolff 2007). About 1.5 to two years after programme start, small positive effects on employment prospects emerge for participants from West Germany and East German women, but not for East German men (Hohmeyer 2009). Despite these small positive employment effects the probability to leave welfare benefit receipt is rather negatively affected for participants (Hohmeyer/Wolff 2007).

There is considerable heterogeneity of 1EJ-impacts over different participant groups, in particular depending on the age of participants and time when the last contributory job ended. For participants aged younger than 25 years, the effects on the employment rate tend to be negative and lower than for the other age groups (Hohmeyer/Wolff 2007, Wolff/Popp/Zabel 2010). For participants who lost their last job in 2004, the treatment effect is negative 20 months after programme start. For those who lost their job before the year 2004 or who were never regularly employed the opposite is true. Employment effects are largest for West German women who lost their last contributory job between 1992 and 2000. Another study of Huber et al. (2009) finds positive and weakly significant employment effects roughly one year after programme start for participants who are male, who are not lone parents and who do not have a migration background.

Hohmeyer (2009) analyses different types of 1EJs according to planned duration and working hours. She finds little effect heterogeneity with respect to working hours, but some with respect to the (planned) length of participation: while short programmes perform better in the short run, there is evidence that longer programmes catch up in the long term.

Overall, effects of 1EJs are qualitatively similar to those of the JCS, but lock-in effects are smaller and positive effects emerge earlier than for the JCS. Thus, results for 1EJs are to some extent more optimistic than those for the JCS. But we should keep in mind that until now studies of the JCS did regard mainly participants who received UI benefits prior to entering the programme. On average they tend to have less difficulties of finding jobs than unemployed welfare recipients, who by definition are a selection of people with much less success in the labour market. Moreover, some of the past studies on the JCS point towards favourable employment impacts for long-term unemployed participants and hence people who are more similar to welfare benefit recipients than the average JCS participant in these studies. Therefore, only a direct comparison of welfare recipients participating in the JCS with those who participate in 1EJs can shed light on the question whether a 1EJ treatment actually has a more favourable impact on the performance in the labour market and prospects to become less dependent on welfare for those welfare recipients treated by the JCS.

4.1.3 Work opportunities in contributory jobs

WO-CJ have only been introduced in 2005 for UB II recipients. Before, they existed for social assistance recipients but no evaluation studies were conducted due to a lack of data bases. Consequently, knowledge on WO-CJ is scarce so far. There are descriptive studies on the participant structure in 2005 (Bernhard/Hohmeyer/Jozwiak 2006, Hohmeyer/Schöll/Wolff 2006). Furthermore, one qualitative study exists conducting a process evaluation of a small-scale experiment called “Job Trainer NRW” which is based on the legal framework of WO-CJ and the European Social Fund (Bauer/Fuchs 2009). As it is an experiment with special conditions, results are not comparable to WO-CJ in general. Bauer and Fuchs (2009) find programme participants to be a positive selection out of the unemployed.

4.2 International evidence

At most weak positive effects of job creation programmes in the longer term are likewise found by comparative international research for Germany as well as other countries.

There are several studies that compare the effects of different ALMPs on the labour market performance and benefit receipt of participants either by directly estimating the differences or just by comparing results of different studies (Bolvig/Jensen/Rosholm 2003, Calmfors/Forslund/Hemström 2002, Gerfin/Lechner 2002, Kluge 2006, Martin/Grubb 2001, Ochel 2004, Sianesi 2008). Regarding employment programmes these studies conclude that working in a market environment matters for the effectiveness of the programme: while subsidised and private sector employment does have positive impacts on the labour market performance of participants, subsidized public and other non-profit sector employment has only small or insignificant effects.

Consequently, for a programme like WO-CJ which more often takes place in a market environment we would expect larger treatment effects than for the job creation and 1EJ scheme which are restricted to subsidize jobs only if they are additional and of public interest.

However, microeconomic methods applied to estimate causal treatment effects on the treated for subsidized private sector employment may not be adequate to identify such effects. They cannot properly deal with substitution and windfall effects, which are likely to occur in the case of private sector employment.

5. Evaluation approach and econometric method

Evaluation approach

We are interested in the effect of participation in one of the three job creation programmes compared to non-participation as well as compared to participation in one of the other programmes. Participation is defined as starting the programme in a given period of time. Non-participation is here defined in the sense of 'waiting' which means not starting an employment programme in the given period of time (Sianesi 2004, 2008, Stephan 2008). Nevertheless, non-participants in this sense can start an employment programme later on or can start a different programme in the time period.

With $R-1$ different employment programmes, we have R mutually exclusive and exhaustive treatments as non-participation is usually also defined as treatment. Here, the fundamental evaluation problem arises because we cannot observe all R potential outcomes after R potential treatments for one individual at the same time but only one. To overcome this problem, we compare labour market outcomes of persons receiving treatment r with a group of similar individuals receiving treatment s . As we have a non-experimental design, participants in treatment r differ from participants in treatment s and their labour market outcomes would be different even without the different types of treatment. To tackle this selection problem we apply a statistical matching approach. Basic idea is to find a group of persons receiving treatment s who are similar to participants in treatment r in all relevant determinants of the outcomes regarded in the analysis. For statistical matching rich data is needed as the crucial assumption of this approach is that we observe all relevant

determinants that influence both the participation probability and the potential labour market outcomes.

Method

A standard framework to solve the fundamental evaluation problem in a non-experimental design is the Roy (1951) - Rubin (1974) - model of potential outcomes.¹⁴ This approach for binary treatments was extended by Imbens (2000) and Lechner (2001) for analysing multiple treatments.

With $R-1$ programmes and non-participation, we have R potential outcomes for an individual i : $Y_i^0, Y_i^1, \dots, Y_i^{R-1}$

As treatments are mutually exclusive, only one of the potential outcomes of an individual can be observed.

When comparing the effects of R treatments, we basically face a multinomial problem. Lechner (2002) compared results based on binary (pairwise) and multinomial matching and achieved similar results with both approaches. Thus, we will stick to pairwise comparisons of the different treatments comparing only two treatments r and s at a time.

Because of the fundamental evaluation problem, the causal effect of receiving treatment r and not treatment s $Y_i^r - Y_i^s$ is not ascertained.

The parameter of interest in our case is the average treatment effect on the treated (ATT) or net impact of treatment on the participants of programme r for a chosen outcome Y

$$E(Y_i^r - Y_i^s | D = r),$$

which is the expected difference in the outcomes for those participating in treatment r .¹⁵ D_i indicates the treatment status of individual i .

To find an adequate control group of participants in treatment s who resemble participants in r in the relevant aspects, we employ a statistical matching approach. If we control for all factors X influencing the participation probability and the outcome, the ATT can be estimated by the difference of labour market outcomes of participants in r and of the control group participating in s :

$$E(Y^r - Y^s | D = r, X) = E(Y^r | D = r, X) - E(Y^s | D = s, X) = \tau_{ATT}^{r,s}$$

The crucial assumption we have to make so that the ATT can be identified in this way is that given the (pre-treatment) characteristics X , the programme chosen by a particular individual does not reveal any information on his/her potential outcomes:

$$Y^r \perp\!\!\!\perp D | X \quad \forall r$$

which is also known as “selection on observables“, “ignorable treatment assignment“ or “conditional independence assumption“.

Exact matching on all covariates is not feasible due to a dimensionality problem (‘curse of dimensionality’): For a large number of covariates – as required by the matching approach - it would be very difficult to find statistical twins with exactly the same characteristics for all

¹⁴ A comprehensive description of the method can be found in Caliendo/Kopeinig (2008) and Frölich (2004). The following description is based on Frölich (2004).

¹⁵ The decision on which effect to estimate depends on the research question. Heckman/LaLonde/Smith (1999) discuss further parameters.

covariates. To solve this, balancing scores are used as a basis for matching. Rosenbaum and Rubin (1983) show that, if potential outcomes are independent of treatment conditional on covariates X , they are also independent of treatment conditional on a balancing score $b(X)$. We apply the Propensity Score as a balancing score, which means that we match on the probability to participate in the treatment r and not s , given X estimated by a probit model for a sample of participants in treatments r and s .

A further requirement is the existence of a common support (weak version according to Lechner 2000) $P(D = r | X) < 1$ which means that persons with the same values of X must have a probability smaller than 1 of participating in r as well as in s .

Furthermore, the distributions of the probabilities of participating in r for participants in r and for participants in s $P(D = r | X, D = r)$ and $P(D = r | X, D = s)$ have to overlap. The ATT is only identified, if for any given value of $P(D = r | X, D = r)$ there are individuals receiving treatment s with the same value of the propensity score $P(D = r | X, D = s)$ (Frölich 2004).

The consideration of the effect for single individuals requires that both the probability of participating and the effect on the labour market performance of an individual is not influenced by the participation decision of other individuals (stable unit treatment value assumption, SUTVA). The SUTVA ensures that treatment effects can be estimated regardless of the number and composition of participants and implies that a participation decision of a single individual is not affected by the participation decision of other individuals (no “peer effects” according to Sianesi 2004).

According to Frölich (2004), the SUTVA can be assumed to hold, if the programme is of small size, if market effects are unlikely or if the counterfactual world is similar to the one evaluated. There is certainly reason to question this assumption in our context, since a large number of individuals are treated. On the other hand, this is not too critical when comparing different types of employment programmes, because treatment and counterfactual world are similar.

The propensity score matching estimator for an ATT comparing a treatment r with controls of a waiting or from an alternative treatment s is defined as follows

$$\hat{\tau}_{ATT}^{r,s} = \frac{1}{N_{treated}} \sum_{i \in treated} \left[Y_i^r - \sum_{j \in \text{matched controls of type } s} w_{ij} \cdot Y_j^s \right],$$

where $N_{treated}$ is the number of treated persons.

w_{ij} is a weight defined as the inverse of the matched controls of type s for person i :

$$w_{ij} = \frac{1}{N_{i, \text{matched controls of type } s}}$$

With nearest neighbour matching the number of controls to be matched to some treated individual is a choice of a researcher. In case of radius matching instead, all comparison persons are chosen whose propensity score does not differ in absolute terms from the one of the treated individual i by more than a given distance, the caliper. Hence, the number of matched controls may differ for each individual of the treatment groups. For the analytical

variances and hence the standard errors of these estimators see Becker/Ichino (2002). When carrying out the analysis we followed the outline from Caliendo/Kopeinig (2008). In our analysis we will mainly use radius matching. The calipers in the different applications are not chosen arbitrarily. We chose them in each application as the 90th percentile of the (absolute) differences between propensity scores of treated and matched controls that results from nearest neighbour matching with five neighbours and with replacement. We also apply various nearest neighbour matching estimators to check for the robustness of our results.

6. Data and implementation

6.1 The administrative data and their advantages for propensity score matching estimation

We use data drawn from a rich administrative data set of the German Federal Employment Agency that is made available for research by the Institute for Employment Research. They contain individual information collected in local job centres and employment agencies¹⁶ about (registered) job-seekers and benefit recipients including their spells of unemployment, ALMP participation by type of programme and different types of unemployment benefit receipt including the welfare benefit (UB II). These daily spell data are provided together with spells on (minor and contributory) employment in the Integrated Employment Biographies (IEB). The employment data are provided by employers to the authorities responsible for the statutory pension insurance. They include gross earnings and characteristics of the firm (e.g., sector) at which the employees work.

