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Direct job creation revisited

Is it effective for welfare recipients and does it matter whether participants receive a wage?

Katrin Hohmeyer (IAB)
Joachim Wolff (IAB)

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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Mit der Reihe „IAB-Discussion Paper“ will das Forschungsinstitut der Bundesagentur für Arbeit den Dialog mit der externen Wissenschaft intensivieren. Durch die rasche Verbreitung von Forschungsergebnissen über das Internet soll noch vor Drucklegung Kritik angeregt und Qualität gesichert werden.

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Contents

Abstract

Bringing welfare recipients into jobs is a major goal of German labour market policy since a reform of the year 2005. Direct job creation providing participants with temporary subsidized jobs mainly in the non-profit sector plays an important role for achieving this goal. There are three schemes that differ only with respect to a few features: traditional job creation schemes, One-Euro-Jobs and work opportunities subsidising contributory jobs. We study and compare the effectiveness of these three job creation schemes for welfare recipients starting their participation in these programmes in mid 2005. Looking at three similar schemes enables us to study the implications of different programme features for the effectiveness. One major difference between the schemes is that traditional job creation schemes and work opportunities as contributory jobs provide participants with regular earnings, whereas One-Euro-Job participants only receive their benefit and on top a small allowance to cover costs of working. Hence, participation in One-Euro-Jobs in contrast to the other two programmes should provide higher incentives to search for regular jobs during participation. 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 imply that the incentives to search for regular jobs are not much lower for participants in the two schemes offering regular wages than for the alternative One-Euro-Jobs. Next, we find the most beneficial impacts for participants in work opportunities as contributory jobs which is the only scheme that can subsidize commercial jobs.

Zusammenfassung

Seit den Reformen im Jahre 2005 hat die deutsche Arbeitsmarktpolitik verstärkt das Ziel, erwerbsfähige Hilfebedürftige in Arbeit zu integrieren. Öffentlich geförderte Beschäftigung, die Arbeitslosengeld-II-Empfänger eine vorübergehende subventionierte Beschäftigung vorwiegend im Non-Profit Sektor bietet, ist ein Mittel dieses Ziel zu verfolgen. Zwischen 2005 und 2008 gab es drei ähnliche öffentlich geförderte Beschäftigungsmaßnahmen für Arbeitslosengeld-II-Empfänger: 1) Arbeitsbeschaffungsmaßnahmen, 2) Ein-Euro-Jobs und 3) Arbeitsgelegenheiten in der Entgeltvariante. Wir untersuchen und vergleichen die Effektivität dieser drei Maßnahmen für Arbeitslosengeld-II-Empfänger, die im Frühsommer 2005 eine dieser Maßnahmen beginnen. Der Vergleich von drei ähnlichen Maßnahmen ermöglicht es uns, die Bedeutung von einzelnen Programmeigenschaften, wie dem gezahlten Lohn, für die Effektivität zu untersuchen. Im Gegensatz zu den anderen beiden Programmen erhalten Teilnehmer an Ein-Euro-Jobs keinen Lohn, sondern ihr Arbeitslosengeld II und eine Mehraufwandsentschädigung. Daher sollten hier die Anreize für Teilnehmer höher sein, sich einen regulären Job zu suchen. Wir untersuchen die Effekte

der Teilnahme auf Zielgrößen wie Beschäftigung, Einkommen und Arbeitslosengeld-II-Bezug der Teilnehmer mit der Hilfe von Propensity Score Matching und administrativen Daten. Unsere Ergebnisse zeigen, dass die Programme teilweise dazu beitragen, Teilnehmer in reguläre Beschäftigung zu bringen und ihre Hilfebedürftigkeit zu verringern. Wir finden keine Hinweise darauf, dass die Anreize nach einem regulären Job zu suchen, bei den beiden Maßnahmen, in denen Teilnehmer einen Lohn erhalten, deutlich geringer sind als bei Ein-Euro-Jobs. Außerdem finden wir die stärksten Beschäftigungseffekte für Arbeitsgelegenheiten in der Entgeltvariante, die anders als die anderen beiden Maßnahmen nicht zusätzlich und gemeinnützig sein müssen.

JEL classification: C13, I38, J68

Keywords: Evaluation of active labour market policy, propensity score matching, pair wise matching, workfare, welfare benefit recipients, work incentives

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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). An important goal of direct job creation is enhancing the employability of participants. Additional aims are integrating participants into regular jobs, providing public goods, providing relief work when unemployment is high (in specific periods, regions or occupations) and enhancing social inclusion of participants . Moreover, by offering such jobs to unemployed people public employment services (PES) can test their willingness to work.

However, effectiveness of direct job creation with respect to increasing employment prospects is a controversial issue. We investigate the impacts of three such direct job creation schemes on the labour market performance of German welfare recipients in the period shortly after the introduction of the 'Basic Income Support for Job-Seekers' (Social Code (SC) II) in 2005. After a long period of high unemployment and rising poverty, the SC II introduced a system of mutual obligation in order to activate a broad group of benefit recipients, i.e., to integrate them into the labour market and to reduce their benefit dependency.[1] Two of the regarded schemes subsidize contributory employment: traditional job creation schemes and work opportunities with a regular wage. The latter scheme is less restrictive in terms of subsidising jobs, where participants complete the same tasks as regularly employed workers. This implies that also commercial jobs can be subsidized. The third alternative is a large-scale work opportunity scheme, where participants continue to receive their welfare benefit plus one up to two Euros per hour worked to compensate them for additional expenses. Its popular name is therefore 'One-Euro-Jobs'.

There are two main motivations for our analyses: First, there is scarce knowledge on whether direct job creation paying a regular wage under a mutual obligation regime brings welfare recipients back to work and out of welfare receipt. For unemployment insurance (UI) benefit recipients, in contrast, evidence on impacts on the participants' performance in the labour market exists and is frequently not encouraging (Martin/Grubb 2001). Our central argument is that impacts of direct job creation might be different for welfare recipients, for whom such schemes operate under the new regime of mutual obligation since 2005. One reason might be that unemployed welfare recipients are on average harder to place and thus receive less job offers than UI recipients. Therefore, their participation does not as strongly prevent them from taking up regular jobs and there is a far larger scope to improve their employability than for UI recipients with a better past employment record.

[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).

Moreover, stronger job search obligations and fewer restrictions on acceptable job offers under the mutual obligation 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. Indeed, some recent evaluation studies for welfare recipients found that One-Euro-Job participation raises employment prospects for many groups of participants, though the impacts are usually not large (Hohmeyer 2009, Hohmeyer/Wolff 2007, Huber et al. 2010). Compared with studies on net impacts of job creation schemes in Germany that analyse earlier periods, these results are somewhat more promising. This might be a consequence of the different participant groups as discussed earlier as well as time periods studied. But it might be as much a consequence of different programme designs of One-Euro-Jobs and traditional job creation schemes for UI benefit recipients. Our direct comparison of One-Euro-Jobs and traditional job creation schemes for welfare recipients can give some information about this issue.

This leads us to the second major issue: Evaluation studies normally fail to assess why one programme works and another one does not. We can have a glimpse into the black box by comparing three very similar programmes differing only in a few aspects. One difference is that two of the three schemes pay a wage. 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. Our direct comparison of the schemes can shed some light on the role of incentives. Furthermore, subsidies under the traditional job creation scheme and One-Euro-Jobs can only be granted for work in the public and non-profit sector and mainly for jobs, where participants do not perform the same tasks as regularly employed workers. The scheme of work opportunities in contributory jobs is less strict on this issue. As a consequence, even commercial jobs might be subsidized. Hence, we can investigate whether this matters for the employment effects of participation.

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. Section three discusses some theoretical considerations on the effects of the programmes. Section four summarizes previous research concerning the effectiveness of these programmes in Germany (if available), as well as some related international evidence. The econometric methods of propensity score matching are discussed in section five. Section six describes the administrative data that our study relies on and highlights observed differences between the three programmes. Moreover, we discuss the implementation of the matching procedure in this section. Section seven provides the major estimation results on net impacts of participating in the three schemes. A summary of the results and major conclusions follow in the final section eight.

2 Institutional framework

2.1 The welfare regime and direct job creation

With the introduction of the Social Code II or the '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 replacing the former unemployment assistance (UA) and flat rate social assistance.[2] UB II is paid as a flat rate welfare benefit for households with an income below the official poverty line. It covers costs of accommodation and heating and provides a cash benefit, which is currently 359 € per month for a single adult household.[3, 4]

The new welfare benefit's label 'unemployment benefit II' is somewhat misleading: Benefit receipt is conditional neither on unemployment nor no UI benefit receipt.[5] Eligibility depends on the income and wealth of a person's household and on the capability of working of at least one household member.[6] Hence, also people who are employed in regular or subsidized jobs and achieve earnings or people who receive UI benefit are eligible for the welfare benefit, if their household income is below the official poverty line. The welfare benefit then fills the gap between the poverty line and other income.[7]

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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 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 €.