Apart from the IEB we use additional data sources providing more detailed information on welfare benefit receipt. First, we use the UB II histories and related data which allow us to determine which individuals belong to each welfare recipient's household. The levels of welfare benefit payments by type (e.g., cash benefit, benefit to cover costs of accommodation and heating) are available for each household on a monthly basis. Similarly, there is information on monthly earnings and unearned income (other benefits, maintenance payments, rents, capital income, etc.) of the UB II recipients as long as their benefit receipt continues. Finally, we used another data set (Verbleibsnachweise) from the Department of Statistics of the Federal Employment Agency that provides more recent information than the IEB on the employment status (minor and contributory employment) of the individuals in our sample.

Taken together these micro data allow us to control for a large variety of pre-treatment characteristics in the selection equations. This includes socio-demographic information, information on the past performance in the labour market (including past participations in ALMPs) and information on the partner and children (including partner's labour market history). Information on the equivalent income of the welfare recipient households was also included, namely the log of the welfare benefit, of current earnings and of other income of the

¹⁶ Job centres are responsible for UB II recipients, whereas employment agencies deal with UI recipients and unemployed people who do not receive any unemployment benefit, provided that they register as unemployed job-seekers at the employment agency.

household.¹⁷ Furthermore, we included regional information on the labour market, such as the unemployment rate, share of long-term unemployment and the vacancy-unemployment ratio and inflow rate into 1EJs in April 2005.¹⁸ Additionally, we included binary indicators reflecting a classification of districts according to their labour market performance by Rüb and Werner (2007). To give an overview which variables were included in the selection equation we display the probit estimation results for the selection into 1EJs compared with waiting. Probit estimates for the other selection equations are available on request.

This particular rich set of covariates should make it likely that the conditional independence assumption holds in our analysis. First of all, the socio-demographic characteristics ensure that treated and matched waiting group members or matched members of an alternative treatment are quite similar with respect to such personal characteristics. The large set of variables on past performance in the labour market should sufficiently reflect relevant unobservable talents and motivation that determine the outcomes. Hence, differences between the treatments and matched comparison persons concerning such aspects should hardly occur and bias our results. Future participation decisions of the individuals might be driven by their partner's success in the labour market. Without information on this issue propensity score matching estimates might be inconsistent in our context. Hence, it is of a considerable advantage that we can identify partners and control for their past success in the labour market, in order to avoid such an inconsistency. Finally, the small scale information of the regional labour market is also helpful, to avoid differences between the matched treated and control individuals that are a result of distinct perspectives of different regional labour markets.¹⁹

6.2 The sample and selected descriptive statistics

6.2.1 The sample

As treatment samples we study the full inflow into the three programmes during the period May to July 2005 of welfare benefit recipients who were registered as unemployed at the end of April 2005. We estimate the impact of participating in one of the three schemes compared with waiting. Therefore, participants are compared with a control group. Control individuals are drawn from the stock of unemployed welfare benefit recipients at the end of April 2005, who did not participate in one of the three programmes between May and July 2005. They may have entered other ALMPs in this time period. We use a 35 % random sample of this latter group which provides us already with a large number of potential control individuals per treated individual. All individuals are aged between 15 and 61 years. Moreover, they did not participate in any ALMP or were in contributory employment at the end of April 2005.

¹⁷ As an equivalence scale for these income types, we chose the new OECD equivalence scale (weighting the first household member aged at least 15 years with one, further household members aged at least 15 years with 0.5 and children younger than 15 year with 0.3).

¹⁸ These data were drawn from regional data bases of the Department of Statistics of the Federal Employment Agency.

¹⁹ Heckman et al. (1997, p. 612) emphasised the importance that treatment and control group reside in the same local labour market. Therefore, we do not only include the above mentioned regional indicator, but also delete from potential control groups observations that belong to small scale job centres, in which the type of treatment that is studied does not take place in our observations window from May to July 2005.

Individuals with missing values of covariates or outcomes values under review were deleted from the data.

Moreover, for the JCS and for WO-CJ we also study whether their participation is more effective than the 1EJ participation and hence the major alternative in terms of programme inflow. Therefore, for these two programmes, we also rely on a second control group of 1EJ participants and hence perform a direct comparison between programmes.

For the waiting group we computed for each comparison a hypothetical programme start month that was randomly drawn from the distribution of programme start months of the treatment group. We did this in order to compute outcomes from the month of programme start onwards. People who between the end of April 2005 and their hypothetical programme start month already successfully found contributory jobs, exited unemployment or welfare benefit receipt (also temporarily) were not included in the analyses.

For a given comparison control group individuals were also dismissed if they belonged to a local job centre with no observation of the specific type of treatment. This pre-selection is nearly irrelevant for the large scale 1EJ programme, but there are a number of controls in job centres where between May and July 2005 there were no treatments by one of the other two programmes.

Table 4 displays for men and women in East and West Germany the number of treated and the relevant number of potential control persons for each of the comparisons that we consider. The size of the treatment groups ranges from less than 200 treated (WO-CJ, West German women) up to more than 29,000 treated (1EJs, East German men). The relevant number of potential controls is in most cases relatively large, so that the propensity score matching procedure should find a considerable number of comparable controls for each treated person. However, for the comparison 1EJ versus waiting in East Germany there are somewhat less than 4 potential controls per treated. Similarly, per JCS participant there are only 4.6 1EJ potential comparison persons for East German men and six for East German women. In the other cases there are far more potential controls per treated. We will later see that nevertheless in all cases we achieve a high match quality, i.e., there is nearly no difference between the treatment and the matched control group with respect to their (average) observable pre-programme characteristics.

6.2.2 Selected characteristics of the sample members

To shed some light on differences between treated and the waiting groups, we present some selected descriptive statistics on their observable characteristics in Table 5. We only regard the most general waiting group in this table, without deleting observations of individuals in job centres with a zero inflow into the JCS or into WO-CJ during May to July 2005. Not surprisingly, we find that the participants in all three programmes in contrast to people from the waiting group tend to be more frequently under the age of 25 years. In many cases the share of young people among the participants is more than twice as high as their share in the waiting group. This reflects that the SC II defines the welfare recipients below 25 years as a special target group in particular for both types of work opportunities.

The age distribution of the JCS inflow differs by region: in West Germany more than 40 % are younger than 25 years, whereas in East Germany it is only 10 (women) to 14 % (men). In East Germany, JCS target strongly older unemployed welfare recipients: 30 % of JCS

participants are older than 50 years, whereas in West Germany it is only 11 % (women) to 15 % (men). The higher share of persons aged 51 and more in East Germany compared to West Germany can also be found for 1EJs and WO-CJs. The share of individuals aged older than 50 in the waiting group is around 19 % in East as well as in West Germany.

How large is the share of further target groups defined by the Federal Employment Agency in the programmes? Neither persons with health restrictions nor foreigners nor persons without secondary schooling degree are particularly targeted by any of the programmes. The share of foreigners is smaller in any of the programmes than in the control group. This is also true for women without secondary schooling certificate. Compared with their share in the waiting group very low educated females without a schooling degree and without vocational training are much less represented in any of the programmes. This also holds to some extent for East but not West German males.

1EJs do not focus on hard to place individuals among the needy unemployed but the results indicate that they are used subordinately to other programmes. This becomes apparent when we look at the employment record during the past five years prior to 30 April 2005: A considerable proportion of people in our samples was never employed in an unsubsidized contributory job during the last five years. In the waiting group these are around 30 % of males, more than 40 % of East German females and more than half of West German females. In contrast, in all the participant groups these shares are often more than 10 percentage points lower. Looking at the different programmes, we find JCS and WO-CJ participants to have slightly longer cumulated employment periods than 1EJs participants.

Nearly 58 % of controls do not have a partner. This share is higher for most of the groups of programme participants (except East German participants in the JCS). This is particularly true for women: West German women without a partner are overrepresented in all programmes and the differences in shares are larger than for the other three groups. Furthermore, their share of childless women is about 14 to nearly 30 percentage points higher in the treatment groups than in the waiting group.

There is no large difference between the waiting group and the programme participant groups with respect to the average (equivalent) benefit levels in April 2005. They range from about 600 to 730 € per months. Due to the lower cash benefit for East Germans, they are somewhat lower for East German samples compared with the West German ones. They also tend to be somewhat lower for women than for males. This may be because unemployed women in our sample more frequently have a partner than unemployed men and hence more people in the household might achieve some earnings that reduce the welfare benefit levels.

6.2.3 Selective characteristics of the schemes

As the potential duration of the participants' programme participation and wages earned play a role for assessing the results of our analyses, we briefly discuss these programme characteristics in our sample. The three schemes slightly differ with respect to their planned length of participation (Table 6). The median planned length of 1EJ participations equals half a year for all groups of participants. Also their average planned length is similar with about 6.5 months. Though, the first decile is somewhat lower for West compared with East German participants. This holds for all three programmes and may point towards more frequent use

of the programmes as a work-test in the West. Participations in the JCS are characterised by an average planned duration that is about 0.7 to 1.7 months longer than for 1EJs, but their median planned duration is only higher for West German women with roughly nine months, whereas WO-CJ have a longer planned duration in East Germany with also nine months. With 12 months the value of 9th decile of planned length of participation demonstrates that a considerable part of JCS participations are characterised by relatively long potential participation periods in contrast to 1EJs with values of the 9th decile of 9.1 to 10.5 months. The planned duration of WO-CJ differs slightly from those of 1EJs for West German participations both on average and in its distribution. However, average planned length of participation in East Germany of WO-CJs is more than one month higher than for 1EJs and the difference between the medians is even three months. To sum up, the planned participation length of JCS and WO-CJ tend to be somewhat higher than for 1EJs, such that we could expect lock-in effects to last for longer. However, the differences are often not very large. Therefore, the differences of potential duration of participation may not matter that much in our context.

Table 7 displays descriptive statistics on monthly wages in JCS and WO-CJ. Left panel shows them for all participants, while the right panel excludes the under 25 year olds. The average monthly gross wages of all participant exceed their monthly welfare benefits in April 2005 (600 to 700 €, see Table 5), though only by about 120 up to 260 €. Moreover, when we regard the first decile there is clearly evidence that often the monthly wages in West Germany fall far below a monthly welfare benefit for a single person. With not much more than 300 € the first decile value is particularly low for JCS. This reflects that for some participants the special regulations described in section two imply low wages in part-time work and for participants younger than 25 years wages below apprenticeship pay. As the first decile of gross wages is also quite low for WO-CJ participants in West Germany, it is likely that to some extent the policy was implemented for young participants according to rules of JCS. If we regard the right-hand panel with participants aged at least 25 years, we can see a clear difference. Now the first decile of gross wages for West German participants is already close to welfare benefit levels and mean and median are considerably higher.

7. Results

7.1 Selectivity of the three programmes

In this section we look at selectivity of the three job creation programmes. Knowledge on selectivity is helpful for several reasons: First, it can reveal useful information about programme operation, such as the role of incentives (Heckman/Smith 2004). Second, selectivity analyses show us whether caseworkers place different types of unemployed in the different programmes which is likely to influence the effectiveness of programmes. Effectiveness of programmes can differ because of differences in programme design or by differences in the group of participants. Because we are able to distinguish between these effects in the pairwise comparison, we are interested in whether distinct patterns of participants exist among the three employment programmes.