4 The cash benefit is indexed to changes of the old-age pension. 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.

5 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 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.

6 People who are aged between 15 and 64 years and can work under the usual conditions of the labour market for at least three hours a day are regarded as capable of working. This criterion is waived only in case of illness or disability (Article 8 SC II). If no member of a poor household is capable of working, the household is eligible for social assistance.

7 Earnings are deducted from the welfare benefit at a marginal benefit reduction rate that is smaller than 100 %. For a single adult's first 100 € earned, the 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. It enlarged the group of people who can participate in ALMPs: 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 often did not register at the PES.

As one means of activation three direct job creation schemes were made available for UB II recipients with low employment prospects: traditional job creation schemes, work opportunities with an allowance for additional expenses (so-called One-Euro-Jobs) and work opportunities as contributory jobs. 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). Though work opportunities subsidising contributory employment are less strict on the job requirements 'additional' and 'public interest'. We return to this point later.

Of these three programmes One-Euro-Jobs are far more important than the others in terms of programme inflow. More than 600,000 individuals started the programme each year from 2005 and 2009 (Table 1).[8] The other two schemes are of much less importance for welfare recipients. Taken together their annual inflow ranged from 86,600 to 112,400 people over the same period. Not surprisingly, the total programme expenditure is highest for One-Euro-Jobs with normally more than one billion Euros per year (Table 2). Even so, with respect to the average direct costs, One-Euro-Jobs are the cheapest programme with about 350 € per month and participant compared with 1,100 € to 2,200 € in the other programmes paying a wage.[9] However, if we add the total welfare benefit to the direct costs of One-Euro-Jobs, the total costs can reach a level of somewhat more than 1,000 € per month for a single adult with no other means of income. We will later show that the average benefit level for the unemployed welfare recipients in our sample is of an order of magnitude of around 700 € per month.

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8 This figure 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). If we add One-Euro-Job starting in these districts, the inflow into One-Euro-Jobs adds up to even more than 700,000 per annum.

9 However, 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.

Although the programmes are similar, they nevertheless differ with respect to certain programme characteristics. Following is a description of the three programmes. Table 3 summarizes key characteristics of the programmes.

2.2 Job creation schemes (JCSs)

JCSs (currently regulated under Art. 260-271 SC III) were introduced with the law on employment promotion (‘Arbeitsförderungsgesetz’) in 1969. In the 1990s and the early 2000s, temporary subsidized jobs under JSCs were one of the most important ALMPs for UI and UA benefit recipients in terms of programme inflow (Hujer/ Thomsen 2006). Between 2005 and 2008, JCSs were also available for UB II recipients. In 2009, eligibility for JCS participation was limited to UI benefit recipients.

One primary goal of JCSs is relieving regional or professional labour markets with excess labour supply. Due to this goal, JCSs are more predominant in East than in West Germany with a much lower unemployment rate. JCSs should provide those unemployed people with temporary employment, who can only find work through this type of support (Federal Employment Agency 2004). Since 2004, emphasis has shifted from integration into the regular labour market to the goal of keeping up or increasing the employability of participants. Nevertheless, the law on JCSs 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 interest. The criterion ‘additional’ implies that without the subsidy the tasks related to the subsidized job would not or only later have been accomplished. Thus, usually the participants are supposed to accomplish tasks that differ from those accomplished by the regular staff of a company. The criterion ’public interest’ means 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. Depending on the formal qualification of the participant, a subsidy of 900 € (no formal qualification) up to 1,300 € (university or technical college degree) per month and participant is paid to the employers in case of employing a participant full-time (Art. 264 SC III).

Subsidies can deviate from these specified lump sums: They 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. However, in many cases subsidies can also be a lot lower than the mentioned lump sums. First, subsidies should never exceed the gross wage of the participant. Second, in case of part-time employment of a participant the lump sum subsidy is reduced according to the ratio between hours worked and potential hours worked in a full-time job. Third, for participants aged less than 25 years the subsidy and wage should be designed such that partici-

pants have an incentive to enter vocational training. In other words, their wages should be lower than apprenticeship pay.[10] Consequently, subsidies and wages are possible that are even far lower than welfare benefits. As we will see later, this is relevant for young West German participants in our sample.