Therefore, we should look at multivariate results of the probit analyses which we conducted in order to estimate the Propensity Score to base matching approach on. The following

discussion of results is based on the binary probit estimation of participating in a JCS/1EJ/WO-CJ compared to non-participation (results only displayed for 1EJ vs. waiting in Table 8).

We find the above in the descriptive analyses discussed correlations between participation probability and personal characteristics (such as age, family background, education, nationality displayed in Panel 1 of Table 8) to be confirmed. Furthermore, we learn that minor employment of the individual (Panel 1 of Table 8) and earnings of the household (Panel 3 of Table 8) tend to have a negative effect on the probability to participate in a 1EJ or the JCS but not for WO-CJ. The amount of UB II receipt has a positive effect on participation probabilities in East Germany for the JCS and for 1EJs. JCS participations in the past come along with a higher participation probability (except for women and WO-CJ).

Regional factors do have significant effects (Panel 5 of Table 8). The regional inflow rate into 1EJ in April 2005 has a positive effect on the participation probability for 1EJs and tends to have a negative one for the other two programmes (except for men in East Germany and WO-CJ). This indicates that programmes are used as substitutes on a regional level.

Further insight into programme selectivity can be gained by looking at the labour market outcomes of potential and matched controls from the waiting group. The first four rows of Table 9 display the share of those regularly employed three years after programme start for the two groups of controls. If the share of those regularly employed 36 months after programme start among the matched controls is higher than for all controls, participants are a positive selection of the unemployment stock with relatively good employment prospects without treatment.

In West Germany all participants are a positive selection out of the stock of the unemployed welfare recipients. The employment rates of matched controls are higher than for the group of all controls (men about 22 % and women about 15 %), particularly for controls which were matched to WO-CJ participants with an employment rate of 32 % for men and 23 % for women). In East Germany, employment rates are lower than in West Germany with about 18 % for men and around 13 % for women in the group of all controls. We find higher employment rates only for East German controls of participants who were matched to WO-JC participants but not for those who were matched to 1EJ or JCS participants. This means that only WO-CJ participants are a positive selection of the stock of the unemployed but not 1EJ or JCS participants. This relationship is different for West German men: controls matched to 1EJ participants on average have worse employment prospects than controls matched to JCS participants. Thus, male JCS participants tend to be better risks than 1EJ participants in West Germany. This might indicate that the JCS is used differently in East Germany than in West Germany as a relief for the local labour market.

7.2 Match quality and overlap

In Section 6.2.2 we saw that the treatment groups and the group of potential controls differ considerably with respect to several aspects. Did our matching approach do a good job in balancing the differences between the groups? To assess the matching quality we looked at several statistics. The first is the mean standardised (absolute) bias (MSB). The MSB is the

average of the distance in the marginal distribution of the covariates over all covariates that determined the probability of participating in a programme in the join versus wait case or the probability to participate in one programme and not the comparison programme.²⁰

If the matching procedure is successful in finding comparisons that are similar to the treated individuals the MSB should become quite small. Even though there are no critical values according to Caliendo and Kopeinig (2008) in most studies a reduction of the bias to values below three to five percent is regarded as sufficient. Table 10 displays the MSB before and after matching for the different comparisons between the three programmes and waiting and between the comparison of the JCS and the WO-CJ and the 1EJ-programme. Prior to matching for all our groups the MSB is higher than six and often even ten percent. After matching though in all cases the bias is considerably reduced ranging from a minimum of 0.2 % (1EJs versus waiting, East German women and West German men) up to a maximum of 2.1 % (WO-CJ versus waiting, West German women). Hence, the matching procedure reduced the MSB sufficiently.

Similarly, we checked the matching quality by comparing the (Mc Fadden's) pseudo-R² of the selection equation for a sample prior to matching and after matching. After matching, the pseudo-R² should be considerably reduced and should be very close to zero as the covariates no longer influence the selection into treatment (versus wait or versus the alternative treatment). The results of this exercise also point to a high match quality.

Furthermore, we also calculated t-tests on the means of single covariates for the treatment groups and the matched controls: The means of the covariates between treatment and control group do not differ significantly after matching in the vast majority of the cases.

For Propensity Score Matching, we have to assume that a common support exists. The existence of a common support means that the participation probabilities are lower than one and that the distributions of the propensity score for the treatment and the control groups overlap. Therefore, we compared the distributions of the Propensity Score for the different treatment and control groups.

The distributions of the propensity score of treatment and control groups are very similar for the 'waiting' groups and the groups of participants in various programmes. For the pairwise comparisons, differences in the shape of the distribution of the propensity score can be observed in some cases, but nevertheless there is sufficient mass among non-participants for regions of the propensity score with mass among participants. Furthermore, the selected matching approach will ensure that no bad matches are used for the very few observations for which no sufficient mass can be found among non-participants.

Given the large number of results, the pseudo-R² statistics, the t-tests on the means of single covariates and the distributions of the propensity scores are not displayed here, but they are available on request.

²⁰ For a single covariate the standardised absolute bias formula is $100 \left| \frac{\bar{X}_{treated} - \bar{X}_{controls}}{\sqrt{0.5 \cdot [V(X_{treated}) + V(X_{controls})]}} \right|$, where $X_{treated}$ represent the covariate for the treated population and $X_{controls}$ for the control population, which consists either non-participants or participants in an alternative programme in our context.

7.3 Effects of participation on employment outcomes including annual earnings

We start our discussion of the estimated treatment effects by regarding net impacts on different employment outcomes. First, this will be the share of people in unsubsidized contributory (regular) employment at different points in time after the month of programme start. Second, it will be the number of months in regular employment in the first, second and third year after programme start (with the first year starting with the programme start month). Finally, we discuss impacts on real annual gross earnings from any type of employment (hence including minor employment and subsidized employment) achieved in the years 2006 and 2007.²¹

Figures 1 and 2 show the estimated net impact on the regular employment rate for each of the first 36 months after the month when participation started for the comparison participation against non-participation (waiting). The net impact is the average over all participants of the difference between the employment status (1 if regularly employed, 0 otherwise) of a participant and (the average over) his/her matched control group.

In Figure 1 we display these results for the participants in JCS and 1EJs. For both participant groups of men and women in East and West Germany a clear negative impact on their regular employment rate emerges during the first months after participation started. These lock-in effects are strongest after five months for East German participants and after four months for the West Germans. For the JCS, the effect is of an order of magnitude of close to four percentage points for East German participants, six percentage points for West German male participants and less than four percentage points for West German female participants. This is the typical lock-in effect given that the median planned length of participation in the JCS is nine months for West German female participants and six months for other participants; though surprisingly it is lowest for West German women with longest planned duration. For females, this effect is of the same order of magnitude as for 1EJ participants. This is different for males for whom particularly in West Germany lock-in effects are less severe for 1EJ participants than for JCS participants. This result is not surprising: The West German males participating JCS have considerably higher employment prospects without participation than the West German male 1EJ participants, as the estimated employment rates of the corresponding control persons in Table 9 demonstrate. For females and East German males there is no such difference.

More than four to five months after programme start the net impacts of the JCS (versus waiting) increase. For women, positive and significant net impacts on the employment rate emerge a bit more than one year after their participation started. These net impacts still tend to rise for female participants up to a value of more than three percentage points for East German women and more than 11 percentage points for West German women (see also Table 11). The increase of the net impacts on the employment rate ends for East German males only with a significant though low effect of one percentage point and for West German males with a close to zero and insignificant net impact. Turning to 1EJs, we find effects for West German men to be relatively similar to JCS impacts. For East German men, effects slightly differ between the two participant groups as in the case of 1EJs the increase of the

²¹ Earnings information on the year 2008 is not yet available in the data, though we already have employment status information.

net impact after the initial lock-in effect is not strong enough to reach the zero line. For women instead we do find a positive impact both for East German and West German 1EJ participants. However, these impacts are smaller and for West German women far smaller than the net impacts for JCS participants.

The estimated average net impacts of the WO-CJ participation (versus waiting) on the participants' regular employment rate are presented in Figure 2. We display them again together with the net effects for the 1EJ participants in order to highlight differences between the two participant groups. For WO-CJ there are lock-in effects as for the other two schemes and their magnitude is very similar to that of the JCS participants. In contrast, net impacts start to rise earlier and more strongly. There are already positive net effects on the employment rate one year after WO-CJ participation started which are with the exception of East German men well-determined. For East Germans and West German men they are most of the time higher than the net impacts on the employment rate of 1EJ and also JCS participants.

As the impacts discussed are only relevant for the specific participant groups, we cannot yet know whether for the JCS or WO-CJ participants a 1EJ-treatment instead would have been rather worse or better in terms of improving employment perspectives. By estimating the impacts of these two programmes in the multiple treatment framework versus 1EJs this question can be settled. Figure 3 shows the results of this exercise. In all cases the results imply more severe lock-in effects of the JCS and WO-CJ compared with the 1EJ alternative. Yet, this negative impact during the first few months after entering the programmes is frequently not well-determined. Moreover, for participants in WO-CJ their treatment clearly leads to employment outcomes superior to 1EJ participation from about eight months after starting the treatment onwards. Only for West German women, we cannot make such a statement as the net impacts are frequently insignificant. Also for JCS participants we often find that this type of treatment has a more beneficial impact on their employment rate than 1EJs. This holds from somewhat more than one year after treatment started onwards for all groups except for West German males. Taken together this implies that for participants of JCS and WO-CJ there is often clear evidence that 1EJ participation would have been a worse alternative.

The average treatment effects on the treated with respect to our second employment outcome, months in regular employment in each of three years after programme start, are displayed in Table 12. They demonstrate in a more compact way the impact of the different comparisons. The first four rows of the table show the impact of the different treatments versus waiting. For nearly all schemes and all groups there is net loss of months in regular employment during the first year after programme start (including the month of entering the programme – which would be month zero). The loss tends to be higher for men than for women and particularly high for men in the JCS as East German men pass 0.4 months and West German men 0.5 less in regular employment than without participating. During the second year after programme start, there are still negative and mainly significant impacts for men in the JCS and 1EJ programme and East German women treated by 1EJs. In all other cases the effects are already positive and with one exception significant. In the second year after programme start the WO-CJ scheme already achieves considerable impacts with of an order or magnitude of up to one month additional regular employment due to participation.

The net impacts still tend to increase in the third year after the programme participations started. The comparison between JCS or WO-CJ in the last four rows of Table 12 of again confirms that in nearly all cases 1EJ treatment would be the worse alternative.

Let us finally turn to earnings effects. Table 13 shows the estimated impacts on real annual gross earnings in the years 2005, 2006 and 2007.²² We include earnings not only from regular employment but also from minor and subsidized employment. The reason is that we also want to highlight that impacts on earnings remarkably differ between the programmes with different implications for welfare receipt. Moreover, the impacts in 2007 are mostly due to impacts on unsubsidized employment. The reason is that almost all subsidized employment participations were completed before that year. On top of that we know from further estimation results (not presented here), that net impacts on the employment rate including subsidized employment schemes do not differ much from the estimated net effect on the regular employment rate for the three programmes in 2007.

The estimation results versus waiting in Table 13 (first four rows) show that in 2005 and 2006 the JCS and WO-CJ scheme that both imply contributory employment for participants also imply a net impact on annual earnings with orders of magnitude between about 3,700 € and nearly 4,700 € in 2005 and 800 € up to 2,500 € in 2006. It is not surprising that the latter numbers are lower, as for many participants their subsidized employment ended either before or shortly after the start of the year 2006. Regarding 2005 and 2006 for 1EJ participants in sharp contrast the estimated net earnings effects are often negative or just slightly positive and low in absolute terms ranging from a reduction of 414 € to a positive impact of about 180 €.