The subsidized jobs are subject to social security contribution with the exception of contributions to UI. Thus, JCS participation does not enable participants to become 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 for goals of regional labour market policy, participation 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.[11]

2.3 One-Euro-Jobs (1EJs)

1EJs were introduced in 2005 for UB II recipients.[12] 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.

Like JCSs, 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. Job centres pay a lump sum to the organisation providing the 1EJ to cover the related costs. Participation is temporary and usually lasted up to six months in 2005 (Hohmeyer/ Schöll/Wolff 2006). Weekly working hours can be designed variably in order to meet specific needs of participants. However, in order 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 (Depart-

[10] 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 in 2005. 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 €.

[11] Source: Department for Statistics of the Federal Employment Agency, information available under http://www.pub.arbeitsamt.de/hst/services/statistik/detail/f.html

[12] A similar programme existed before for social assistance recipients with the "Help Towards Work" (Hilfe zur Arbeit) scheme, for which no evaluation studies were conducted as suitable data was not available. The same holds for work opportunities as contributory jobs.

ment for Statistics of the Federal Employment Agency 2006, 2007). 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, a 1EJ or a work opportunity as contributory job without delay (Art. 3 (2) SC II). This implies that they are a specific, though not necessarily hard to place, target group of the programme.

2.4 Work opportunities subsidizing contributory jobs (WOCJs)

Like 1EJs, WOCJs (Art. 16d SC II) were introduced as a specific programme for welfare recipients in 2005. The goals of the programme are similar to those of the other two programmes, but WOCJs aim more strongly at a permanent integration of participants into regular employment (Federal Employment Agency 2005).

In contrast to jobs subsidized by the two schemes we already discussed, WOCJs do not necessarily have to be additional jobs of public interest. Job centres can abstain from these two criteria if for instance they regard prospects of integrating a participant into the regular labour market as high. More than half of the WOCJs 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).

Job centres pay a wage subsidy to the employer. The level of the subsidy is not explicitly regulated under the SC II. The Federal Employment Agency though recommended to job centres that the wage should be comparable to similar subsidies and should compensate employers for the difference between the wage and the (lower) productivity of the worker (Federal Employment Agency 2005). Thus, in contrast to JCSs there are no strict upper limits for the subsidy. That may help to bring participants with a relatively high subsidy into well paid jobs.[13]

The participant earns a regular wage in a contributory job. Until 2008, this included contributions to UI. Hence, in contrast to the previously discussed schemes, participants could become eligible for a new entitlement to UI benefit if their 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 WOCJs is restricted to less than twelve months. Of course, this does not prevent some partici-

[13] From 2009 onwards, the Federal Employment Agency recommends that the subsidy should be designed according to the rules of the traditional JCSs (Federal Employment Agency 2009).

pants from renewing their eligibility for UI benefits through a WOCJ participation combined with some sufficiently long (previous or subsequent) period of contributory employment.

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 beneficial effects. Participants' effectiveness as jobseekers 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. Participation in a direct job creation scheme may, therefore, in particular improve reemployment chances of people who have been jobless for a very long period and are no longer used to regular work schedules. Next, participation signals a welfare recipient's willingness to work to employers. Moreover, participants 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, working in subsidized jobs might additionally raise their motivation to search for regular work 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 her life situation. To what extent One-Euro-Jobs can achieve such impacts depends certainly on how well the programme participation fits the needs of the participant and contributes to resolving some of 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 JCSs and WOCJs but not for 1EJs, participants also achieve regular earnings which can be considerably higher than the welfare benefit and not necessarily lower than wages that they could earn in regular jobs. For many welfare recipients this might be a 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 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 reser-

vation wages. However, as already mentioned participants might also derive a direct utility from working. If we think in terms of a job search model, this utility increase 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 cause a lower regular employment rate for participants. The reason is that many participants still have to search for jobs for a considerable period of time until they offset 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 the schemes are well known to target on very hard to place individuals. Also for these reasons adverse impacts on employment perspectives of participants are possible and might persist after programme participation is completed.