In the year 2007 when earnings do not stem any longer from the initial subsidized contributory job, there are still for most of the analysed groups considerable net impacts of treatment for participants of the JCS and WO-CJ. For the JCS the impact on gross earnings is lowest at 160 € for East German male participants and highest for West German female participants with roughly 1,670 €. Also the net effects of the WO-CJ scheme are lowest for East German men at 550 €. The estimates for West German males imply the largest impact with still a considerable 1,900 € or more than two months of full welfare benefit for a single adult. For 1EJ participants the earnings impacts are higher in 2007 than in the two previous years. There are positive impacts of around 140 € for East German women and West German men, an impact of 357 € for West German women. As in nearly all cases the impacts are considerably lower for East German men with an earnings reduction of 176 €. Hence, participants in 1EJs profit much less from their participation in terms of improved earnings perspectives than participants in the two programmes that subsidize contributory jobs.

Let us still directly compare JCS and WO-CJ participants to matched controls from the 1EJ group. The last four rows in Table 13 show the estimated net earnings impacts of this exercise. They also confirm that for participants in JCS and WO-CJ in all years including the final year, their treatment implies a more beneficial effect than treatment by the alternative 1EJ scheme. Only in the year 2007 there is one exception. The net earnings effect of West German female WO-CJ participants is close to zero and insignificant. Yet, this result refers to

²² Nominal earnings were deflated by the consumer price index, which was normalised to one in April 2005.

a very small group of only 170 participants so that we cannot be quite confident about the result.

Whether these earnings effects are sufficient to reduce or end welfare dependency, we will see in the next section.

7.4 Effects of participation on welfare benefit

We finally want to show to what extent the different treatments contribute to reducing benefit dependency or even becoming independent of welfare benefit. We regard, therefore, first of all the monthly rate of welfare receipt as an outcome variable and the average real monthly equivalent welfare benefit in each of the first three years after entering the employment scheme. We deflated the welfare benefits in the same way as earnings.

In Table 14 we display net impacts on the probability of not receiving UB II at six and 36 months after entering the programmes. Table 15 shows the net impacts on the monthly welfare benefit level. Again, the first four rows show results for the comparison to waiting. After six months the estimated net impact for job creation participants implies a 25 up to more than 31 percentage points increased probability of not being dependent on the UB II benefit. This range is similar for the WO-CJ treatment reflecting that participants receive a regular wage during participation in both schemes. Concerning the level of (equivalent) welfare receipt, results imply a reduction of usually more than 200 € for the participants in the JCS and WO-CJ in the first year after their participation started (Table 15).

For 1EJ participants though their treatment implies a four to six percentage points reduced probability of being independent from UB II six months after programme start and a higher benefit level with impacts of around 30 € per month in the first year. This reflects the initial lock-in effect and that participants do not achieve earnings while in the programme.

36 months after programme start and hence usually more than two years after programme participations ended, the implications are different. The net impacts of the JCS and the WO-CJ on the probability not to receive UB II are mostly not well determined. There are only two impacts that differ significantly from zero: For East German male participants the JCS implies a reduction of the probability of not depending on UB II of about one percentage point. For West German male participants of the WO-CJ scheme there is instead a 7.6 percentage point rise of the perspective not to depend on UB II. Nevertheless, for JCS and WO-CJ participants average benefit levels are still in many cases reduced in the second and third year after programme start.

Finally, for 1EJ participants there is still a persistent negative impact on the probability not to receive UB II of two to somewhat more than three percentage points. And the last for rows demonstrate that 1EJs would be the worse alternative for participants of the JCS and the WO-CJ as contributory employment. Furthermore, for 1EJ participants, treatment leads to higher benefit receipt with impacts of around 10 to 20 € per month in the subsequent two years after starting their treatment.

7.5 Robustness of results

We carried out several analyses checking the robustness of results. E.g., we estimated the impacts on months employed, earnings and welfare benefit levels also by difference-in-

difference matching. In case of months employed we took the difference of the respective outcome to the number of months in regular employment in the second year before participating. For the earnings outcome we computed the difference of the outcome variable and earnings in the year 2003. Finally, for the average monthly equivalent UB II levels we computed the difference between this outcome and the corresponding average from the period January to April 2005 given that the benefit was only introduced in 2005. If our matching approach did not balance important unobservable impacts on outcomes, there should be major differences between the results presented in this paper and results from difference-in-difference matching. However, the results of the difference-in-difference matching estimation do not differ considerably from the results presented and do not change the implication. Therefore, we do not present them in this draft. They are of course available on request.

Apart from radius caliper matching with two different calipers, we carried out the analysis with different matching estimators like nearest-neighbour matching with five neighbours and replacement and with different calipers. We compared the results which appear to be mostly stable over different matching estimators. Matching quality is sufficient for all estimators but best for radius caliper matching using the best 90 % of matches. This is why we display results based on this estimator in this paper. However, as results are very stable across different matching estimators we base our further robustness checks on nearest neighbour matching with five neighbours because computing is much shorter for this estimator.

We also checked robustness by comparing the effects to results from propensity score matching combined with exact matching with respect to the composition of the household, which matters for welfare dependency, and different indicators of past performance in the labour market. Effects are stable also for this analysis.

Furthermore, we carried our analyses only for those individuals aged 25 years and older to see to what extent results are driven by the large share of participants who are aged younger than 25 years. Regarding absolute outcomes, we find regular employment rates and the rate of no UB II receipt three years after programme start to be lower for the older age group than for the whole sample. This reflects the better labour market prospects of young unemployed. However, concerning treatment effects the pattern of results is the same as for the entire sample.

8. Conclusion

Direct job creation schemes are a widely used means of activating welfare benefit recipients in Germany with more than 700,000 new participants per year. These programmes provide subsidised jobs for persons with severe difficulties of finding a job which are mainly additional jobs of public interest. The schemes are multi-purpose: Their goals include enhancing the employability of participants and their well-being. Often, they aim at integrating participants into regular jobs, providing relief work when unemployment is particularly high and providing public goods. Moreover, they may serve to test the willingness to work of unemployed people.

Between 2005 and 2008 three such programmes existed for welfare recipients in Germany: the traditional JCS, 1EJs and WO-CJ. This paper studies for welfare recipients aged 15 to 61

years entering one of the programmes in early summer 2005 net impacts of participation on their employment performance, annual earnings, and welfare benefit dependency using a statistical matching approach. We compared participants in all three schemes to a waiting group. We chose a multiple treatment framework and also compared JCS participants and participants in WO-CJ with 1EJ participants. The analyses were carried out separately for men and women in East and in West Germany.

According to the preliminary results of our analysis there are several major lessons to be learnt: The first lesson is that all programmes – after a period with moderate lock-in effects - contribute to a better employment performance of the participants who are welfare recipients. Thus, there is evidence that under the new mutual obligation regimes programmes bring welfare recipients into regular jobs. In particular this also holds for the JCS for which recent studies of Caliendo, Hujer and Thomsen (see section 4.1.1) on its impacts were much more pessimistic: Among the broad participant groups, they only found positive impacts on the regular employment rate for female participants in West Germany. Moreover, these effects emerged only in the second half of the third year after programme start and thus much later than for our participant group. The main reason for the difference between their and our results is apparently the participant groups that are studied. They studied people who entered the scheme from UI or UA benefit receipt. These participants are people with much higher re-employment prospects than the welfare recipients in our study. For the latter group there is larger scope for improving their employability and employment perspectives and our results suggest that all three programmes achieve this. A second reason is that in our period under review, the planned lengths of participation in the programmes including the JCS tend to be shorter than at the beginning of the millennium, the period studied by Caliendo, Hujer and Thomsen.

Our second lesson is concerned with disincentives of receiving a regular wage in contrast to only the UB II plus one to two Euros per hour worked as in the 1EJ programme. A disincentive not to search for regular jobs due to receiving a full wage does not seem to matter much. Lock-in-effects of the JCS and the WO-CJ are not much stronger than those found for 1EJs. Hence, they point towards small disincentive effects. But this is no surprise given our situation. The median and average gross wages earned in the JCS and the WO-CJ are only somewhat higher than the monthly welfare benefit of about 600 to 700 € per month. Hence, disincentives to search for regular jobs may matter in general for such schemes, but little in our context due to the low earnings potential of the participants.

The third lesson to be learnt is the possibility that treatment takes place in commercial jobs does matter for the employment effects. This is only the case for WO-CJ and our results point to the strongest employment effects on regular employment for this type of treatment.

Our fourth lesson is that both schemes that imply subsidized contributory employment for participants are in most cases considerably better for the employment and the earnings performance of the participants than the alternative 1EJ-participation. But we should keep in mind that there are only a quite limited number of participants in these programmes. Hence, we cannot generalise that their effects on participants will remain relatively high, if the number of participants increases substantially. The low participant numbers may imply that job centres put more effort into finding a good match between participant and provider of the scheme in case of JCS or WO-CJ as opposed to 1EJs. Second, employers may put more

effort into improving the employability of participants. The reason is that they profit from higher subsidies than in case of taking on 1EJ participants. Hence, they might want to signal job centres that these programmes in contributory employment work better for participants than 1EJs. However, 1EJs may also be the worst of the three alternatives with respect to improving the confidence and motivation to search for work of participants and may lead much more to stigma effects.

Our fifth lesson is that there are some situations in which these types of programmes are not successful. The JCS and the 1EJ participation are ineffective for East German male participants. This also holds for West German male participants in the JCS. Hence, there is certainly some scope for reallocating participants such that the overall effectiveness of the schemes can be improved.

Our last lesson is that even in the long term we cannot expect remarkable effects of the programmes on reducing the welfare dependency of the former participants. This holds even for the JCS and the WO-CJ. The positive impacts on annual earnings are just not sufficiently high to reduce their welfare benefit considerably.