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 WOCJs can subsidize commercial jobs or public and non-profit sector jobs, in which participants fulfil the same tasks as a company's regular staff. Therefore, participants in this scheme are presumably more likely than participants in one of the other programmes to continue working in an unsubsidized job in the company where participation took place. It might also imply that participants improve skills, for which net demand in the economy is higher. Therefore, the work experience gained by WOCJ participation may also facilitate for participants the take-up of a regular job in other companies than the one where the participation took place. For these reasons, the treatment by WOCJs might be more effective than treatment by one of the other two schemes. Next, in contrast to 1EJs, WOCJs and JCSs are implemented relatively rarely. Therefore, job centres presumably put more effort in ensuring a positive selection of institutions organising the latter two schemes; they might also put more effort into matching a welfare recipient to a suitable subsidized job. This could lead to a higher quality and hence success of treatment than for the large scale 1EJ programme.

Job centres though could place welfare recipients into WOCJs who are likely to gain a sufficient contribution record to UI to claim UI benefit after they completed their participation. These participants would either no longer receive their welfare benefit or receive a reduced welfare benefit. Hence, carousel effects could occur and set disincentives to search for regular jobs for participants (Sianesi 2004). Furthermore, 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.

4 Previous findings

4.1 Direct job creation schemes in Germany

No micro evaluation studies for WOCJs exist so far. The section summarizes findings on the other two programmes.

4.1.1 Traditional job creation schemes

As JCSs already were 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 their 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 JCSs played a major role in East Germany. JCSs were 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.[14] Large administrative datasets became available in the early 2000s. Several micro-evaluation studies of JCSs 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 conducted by Caliendo, Hujer and Thomsen (e.g., Caliendo 2006, Caliendo/Hujer/Thomsen 2008a, 2008b, Hujer/Thomsen 2010). Most of their analyses are based on unemployed individuals entering the programme in February 2000. Hujer/Thomsen (2010) and Thomsen (2007) analyse later JCS inflow cohorts covering entrances between July 2000 and March 2001. Furthermore, Stephan and others investigated the effectiveness of JCSs using a particular database of the Federal Employment Agency called 'TrEffeR' (Stephan/Pahnke 2010, Stephan/Rässler/Schewe 2008). Besides, Wunsch and Lechner (2008) analysed the effects

[14] 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).

of programme participation including JCSs for persons becoming unemployed 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. They require non-participants not to start a programme during a long period of time of 18 months, whereas the other authors define non-participation in the sense of waiting; waiting implies that controls are selected such that they do not participate in a programme only during a very short time window, in which the treatment of the participant group started. The approach of Wunsch and Lechner might lead to a positive selection of controls and thus to less favourable employment effects.[15] Stephan and Pahnke (2010) 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. However, the cumulated regular employment history over the entire 42 months period is still negatively affected by JCS participation.

The results on the employment effects of JCSs for aggregate participant groups are certainly not promising.[16] Yet, several papers study 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 a more efficient implementation of JCS.

Caliendo and others (Caliendo 2006, Caliendo/Hujer/Thomsen 2008a) find that the net impacts on the regular employment rate of participants vary to some extent over

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

[16] Some studies 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 JCSs 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 JCS reduces the efficiency matching function in West Germany.

different participant groups: For many subgroups treatment effects are not significant, but in West Germany long-term unemployed men and women, highly qualified men and older women benefit from participation. In East Germany, effects on the regular employment rate are negative for male and female participants with a short unemployment duration and for prime-aged women, whereas small positive effects can be observed for long-term (at least 12 months) 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 unemployed. In East Germany, treatment effects are negative or insignificant 30 months after programme start.

Looking at programme heterogeneity, Caliendo, Hujer and Thomsen analyse the effectiveness of different types of JCSs 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 the 'Office and Service Sector' and women in East Germany in the 'Community Service Sector'.

Furthermore, several studies estimate the effects of participation in a JCS not only compared to non-participation or 'waiting', but also compared to participation in a different programme (Stephan/Pahnke 2010, Wunsch/Lechner 2008). This way, they shed light on the issue whether a different treatment would have been more effective for JCS participants. Stephan and Pahnke (2010) compare participation in JCSs 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. However, they face difficulties to find an adequate control group because participants in JCSs 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 a JCS instead.

4.1.2 One-Euro-Jobs

Several micro evaluation studies have been conducted looking at participants starting a 1EJ in early 2005 shortly after the introduction of the SC II (Hohmeyer 2009, Hohmeyer/Wolff 2007, Wolff/Popp/Zabel 2010) and in 2006 and 2007 (Huber et al. 2010, Thomsen and Walter 2010). 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 for 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).

Impacts of 1EJ-participation vary considerably 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). Similarly, the treatment effect is negative 20 months after programme start for participants who lost their last job in 2004. The opposite is true for those who lost their job before the year 2004 or who were never regularly employed. Employment effects are largest for West German women who lost their last contributory job between 1992 and 2000. Huber et al. (2010) find 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.

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

Overall, findings on net impacts of 1EJs are qualitatively similar to those found in previous studies on JCSs, but lock-in effects are smaller and positive effects emerge earlier. Thus, results for 1EJs are to some extent more optimistic than those for JCSs. But we should keep in mind that until now studies of JCSs did regard mainly UI benefit recipients and periods before 2005.[17] 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. Hence, a comparison of results of previous evaluation studies on JCS with results of more recent studies on 1EJs for welfare recipients cannot answer the question whether the more optimistic results of 1EJs are due to a different programme design or due to different groups of participants in different time periods. Only a direct comparison between JCS and similar 1EJ participants in a similar setting can answer this question.

[17] Previous studies on net impacts of JCS do not always discuss which share of JCS participants received UI benefit prior to receiving JCS treatment and which share received UA. Stephan and Pahnke (2010) provide such figures for JCS participants who started their treatment in March 2003. About 65 to 70 percent of JCS participants received UI benefit prior to their treatment (see Table A.1 in Stephan/Pahnke 2010).

4.2 International evidence

Also international studies provide evidence that job creation programmes cause at most weak positive employment effects for participants. The studies of Bolvig/ Jensen/Rosholm (2003) for Denmark, Calmfors/Forslund/Hemström (2002) as well as Sianesi (2008) for Sweden, and Gerfin/Lechner (2002) for Switzerland all analyse and compare impacts of different ALMPs on the labour market performance of participants and come to the above conclusion. The same holds for the meta analysis of Kluve (2010) using results of evaluation studies on ALMPs in Europe as well as for surveys of microevaluation studies from different countries (e.g., Martin/Grubb 2001 and Ochel 2004). Regarding employment programmes these studies conclude that working in a market environment matters for the effectiveness of the programme: whereas subsidized 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 WOCJs, which can take place in a market environment, we expect larger treatment effects than for JCSs and 1EJs, which are restricted to additional jobs of public interest. However, microeconometric 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 effects and deadweight loss, which are likely to occur in the case of private sector employment.

5 Evaluation approach and econometric method

5.1 Evaluation approach

We are interested in the effect of participation in one of the three job creation programmes compared to non-participation and for WOCJs and JCSs also compared to 1EJ participation. 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 a direct job creation programme in the given short period of time (Sianesi 2004, 2008, Stephan 2008). Nevertheless, non-participants in this sense can start a different programme (e.g. a training programme) in the time period or a direct job creation programme later on.

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 re-

ceiving 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 a crucial assumption of this approach is that we observe all relevant determinants that influence both the participation probability and the potential labour market outcomes.

5.2 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.[18] This approach for binary treatments was extended by Imbens (2000) and Lechner (2001) for multiple treatments.

With $R-1$ programmes and non-participation, we have R potential outcomes for an individual *i*: $Y_i^0, Y_i^1, ..., Y_i^{R-1}$. 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 (pair wise) and multinomial matching and achieved similar results with both approaches. Thus, we will stick to pair wise 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

$$E(Y_i^r - Y_i^s \mid D_i = r), \tag{1}$$

which is the expected difference between the outcomes of treatment r and treatment s for those participating in treatment r.[19] D_i indicates the treatment status of individual i. In the remainder of the discussion we drop for simplicity the subscript 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 outcome and the probability of participat-

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

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

ing in treatment r instead of treatment s, the ATT can be estimated by the difference of labour market outcomes of participants in alternative r and of the control group participating in alternative s:

$$\tau_{ATT}^{r,s} = E(Y^r - Y^s \mid D = r, X)$$
$$= E(Y^r \mid D = r, X) - E(Y^s \mid D = s, X) \qquad (2)$$

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 her potential outcomes:

$$Y^r \coprod D \mid X \qquad \forall r \qquad (3)$$

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 - finding statistical twins with exactly the same characteristics would be very difficult. 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 $b(X)$. With propensity score matching one might use the (estimated) probability to participate in the treatment r instead of treatment s, given that one of the two treatments took place, as a balancing score, in order to match treated of type r with similar controls of type s.[20] Alternatively, one might use the product between the coefficient vector of the determinants of the participation probability and X, i.e., the index function $\hat{\beta}' X$ as a balancing score. With a probit or logit model from a sample consisting of individuals receiving either treatment r or treatment s both balancing scores can be estimated. Note when we mention participation probabilities in the remainder they always refer to a participation probability conditional on one of two selected treatments taking place, $D \in \{r, s\}$.