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List of abbreviations

1EJs	One-Euro-Jobs
ALMP	active labour market policy
ATT	average treatment effect on the treated
IEB	Integrated Employment Biographies
JCS	job creation scheme
MSB	mean standardised (absolute) bias
PES	public employment services
SC	social code
SUTVA	stable unit treatment value assumption
UA	unemployment assistance
UB II	unemployment benefit II
UI	unemployment insurance
WO-CJ	work opportunities as contributory jobs

Appendix

Table 1: Inflow into different schemes of direct job creation and the stock of unemployed receiving UB II from 2005 to 2008 (in 1,000)

	Inflow into the job creation scheme				Inflow into One-Euro-Jobs				Inflow into work opportunities as contributory job				Average stock of unemployed UB II recipients			
	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008	2005	2006	2007	2008
Total	61.6	62.4	50.1	60.4	603.9	704.5	667.1	643.7	25.9	37.4	36.5	52.0	2,402.0	2,444.0	2,188.3	1,963.7
East Germany	51.1	52.3	41.2	53.0	287.9	298.0	265.9	263.7	16.3	19.5	16.7	22.1	834.0	847.2	781.4	695.7
% female	39.3	40.0	40.4	40.8	44.9	44.6	44.5	45.1	41.6	41.9	42.1	41.1	45.2	44.9	46.0	46.5
West Germany	10.4	10.1	8.9	7.4	316.0	406.5	401.2	380.0	9.6	17.9	19.8	29.9	1,568.0	1,596.8	1,407.0	1,268.0
% female	31.2	32.6	32.3	33.3	34.2	35.0	36.9	38.5	25.6	32.4	32.2	35.1	43.7	45.4	47.5	48.5

Source: Department of Statistics of the Federal Employment Agency, calculations from the Data Warehouse

Table 2: Expenditures for the three direct job creation schemes (only for UB II recipients)

	2005	2006	2007	2008
	<i>Total expenditure (in 1,000 €)</i>			
Job creation scheme	354,743	471,691	408,416	444,421
One-Euro-Jobs	895,439	1,126,542	1,019,882	1,034,487
Work opportunities as contributory jobs	209,033	259,464	299,525	371,702
	<i>Expenditure per participant and month (in €)</i>			
Job creation scheme	1,370	1,111	1,106	1,123
One-Euro-Jobs	386	337	325	347
Work opportunities as contributory jobs	2,201	1,284	1,291	1,474

Source: Total costs: Controlling data of the Federal Employment Agency, expenditure per month and participant: own calculations from controlling data and Data Warehouse

Table 3: Characteristics of different direct job creations schemes for UB II recipients

	Job Creation Scheme (Articles 260-271 SC III)	Work Opportunities with an allowance for additional expenses/One-Euro-Jobs (Article 16d SC II)	Work opportunities as contributory jobs (Article 16d SC II)
Aims	Relief for the local and professional labour market; increase employability; temporary employment.	Increase employability, social integration, work test, public goods provision, reciprocity for welfare receipt.	Like 1EJs but with a stronger focus on labour market integration and further training.
Target group	UI benefit and until the end of 2008 UB II recipients; mainly for people with severe difficulties of finding regular jobs.	UB II recipients; mainly for people with severe difficulties of finding regular jobs.	UB II recipients; mainly for people with severe difficulties of finding regular jobs.
Financial support for employer/organiser of participation	Lump sum wage subsidy ranging for full-time jobs from 900 to 1,300 Euros per month depending on the qualification of the participant.	The SC II does not specify the level of the subsidy. A lump sum monthly subsidy is paid that should cover programme costs.	The SC II does not specify the level of the subsidy. The subsidy should compensate employers for the difference between the wage and productivity of the participant and cover costs of organizing the participation.
Type of employment	Contributory jobs paying a regular wage to the participant, no contributions to UI. Jobs have to be additional and of public utility (non-profit-sector).	No contributory jobs, participants receive their welfare benefit and one to two Euros per hour worked to cover additional costs of working. Jobs have to be additional and of public utility (non-profit-sector).	Contributory jobs paying a regular wage to the participant (until the end of 2008 including contributions to UI). Mainly but not necessarily jobs that are additional and of public utility.
Duration of participation	Maximum of 12 months.	No maximum set under SC II, usually participations last no longer than six to seven months.	No maximum set under SC II, but in practise constrained to a duration of less than one year.
Other	In specific cases duration of participation and level of the subsidy can be more generous. For young participants participation can be designed such that subsidies and wages are low to leave an incentive for starting an apprenticeship.		

Table 4: Number of participants and controls in our sample

	JCS			1EJ			WO-CJ		
	Treated	Controls	Controls per Treated	Treated	Controls	Controls per Treated	Treated	Controls	Controls per Treated
	<i>Versus Waiting</i>								
East Germany									
Men	6,210	106,732	17.2	29,602	110,351	3.7	995	50,283	50.5
Women	3,801	87,299	23.0	23,385	90,506	3.9	540	39,751	73.6
West Germany									
Men	773	116,023	150.1	28,115	199,254	7.1	339	38,213	112.7
Women	342	80,741	236.1	12,216	145,328	11.9	171	27,016	158.0
	<i>Versus 1EJ-participation</i>								
East Germany									
Men	6,210	28,767	4.6	.	.		995	13,295	13.4
Women	3,801	22,741	6.0	.	.		540	10,610	19.6
West Germany									
Men	773	13,697	17.7	.	.		339	5,389	15.9
Women	342	5,944	17.4	.	.		171	2,271	13.3

Table 5: Selected descriptive statistics of treatment and control group by gender and region (in %)¹⁾

	Control (Waiting)				JCS				1EJs				WO-CJ			
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
	East	East	West	West	East	East	West	West	East	East	West	West	East	East	West	West
age 15-20	2.5	2.8	2.6	3.3	2.6	2.6	15.6	17.3	4.9	4.1	5.8	7.5	5.1	8.4	9.2	11.8
age 21-24	6.5	5.8	5.7	6.2	11.0	7.1	25.3	22.2	15.0	10.6	14.1	14.9	25.0	23.8	32.6	30.0
age 25-30	14.9	12.2	14.0	14.0	8.8	6.0	9.8	6.2	10.9	8.3	13.8	11.7	11.3	13.3	15.2	12.8
age 31-35	11.8	12.1	13.2	13.5	6.9	8.8	6.5	6.7	8.0	9.8	11.7	10.7	8.6	8.3	7.0	6.9
age 36-40	14.4	15.6	15.7	16.0	10.7	12.3	11.5	12.1	11.6	14.5	14.2	14.1	9.8	10.9	11.9	11.8
age 41-45	17.0	17.1	15.9	15.2	14.6	16.1	10.9	10.3	15.9	17.5	15.6	16.0	12.6	10.0	8.5	10.8
age 46-50	14.3	14.9	13.6	12.7	15.9	16.6	8.9	10.6	14.6	15.5	12.6	13.0	9.1	10.4	8.2	7.4
age 51-55	13.3	14.1	12.4	12.1	21.3	22.0	8.6	9.8	14.4	15.1	9.6	9.7	14.0	12.5	5.2	5.4
age 56-61	5.2	5.5	6.9	7.0	8.2	8.4	2.9	4.9	4.6	4.4	2.6	2.4	4.8	2.4	2.2	3.0
Health restrictions	14.2	10.0	17.3	10.6	12.8	10.1	12.9	9.8	13.0	9.2	14.7	10.8	9.8	6.3	8.0	3.0
Germany, no mig. background	89.7	89.1	71.4	70.4	96.5	97.6	81.4	83.5	95.7	95.5	82.4	84.2	92.1	92.8	75.4	82.3
No Partner	60.7	52.3	59.1	57.6	54.2	48.5	68.9	71.9	63.0	55.3	66.5	72.9	66.4	60.9	62.9	70.9
Partner, not married	11.8	12.0	7.1	7.1	11.4	10.8	8.6	9.8	12.0	11.9	8.3	8.8	11.2	12.4	9.7	6.4
married	27.4	35.7	33.8	35.4	34.3	40.8	22.4	18.3	25.0	32.9	25.1	18.4	22.4	26.7	27.4	22.7
child under 3	6.3	4.5	8.3	6.1	4.3	1.6	7.4	2.1	5.2	2.2	7.4	1.4	4.7	2.4	11.9	1.5
no child	80.8	63.4	75.6	57.5	84.6	75.4	81.6	86.1	84.2	68.4	79.8	71.7	86.0	76.5	76.1	75.9
1 child	10.7	22.7	11.4	23.2	9.9	17.1	9.5	10.3	9.4	21.3	9.9	19.3	9.0	16.9	12.7	13.8
2 children	5.7	10.3	8.2	13.3	4.2	6.0	5.5	3.4	4.4	8.2	6.4	7.1	3.8	5.6	8.2	6.9
3 or more children	2.7	3.6	4.8	6.0	1.4	1.6	3.4	0.3	1.9	2.0	3.9	1.9	1.2	1.1	3.0	3.4
equivalent UB II in April 2005 (in Euros)	688	635	725	688	681	607	680	644	656	597	691	705	678	634	724	716

1) These statistics include all potential controls including those who were not used for matching because they are registered in a district with no inflow into one of the programmes from May to July 2005.

Table 5 continued: selected descriptive statistics of treatment and control group by gender and region (in %)¹⁾

	Control (Waiting)				JCS				1EJs				WO-CJ			
	M	W	M	W	M	W	M	W	M	W	M	W	M	W	M	W
	East	East	West	West	East	East	West	West	East	East	West	West	East	East	West	West
no sec. schooling degree, no voc. training	12.6	13.0	22.5	30.4	8.8	5.9	23.3	21.6	12.5	8.1	23.5	19.6	9.7	6.6	22.1	19.7
sec. school, no voc. training	12.1	11.3	26.4	26.1	10.3	7.6	32.5	30.2	13.6	10.9	29.8	28.7	10.4	7.1	31.1	25.6
sec. school, voc. training	28.0	19.8	28.4	17.7	34.9	22.3	27.0	16.8	31.8	22.6	29.2	22.3	32.4	23.8	28.1	26.1
interm. school leaving certificate, no voc. training	5.1	6.6	3.8	5.3	3.2	3.8	4.1	6.7	5.0	6.4	3.7	6.7	4.7	5.0	4.5	7.4
interm. school leaving certificate, voc. training	34.8	41.9	8.4	10.0	36.6	51.8	7.8	12.9	32.6	46.5	7.2	13.0	34.5	48.9	8.2	13.3
upper sec. school leaving certificate, no voc. training	1.2	0.9	2.2	2.0	0.5	0.5	0.8	2.1	0.7	0.6	1.4	1.8	1.1	0.9	1.7	2.5
upper sec. school leaving certificate, voc. training	2.5	2.6	3.5	3.3	2.5	3.2	1.5	4.6	1.8	2.4	2.4	3.7	3.1	4.4	2.2	2.5
upper sec. school leaving certificate, university degree	3.0	2.7	3.0	2.9	3.1	4.5	1.8	4.9	1.5	1.9	1.6	2.8	3.6	3.2	1.2	2.5
missing	0.8	1.2	1.7	2.3	0.2	0.5	1.1	0.3	0.4	0.6	1.2	1.3	0.5	0.2	0.7	0.5
reg. emp. 1.5.2000-30.4.2005: 0 months	28.8	41.5	31.5	52.2	15.4	26.1	24.1	30.7	20.2	30.4	25.0	35.9	17.5	24.3	17.2	35.5
reg. emp. 1.5.2000-30.4.2005: 1-6 months	14.0	12.8	12.2	9.6	13.7	13.4	12.1	10.6	13.8	13.0	13.4	11.9	12.9	10.7	11.2	6.9
reg. emp. 1.5.2000-30.4.2005: 7-12 months	17.5	17.5	12.6	9.3	21.5	25.2	14.3	13.4	20.4	22.8	15.4	12.9	16.5	16.9	11.2	13.3
reg. emp. 1.5.2000-30.4.2005: 13-24 months	21.7	16.1	22.2	14.7	28.2	22.0	26.3	26.5	26.4	21.0	25.0	20.8	26.2	22.0	31.3	21.7
reg. emp. 1.5.2000-30.4.2005: 25-60 months	17.9	12.1	21.4	14.1	21.1	13.2	23.1	18.8	19.2	12.8	21.2	18.5	26.9	26.1	29.1	22.7

1) These statistics include all potential controls including those who were not used for matching because they are registered in a district with no inflow into one of the programmes from May to July 2005.

Table 6: Planned length of participation in the programmes in our sample (in months)

	East Germany		West Germany	
	Men	Women	Men	Women
	<i>JCS</i>			
1 st decile	5.0	5.8	3.5	2.0
mean	7.2	7.4	7.8	8.2
median	6.0	6.0	6.0	9.0
9 th decile	12.0	12.0	12.0	12.0
	<i>1EJ</i>			
1 st decile	4.0	4.5	3.1	3.1
mean	6.5	6.7	6.4	6.5
median	6.0	6.0	6.0	6.0
9 th decile	9.1	10.5	10.0	10.0
	<i>WO - CJ</i>			
1 st decile	5.1	5.0	3.0	2.6
mean	7.7	7.8	6.6	6.3
median	8.9	9.0	6.0	6.0
9 th decile	9.1	9.1	9.7	9.7

Table 7: First monthly real wage in job creation scheme and work opportunities in contributory jobs (in €)^{1),2),3)}

	All age-groups				Aged at least 25 years			
	East Germany		West Germany		East Germany		West Germany	
	Men	Women	Men	Women	Men	Women	Men	Women
	<i>JCS</i>				<i>JCS</i>			
# of obs.	6,542	4,085	694	291	5,577	3,667	445	197
1 st decile	621	624	304	321	664	668	890	639
mean	871	862	929	877	894	876	1,147	1,058
median	869	867	981	935	875	873	1,090	998
9 th decile	1,091	1,074	1,378	1,338	1,094	1,082	1,516	1,454
	<i>WO-CJ</i>				<i>WO-CJ</i>			
# of obs.	967	518	283	140	672	357	172	86
1 st decile	699	735	520	460	761	787	661	506
mean	915	894	965	840	949	921	1,020	872
median	892	886	1,040	762	943	892	1,024	762
9 th decile	1,140	1,132	1,255	1,169	1,141	1,132	1,369	1,432

1) Deflated by the consumer price index, which was normalized to one for April 2005.

2) Contributory employment spells that belong to a JCS of WO-CJ spell have to be identified by comparing their start dates. The statistics in this table only refer to JCS of WO-CJ spells, for which a contributory employment spell with the same or quite similar start could be identified.

3) The data do not provide wage information on a monthly basis, but an average daily wage for employment periods during a calendar year. From these data, we computed monthly wage levels, hence they represent for an individual an average monthly wage of an employment period in the calendar year 2005.

Table 8: Coefficients of probit estimates – One-Euro-Job versus waiting (Panel 1)

	East Germany		West Germany	
	Men	Women	Men	Women
<i>Age in years</i>				
15-20	Reference			
21-24	-0.089 ***	-0.029	-0.100 ***	-0.028
25-30	-0.752 ***	-0.620 ***	-0.524 ***	-0.460 ***
31-35	-0.746 ***	-0.564 ***	-0.515 ***	-0.439 ***
36-40	-0.688 ***	-0.536 ***	-0.518 ***	-0.442 ***
41-45	-0.644 ***	-0.508 ***	-0.496 ***	-0.420 ***
46-50	-0.631 ***	-0.515 ***	-0.532 ***	-0.456 ***
51-55	-0.645 ***	-0.512 ***	-0.608 ***	-0.568 ***
56-61	-0.746 ***	-0.660 ***	-0.853 ***	-0.842 ***
Health restrictions	-0.049 ***	-0.068 ***	-0.078 ***	-0.069 ***
<i>Nationality</i>				
Germany, no mig. background	Referer			
Germany, mig. background	-0.186 ***	-0.140 ***	-0.096 ***	-0.101 ***
EU without Germany	-0.197 ***	-0.164 ***	-0.225 ***	-0.169 ***
Europe Rest (incl Turkey)	-0.346 ***	-0.290 ***	-0.317 ***	-0.312 ***
no EU country	-0.295 ***	-0.312 ***	-0.306 ***	-0.254 ***
<i>Family background</i>				
No Partner	Referer			
Partner, not married	0.036 *	-0.046 **	-0.002	-0.042
married	0.064 ***	-0.021	-0.036 ***	-0.135 ***
child under 3	-0.029	-0.180 ***	-0.017	-0.473 ***
no child	Reference			
1 child	0.003	0.005	-0.022	-0.074 ***
2 children	0.012	0.011	-0.034 **	-0.134 ***
3 or more children	-0.015	-0.029	-0.013	-0.207 ***
<i>Vocational education / training</i>				
no sec. schooling degree, no voc. training	Referer			
sec. school, no voc. training	-0.001	0.043 **	-0.021 **	0.029 **
sec. school, voc. training	0.004	0.102 ***	-0.041 ***	0.059 ***
interm. school leaving certificate, no voc. training	-0.039 **	0.071 ***	-0.092 ***	0.048 **
interm. school leaving certificate, voc. training	-0.042 ***	0.103 ***	-0.101 ***	0.026
upper sec. school leaving certificate, no voc. training	-0.131 ***	-0.054	-0.125 ***	-0.012
upper sec. school leaving certificate, voc. training	-0.058 **	0.055 *	-0.141 ***	-0.002
upper sec. school leaving certificate, university degree	-0.158 ***	0.056 *	-0.174 ***	0.037
missing	-0.051	-0.026	-0.047 *	-0.027
<i>Duration of unemployment in year before 30/04/2005</i>				
0-6 months	Reference			
7-9 months	0.005	0.029 *	0.040 ***	0.066 ***
10-12 months	0.065 ***	0.066 ***	0.062 ***	0.071 ***
<i>Duration of unemployment between 01/05/2000 and 30/04/2004</i>				
0 months	Reference			
1-6 months	0.121 ***	0.104 ***	0.146 ***	0.053 ***
7-12 months	0.136 ***	0.137 ***	0.187 ***	0.059 ***
13-18 months	0.166 ***	0.140 ***	0.198 ***	0.105 ***
19-24 months	0.185 ***	0.187 ***	0.210 ***	0.114 ***
25-30 months	0.216 ***	0.195 ***	0.226 ***	0.089 ***
31-36 months	0.211 ***	0.194 ***	0.219 ***	0.085 ***
37-48 months	0.207 ***	0.171 ***	0.201 ***	0.041

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 8 (continued): Coefficients of probit estimates – One-Euro-Job versus waiting (Panel 2)

	East Germany		West Germany	
	Men	Women	Men	Women
<i>Cum. dur. out of labour force 01/01/2004 - 31/12/2004</i>				
0 months	Reference			
1-3 months	-0.075 ***	-0.070 ***	-0.049 ***	-0.034 **
4-6 months	-0.029	0.004	-0.046 ***	-0.014
7-9 months	-0.036	-0.053 *	-0.033 *	0.014
10-12 months	-0.174 ***	-0.198 ***	-0.132 ***	-0.146 ***
<i>Cum. dur. out of labour force 01/01/2000 - 31/12/03</i>				
0 months	Reference			
1-6 months	-0.064 ***	-0.058 ***	-0.046 ***	-0.051 ***
7-12 months	-0.069 ***	-0.033 *	-0.059 ***	-0.052 ***
13-18 months	-0.045 **	-0.022	-0.053 ***	-0.019
19-24 months	-0.017	0.012	-0.014	-0.070 ***
25-30 months	0.069 **	0.082 ***	0.023	-0.006
31-36 months	0.111 ***	0.127 ***	0.074 ***	0.005
37-42 months	0.145 ***	0.195 ***	0.106 ***	0.045
43-48 months	0.171 ***	0.223 ***	0.119 ***	0.020
<i>Cum. dur. of UI/UB I receipt in year before 30/04/05</i>				
0 months	Reference			
1-3 months	-0.050 ***	-0.024	-0.040 ***	-0.014
4-6 months	0.002	0.011	0.008	0.033 *
7-9 months	0.045 *	0.053 *	0.006	0.050 **
10-12 months	0.079 **	0.023	0.020	-0.026
<i>Cum. dur. of UB I receipt 01/05/2000 - 30/04/04</i>				
0 months	Reference			
1-3 months	0.018	0.053 ***	0.031 **	
4-6 months	0.036 ***	0.033 **	0.005	
7-12 months	0.028 **	0.035 **	-0.012	
13-18 months	0.049 ***	0.053 ***	0.007	
19-48 months	0.095 ***	0.046	0.027	
<i>Cum. dur. of UB II receipt before 30/04/05</i>				
<=1 month	Reference			
>1-2 months		0.170 ***	0.029	
>2-3 months		0.109 ***	0.034	
>3-4 months		0.128 ***	0.068 ***	
UI ben. receipt, Dec. 31st 2004	-0.051 **	-0.065 **	-0.045 **	
UA ben. receipt, Dec. 31st 2004	0.033 **	0.036 **	-0.044 ***	
<i>Cum. dur. of regular unsubsidized employment spells in 5 years before 30/04/2005</i>				
1-6 months	Reference			
7-12 months	0.012	0.043 ***	0.010	-0.009
13-24 months	0.048 ***	0.078 ***	0.015	-0.017
25-60 months	0.048 **	0.057 **	0.021	-0.081 ***
<i>Cum. dur. of minor employment spells in 5 years before 30/04/2005</i>				
0 months	Reference			
1-6 months	0.042 ***	0.064 ***		
7-12 months	0.046 ***	0.053 ***		
13-18 months	0.017	0.064 ***		
19-24 months	0.043 *	0.096 ***		
25-30 months	0.023	0.048 *		
31-42 months	0.046	0.107 ***		
43-60 months	0.070 *	0.165 ***		
In Min. Empl on 30/04/2005	-0.416 ***	-0.457 ***	-0.283 ***	-0.295 ***

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 8 (continued): Coefficients of probit estimates – One-Euro-Job versus waiting (Panel 3)

	East Germany		West Germany	
	Men	Women	Men	Women
<i>ALMP participation in the last 5 years</i>				
Public Works	0.136 ***	0.126 ***	0.175 ***	0.205 ***
Wage subsidy	-0.089 ***	-0.081 ***	-0.050 ***	-0.050 *
further training	0.002	0.006	0.030 **	0.054 ***
st within-company training	-0.047 ***	-0.030 *	0.003	0.048 **
st classroom training	-0.017	-0.012	0.041 ***	0.028
private placement agency	-0.006	0.002	0.004	-0.007
1-Euro-Job	-0.085	0.256 ***	0.330 ***	0.407 ***
additional programmes like swL	-0.250 ***	-0.200 ***	-0.065	0.052
start-up subsidy	-0.288 ***	-0.216 ***	-0.246 ***	-0.182 ***
other programmes	0.056 ***	0.027	0.115 ***	0.092 ***
<i>Time since end of last ALMP</i>				
no program	Reference			
1-3 months	0.043 ***		0.050 ***	0.128 ***
7-12 months	0.010		0.009	0.116 ***
13-24 months	-0.003		0.023 **	0.042 **
ALMP during last year: yes				-0.061 *
<i>Number of ALMPs during last five years</i>				
no ALMP	Reference			
1 ALMP	0.094 ***	0.094 ***	0.054 ***	0.074 ***
2 ALMPs	0.158 ***	0.180 ***	0.090 ***	0.111 ***
3 ALMPs	0.206 ***	0.220 ***	0.128 ***	0.107 ***
4 ALMPs	0.257 ***	0.261 ***	0.114 ***	0.111 **
5 ALMPs	0.228 ***	0.304 ***	0.175 ***	0.153 **
<i>Professional status in last job</i>				
blue-collar worker, apprentice	Reference			
skilled worker, foreman		0.002	-0.069 ***	-0.098 ***
white-collar worker		-0.010	-0.123 ***	-0.080 ***
part-time		0.039 ***	-0.009	-0.018
<i>Last monthly gross real wage (deflated with CPI, 2005=100)</i>				
zero	Reference			
>0 - 500 Euros	0.072 ***	0.027	0.032 *	0.095 ***
>500 - 1000 Euros	0.140 ***	0.070 ***	0.075 ***	0.113 ***
>1000 - 1500 Euros	0.082 ***	0.077 ***	0.097 ***	0.126 ***
>1500 - 2000 Euros	-0.002	0.040 *	0.064 ***	0.154 ***
> 2000 Euros	-0.053 **	0.010	-0.006	0.062 **
<i>Time since end of last contributory job</i>				
1-6 months	Reference			
7-12 months	0.048 ***		-0.002	0.000
13-24 months	0.053 ***		0.002	-0.004
25-36 months	0.041 **		0.002	-0.033
37-48 months	0.022		0.000	-0.055 **
>48 months	0.005		-0.032 **	-0.046 **
<i>Number of contributory jobs in last 5 years</i>				
no job	Reference			
1 job	-0.035 **	-0.013		
2 jobs	-0.024	0.019		
>=3 jobs	0.002	0.045 **		