A further requirement is the existence of a *common support* $0 < P(D = r \mid X) < 1$, which means that persons with the same X values have a positive participation probability both of being participants in r as well as in s (Lechner 2000).

[20] Lechner (2001) provides the proof for the identification of the average treatment effect on the treated in a multiple treatment framework and discusses the related issues on identification and the balancing score for a propensity score approach and hence the approach that we follow.

Furthermore, the distributions of the probabilities of participating in r for participants in r and for participants in s, $P(D = r \mid X, D = r)$ and $P(D = r \mid X, D = s)$, have to *overlap*. The ATT is only identified, if for any given value of $P(D = r \mid X, D = r)$ there are individuals receiving treatment s with the same value of the propensity score $P(D = r \mid X, D = s)$ (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 receiving treatment s (from a waiting group or from an alternative treatment) is defined as follows

$$\hat{\tau}_{ATT}^{r,s} = \frac{1}{N_{treated}} \sum_{i \in treated} \left[Y_i^r - \sum_{j \in matched\ controls\ of\ type\ s} w_{ij} \cdot Y_j^s \right], \qquad (4)$$

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

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

$$w_{ij} = \frac{1}{N_{i,matched\ controls\ of\ type\ s}} \qquad (5).$$

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 across individuals of a treatment group. 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).

6 Data and implementation

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

We use rich administrative data of the German Federal Employment Agency that are made available for research by the Institute for Employment Research. They contain individual information collected in local job centres and employment agencies[21] 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).[22] 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, we have 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 the '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 household.[23] Furthermore, we included regional (district level) information on the labour market, such as the un-

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[21] 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, but register at the employment agency.

[22] For a description of the IEB see Oberschachtsiek et al. (2009). They describe a public use file with a random sample of persons represented in the IEB, the IEBS. Our sample was drawn from an IEB version containing the entire population.

[23] 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).

employment rate, share of long-term unemployment and the vacancy-unemployment ratio and inflow rate into 1EJs in April 2005.[24] Additionally, we included binary indicators reflecting a classification of districts according to their labour market performance by Rüb and Werner (2008). To give an overview which variables we included in the selection equation, we display the probit estimation results for the selection into 1EJs compared with waiting (Table 8). 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 similar with respect to such personal characteristics. In our context it is very important that we can control for the composition of the household, e.g., whether a person lives with a partner and the number of children. The reason is that we study outcomes on welfare receipt of poor households; whether a household receives the benefit depends certainly on its composition.

A 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.[25]

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

[24] These data were drawn from regional data bases of the Department of Statistics of the Federal Employment Agency.

[25] Heckman/Ichimura/Todd (1997, p. 612) emphasise 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 observations from potential control groups that belong to small scale job centres, in which the type of treatment that is studied does not take place from May to July 2005.

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 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.[26]

Furthermore, we also study whether JCS or WOCJ participation is more effective than 1EJ participation which is 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.

We computed for the waiting group 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 without treatments by one of the other two programmes between May and July 2005.

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 we consider. The size of the treatment groups ranges from less than 200 treated (WOCJs, 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 we have only 4.6 potential 1EJ comparison persons for East German men and six for East German women. In the other cases the data contains 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

[26] Moreover, we deleted a few observations with missing values on the outcome variables in the period under review and a few individuals with missing covariate values. If for a covariate many observations were characterized by missing values, they were not deleted from our sample. In such a situation we introduced a dummy variable that controls for the missing code of the covariate, e.g., we control for missing information on vocational education.

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 JCSs or into WOCJs 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. The share of young people among the participants is in many cases 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 1EJs and WOCJs.

The age distribution of the JCS participants 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, JCSs target strongly older unemployed welfare recipients: 30 % of JCS participants are older than 50 years, whereas in West Germany it is only 12 % (men) to 15 % (women). The higher share of persons aged 51 and more in East Germany compared to West Germany can also be found for 1EJs and WOCJs. 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 were 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 WOCJ 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 a 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.