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 8 (continued): Coefficients of probit estimates – One-Euro-Job versus waiting (Panel 4)

	East Germany		West Germany	
	Men	Women	Men	Women
<i>Cum. dur. of unemployment of partner 01/05/2000 - 30/04/2005</i>				
0 months	Reference			
1-12 months	0.061 ***		0.070 ***	0.040
13-24 months	0.053 **		0.089 ***	0.040
25-30 months	0.062 **		0.108 ***	0.009
31-36 months	0.061 **		0.034	0.004
37-42 months	0.085 ***		0.107 ***	-0.069 *
43-60 months	0.054 **		-0.020	0.041
<i>Cum. dur. out of labour force of partner 01/01/2000-31/12/2004</i>				
0 months	Reference			
1-12 months	-0.046 ***	-0.002		-0.023
13-24 months	-0.037	-0.059 **		0.024
25-30 months	-0.058 *	0.015		-0.001
31-36 months	-0.064 *	-0.062		0.094 **
37-42 months	-0.046	-0.110 **		0.110 **
43-60 months	-0.051 **	-0.025		0.002
<i>Cum. dur. in regular employment of partner 01/01/2000 - 31/12/2004</i>				
0 months	Reference			
1-12 months		0.032 *	-0.030 *	
13-24 months		0.061 ***	-0.080 ***	
25-30 months		0.130 ***	-0.065 **	
31-36 months		0.103 ***	-0.077 **	
37-42 months		0.080 **	-0.050	
43-60 months		0.090 ***	-0.014	
<i>Labour force status of partner on 30/04/2005</i>				
Partner minor employed	0.060 ***	-0.023	0.075 ***	
Partner reg. employed	0.051 **	0.043 *	0.056 **	
Partner unemployed	-0.042 ***	-0.026 *	0.010	
<i>Industry of last contributory job</i>				
missing sector	-0.124 ***	-0.049 **	-0.063 ***	-0.028
primary and secondary sector	0.068 ***	0.039	0.136 ***	0.070
Food and tabaco industries	0.005	-0.109 ***	-0.034	0.020
Wood, paper, printing/media industries	-0.017	0.119 **	0.012	-0.050
Chemical ind., machinery/equipment/vehicles	-0.074 *	-0.029	-0.016	0.069
other manufacturing	Reference			
Construction	-0.074 ***	-0.047	-0.029 **	0.006
Wholesale trade and car sales and maintenance	-0.138 ***	-0.111 ***	-0.035 *	0.016
Retail trade and Hotels/Restaurants	-0.132 ***	-0.155 ***	-0.053 ***	-0.063 ***
Transport services, communication	-0.127 ***	-0.018	-0.104 ***	-0.030
services for companies	-0.040 **	-0.035	0.044 ***	0.046 **
Public administration, defense, social security				
agencies	0.113 ***	0.116 ***	0.201 ***	0.148 ***
Education	0.013	-0.009	0.136 ***	0.140 ***
Health And Social Work	0.052 **	0.078 ***	0.187 ***	0.154 ***
Other services	0.012	0.021	0.092 ***	0.026
<i>In of OECD equiv hh-income in April 2005</i>				
all UB II	0.028 **	0.027 **	0.057 ***	0.078 ***
other benefits	-0.004 *	0.001	-0.002	-0.003
net earnings	-0.017 ***	-0.017 ***	-0.022 ***	-0.028 ***

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 8 (continued): Coefficients of probit estimates – One-Euro-Job versus waiting (Panel 5)

	East Germany		West Germany	
	Men	Women	Men	Women
<i>Labour market types (Rüb and Werner, 2007)</i>				
Cities with below average LM conditions, high LTU)	Reference			
Cities in West G. with average LM conditions			-0.046 ***	-0.059 ***
Cities in West G. with above-average LM conditions			-0.036 *	-0.035
Rural areas in West G. with average LM conditions			0.012	-0.029
Rural areas in West G. with favourite LM conditions, seasonal d			-0.031	-0.053 *
Rural areas in West G. with very favourite LM conditions, seaso			0.067 ***	0.051
Rural areas in West G. with very favourite LM conditions,low			0.075 ***	0.068 **
Mainly urban areas with average LM conditions	-0.083 *	0.035	0.038 ***	0.021
Mainly rural areas in East and West with below-average LM condit	0.020	0.028	0.109 ***	0.058 **
Mainly rural areas in East G. with severe LM conditions				
Mainly rural areas in East G. with very severe LM conditions				
<i>Regional variables (district level)</i>				
local unempl. ratein yearmonth 200504	0.012 ***	0.021 ***	0.000	
total %age change local unempl. ratein 200504-200404	-0.014 ***	-0.013 ***	0.001	-0.002
percentage of long-term unemployment yearmonth 200504	-0.014 ***	-0.017 ***	-0.003 ***	0.001
total %age change percentage of long-term unemployment 200504-200404	0.005 ***	0.000	0.002 ***	-0.002
vacancy-unemployment ratio yearmonth 200504	1.052 **	0.173	-0.290 ***	-0.001
total %age change vacancy-unemployment ratio 200504-200404	0.000 *	0.000	0.001 ***	-0.342 ***
monthly infl. rate into 1-Euro-Jobs 04/2005 by gender	0.039 ***	0.035 ***	0.067 ***	0.001 ***
const	-1.075	-1.521	-1.842	-2.057

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 9: Regular employment rates of all and of matched controls 36 months after programme start (in %)

	JCS		1EJs		WO-CJ	
	Controls before Matching	Controls after Matching	Controls before Matching	Controls after Matching	Controls before Matching	Controls after Matching
	<i>Versus Waiting</i>					
East Germany						
Men	18.2	18.0	18.2	17.9	17.6	24.3
Women	13.5	13.6	13.4	14.0	13.2	19.8
West Germany						
Men	21.4	27.4	21.8	23.7	22.4	31.7
Women	14.4	19.0	14.8	19.3	15.2	23.2
	<i>Versus 1EJ-participation</i>					
East Germany						
Men	16.8	15.8	.	.	16.3	21.3
Women	15.0	14.4	.	.	14.9	21.8
West Germany						
Men	24.0	28.0	.	.	24.8	33.2
Women	21.8	22.4	.	.	23.7	28.5

Table 10: Match quality – mean standardised absolute bias

	JCS		1EJs		WO-CJ	
	Before Matching	After Matching	Before Matching	After Matching	Before Matching	After Matching
	<i>Versus Waiting</i>					
East Germany						
Men	10.3	0.4	6.0	0.3	11.6	1.4
Women	10.6	0.4	6.1	0.2	13.7	2.1
West Germany						
Men	14.2	1.2	6.7	0.2	18.5	1.9
Women	18.7	1.8	10.5	0.3	25.0	1.8
	<i>Versus 1EJ-participation</i>					
East Germany						
Men	8.5	0.6	.	.	8.2	1.1
Women	8.5	0.5	.	.	11.5	1.7
West Germany						
Men	10.0	1.2	.	.	14.3	1.9
Women	11.3	1.7	.	.	16.7	2.0

Table 11: ATT on regular employment rate 6 and 36 months after programme start (percentage points)

	JCS		1EJs		WO-CJ	
	6 mths	36 mths	6 mths	36 mths	6 mths	36 mths
	<i>Versus Waiting</i>					
East Germany						
Men	-3.8 ***	1.0 *	-3.0 ***	-1.2 ***	-5.3 ***	5.6 ***
Women	-2.2 ***	3.2 ***	-2.0 ***	0.8 ***	-3.2 ***	8.8 ***
West Germany						
Men	-5.4 ***	0.2	-2.4 ***	1.4 ***	-2.6	10 ***
Women	0.2	11.4 ***	-1.7 ***	3.0 ***	2.5	3.8
	<i>Versus 1EJ-participation</i>					
East Germany						
Men	-0.8 ***	3.1 ***	.	.	-1.5 **	8.2 ***
Women	0.0	2.5 ***	.	.	-0.9	7.1 ***
West Germany						
Men	-1.7 **	-0.7	.	.	1.4	8.6 ***
Women	2.3	8.0 ***	.	.	4.5 *	-1.7

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 12: ATT on cumulated months in regular employment during the 1st, 2nd and 3rd year after programme start

	JCS			1EJs			WO-CJ		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
	<i>Versus Waiting</i>								
East Germany									
Men	-0.40 ***	-0.13 ***	0.05	-0.30 ***	-0.25 ***	-0.17 ***	-0.40 ***	0.20	0.45 ***
Women	-0.22 ***	0.10 **	0.33 ***	-0.20 ***	-0.06 ***	0.07 **	-0.04	1.06 ***	1.22 ***
West Germany									
Men	-0.52 ***	-0.07	0.19	-0.26 ***	-0.01	0.13 ***	-0.06	0.92 ***	0.97 ***
Women	-0.11	0.64 ***	1.19 ***	-0.18 ***	0.16 ***	0.29 ***	0.01	0.81 **	0.73 *
	<i>Versus 1EJ-participation</i>								
East Germany									
Men	-0.06 ***	0.18 ***	0.29 ***	.	.	.	0.06	0.62 ***	0.81 ***
Women	-0.01	0.16 ***	0.27 ***	.	.	.	0.19 **	1.04 ***	1.04 ***
West Germany									
Men	-0.18 ***	0.06	0.10	.	.	.	0.28 **	0.73 ***	0.77 ***
Women	0.14	0.6 ***	0.94 ***	.	.	.	0.24	0.51	0.19

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 13: ATT on real annual gross earnings in 2005, 2006 and 2007 (in €)

	JCS			1EJs			WO-CJ		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
	<i>Versus Waiting</i>								
East Germany									
Men	4,324 ***	804 ***	156 ***	-414 ***	-382 ***	-176 ***	4,536 ***	1,060 ***	550 ***
Women	4,724 ***	1,298 ***	646 ***	-230 ***	-72 ***	137 ***	4,702 ***	1,865 ***	1,323 ***
West Germany									
Men	4,310 ***	1,763 ***	835 ***	-281 ***	-1	117 ***	3,838 ***	1,829 ***	1,892 ***
Women	4,157 ***	2,516 ***	1,663 ***	-181 ***	183 ***	357 ***	3,727 ***	1,608 ***	916 *
	<i>Versus 1EJ-participation</i>								
East Germany									
Men	4,815 ***	1,265 ***	364 ***	.	.	.	5,058 ***	1,729 ***	1,021 ***
Women	5,009 ***	1,435 ***	484 ***	.	.	.	4,963 ***	1,853 ***	1,072 ***
West Germany									
Men	4,647 ***	1,727 ***	716 ***	.	.	.	4,177 ***	1,558 ***	1,523 ***
Women	4,365 ***	2,425 ***	1,213 ***	.	.	.	3,957 ***	1,414 ***	-9

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

Table 14: ATT on the probability not to receive UB II 6 and 36 months after programme start (percentage points)

	JCS		1EJs		WO-CJ	
	6 mths	36 mths	6 mths	36 mths	6 mths	36 mths
	<i>Versus Waiting</i>					
East Germany						
Men	25.1 ***	-1.2 *	-6.3 ***	-3.5 ***	31.1 ***	-0.9
Women	30.2 ***	1.1	-4.7 ***	-2.3 ***	35.1 ***	2.7
West Germany						
Men	29.9 ***	0.8	-5.0 ***	-3.1 ***	24.7 ***	7.6 ***
Women	31.5 ***	4.0	-4.2 ***	-2.5 ***	20.5 ***	1.6
	<i>Versus 1EJ-participation</i>					
East Germany						
Men	32.1 ***	3.0 ***	.	.	38.2 ***	5.7 ***
Women	36.5 ***	3.8 ***	.	.	40.9 ***	4.4 *
West Germany						
Men	36.3 ***	3.6 *	.	.	29.3 ***	9.2 ***
Women	37.7 ***	6.2 **	.	.	26.3 ***	3.5

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

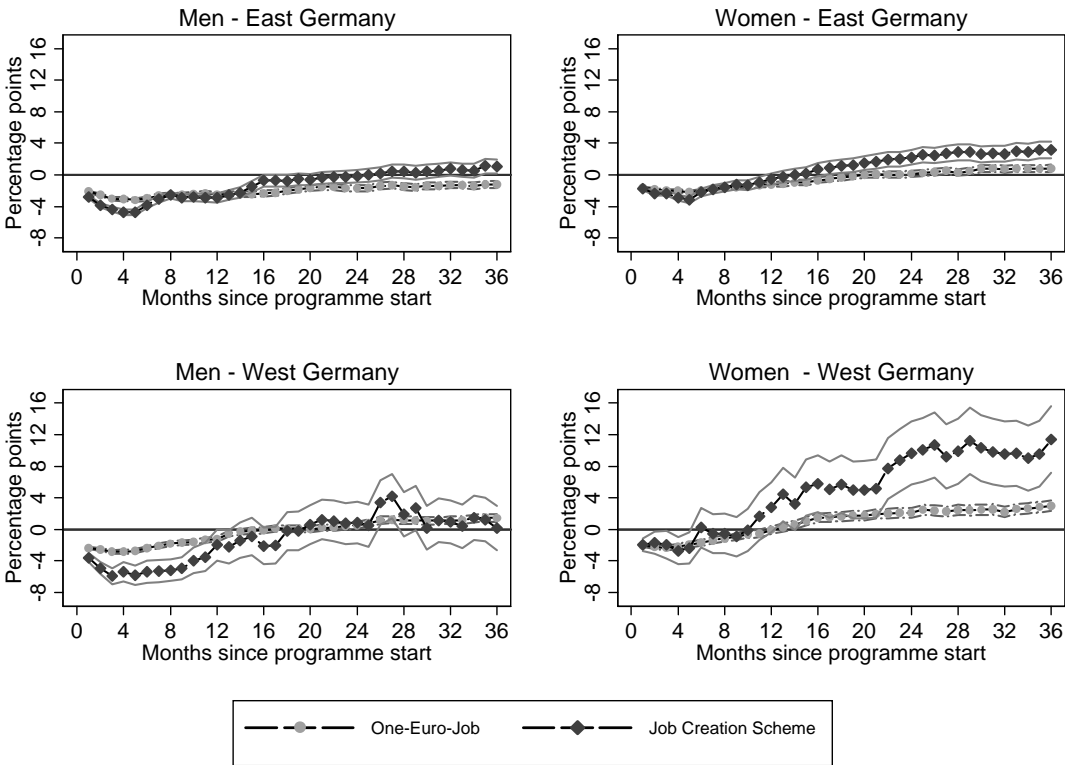
Table 15: ATT on monthly average real equivalent UB II receipt in 1st, 2nd and 3rd year after programme start (in €)

	JCS			1EJs			WO-CJ		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
	<i>Versus Waiting</i>								
East Germany									
Men	-236 ***	0	2	35 ***	22 ***	19 ***	-269 ***	-32 ***	-11
Women	-239 ***	-23 ***	-21 ***	27 ***	14 ***	11 ***	-268 ***	-49 ***	-47 ***
West Germany									
Men	-267 ***	-27 ***	-19 *	32 ***	19 ***	16 ***	-205 ***	-54 ***	-56 ***
Women	-261 ***	-47 ***	-38 ***	31 ***	15 ***	12 ***	-172 ***	-2	-9
	<i>Versus 1EJ-participation</i>								
East Germany									
Men	-277 ***	-25 ***	-20 ***	.	.	.	-313 ***	-64 ***	-44 ***
Women	-269 ***	-37 ***	-35 ***	.	.	.	-301 ***	-58 ***	-47 ***
West Germany									
Men	-306 ***	-46 ***	-33 ***	.	.	.	-238 ***	-65 ***	-70 ***
Women	-307 ***	-68 ***	-45 ***	.	.	.	-228 ***	-28	-12

Note: *** 1% significance level, ** 5% significance level, * 10% significance level.

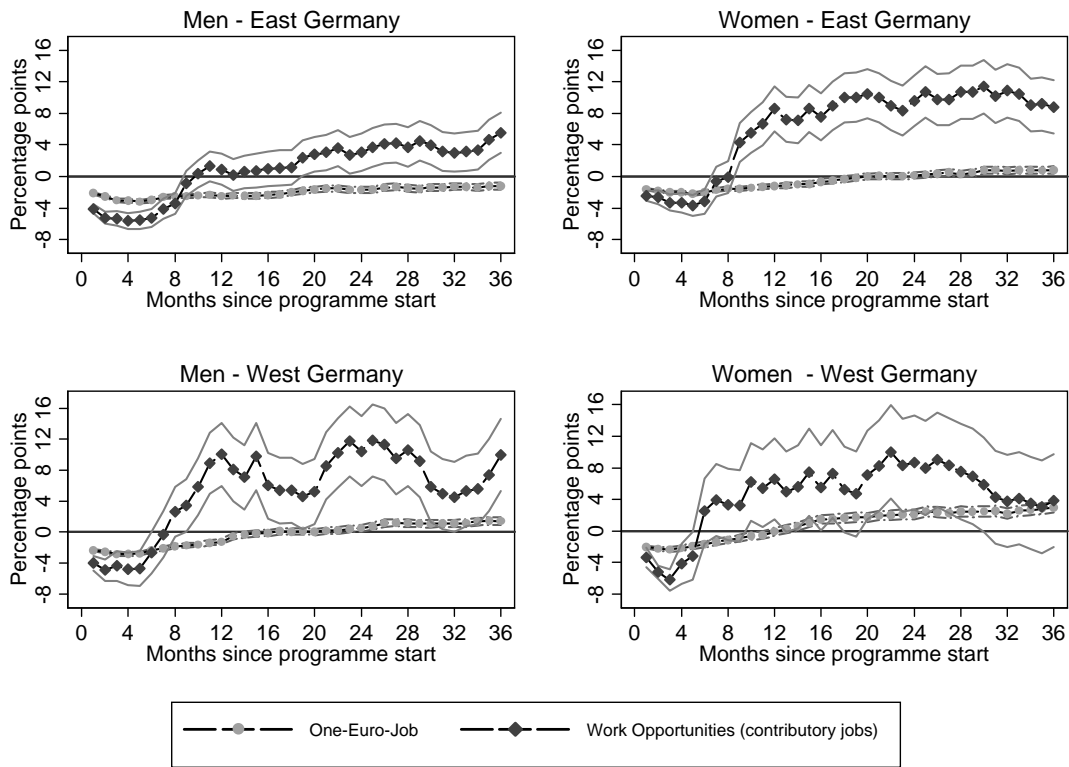
Figures

Figure 1: Net effects on regular employment rates of 1EJ- or JCS-participation compared with waiting¹⁾



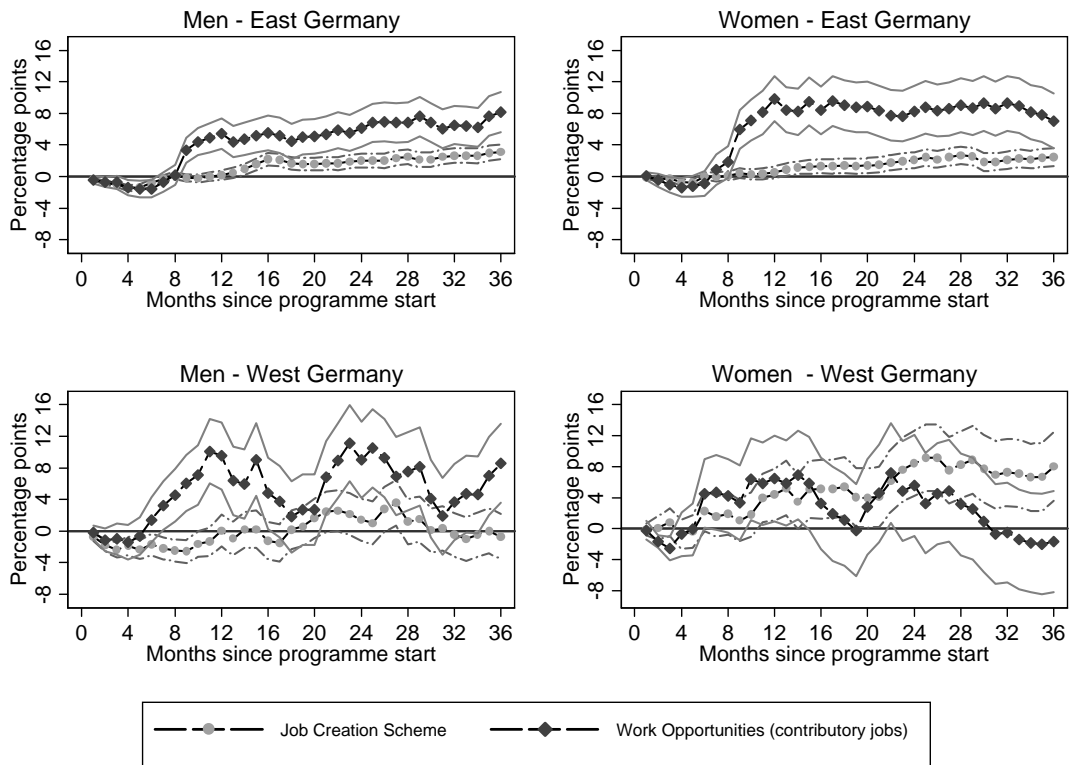
1) Effects are displayed together with 90% confidence bands.

Figure 2: Net effects on regular employment rates of 1EJ- or WO-CJ-participation compared with waiting¹⁾



1) Effects are displayed together with 90% confidence bands.

Figure 3: Net effects on regular employment rates of JCS- or WO-CJ- participation compared with 1EJ-participation¹⁾



1) Effects are displayed together with 90% confidence bands.