The average (equivalent) benefit levels in April 2005 differ only slightly between the waiting group and the programme participant groups. 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 are important 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 JCSs 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 WOCJs 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 WOCJs 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 WOCJs 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 JCSs and WOCJs 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 and thus may not matter that much for explaining differences of programme impacts in our context.

Table 7 displays descriptive statistics on monthly wages in JCSs and WOCJs. The 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, the first decile gives 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 JCSs. 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 WOCJ participants in West Germany, it is likely that to some extent the policy was implemented for young participants according to rules of JCSs. 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.

6.3 Implementation

In order to estimate the treatment effects on the treated by propensity score matching, we first estimated probit models for each pair wise comparison (as displayed in Table 4) with the treatment status as the dependent variable. For the comparisons to waiting, the dependent variable is equal to one for a specific treatment like JCS participation starting between May to July 2005 and zero for the waiting group (as defined in section 6.2.1). For the comparison to 1EJ participants, the dependent variable was one for JCS- or WOCJ-treatments starting in that period and zero for the comparison group of 1EJ-participants in that period. We estimated models for each comparison for four subgroups, men and women in East or in West Germany, separately.

In each application, we used the large set of covariates as described in section 6.1 to control for characteristics that may both influence the participation probability and the outcomes under study. We chose to exclude some covariate sets from the participation equation, if they were highly insignificant according to Wald tests. However, this choice was limited to different covariates characterizing past performance in the labour market like covariate sets on duration of unemployment and on duration of receipt of some unemployment benefit that might be highly correlated with each other. In a similar way we proceeded with covariates that characterize the situation of the regional labour market. Though, we always made sure that at least some covariates on past labour market performance and the region were included as determinants of a participation equation. Table 8 displays as an example the coefficients of the probit models for participation in 1EJs versus waiting. Results of the other probit models are available on request.

From these results we predicted the propensity scores, where we used the product between the coefficient vector and the covariate vector of a probit model as our propensity score. In our net impact analysis we used first of all radius matching as discussed in section 5. The calipers in the different applications are not chosen arbitrarily. We chose them in each application as the 99th percentile of the (absolute) differ-

ences between propensity scores of treated and matched controls that resulted from nearest neighbour matching with one neighbour and with replacement. We also apply various nearest neighbour matching estimators to check for the robustness of our radius matching results, e.g., nearest-neighbour matching with five neighbours and replacement and with different calipers. As the results on net impacts are robust over various matching algorithms we present just the results achieved with radius matching. Among the different algorithms. radius matching achieved the best balancing between treatment and comparison groups. Let us turn next to the issue of balancing.

In Section 6.2.2 we learned that the treatment groups and the group of potential controls differ considerably with respect to several (pre-treatment) characteristics. Did our matching approach do a good job in balancing the differences between the groups? To assess the matching quality considered 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.[27]

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 9 displays the MSB before and after matching for the different comparisons between the three programmes and waiting and between the comparison of JCS and WOCJ and the 1EJ-programme. Prior to matching, the MSB is for all our groups 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 % (WOCJ 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-R^2 of the probit selection equation for a sample prior to matching and after matching. After matching, the pseudo-R^2 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.

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[27] For a single covariate the standardised absolute bias formula is $100 \cdot \left| \left(\overline{X}_{treated} - \overline{X}_{controls} \right) / \sqrt{0.5 \cdot \left[V\left(X_{treated} \right) + V\left(X_{controls} \right) \right]} \right|$, 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.

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.

Apart from balancing there is another issue important issue for Propensity Score Matching. We have to assume that a common support and overlap exist, implying 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 pair wise 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 on the quality of our propensity score matching, the pseudo-R^2 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.

7 Results on impacts of participation

In this section, we discuss our estimation results on net impacts of programme participation. We regard first of all impacts on the outcome 'unsubsidized contributory (regular) employment', as the welfare benefit regime emphasizes bringing welfare recipients into work (7.1). Bringing them into work should raise their earnings prospects and reduce their welfare dependency. However, as participation is not necessarily voluntary, it could also decrease reservation wages of participants leading to lower accepted wages and thus to lower earnings and increased welfare receipt. Therefore, we also consider annual earnings (7.2) and welfare receipt (7.3) as additional outcomes.

7.1 Effects on employment

We start our discussion of the estimated treatment effects with the net impacts on two different employment outcomes. First, this will be the share of people in (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).

Figures 1 and 2 shows 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) her matched control group. Table 10 displays for the 36th month after programme start additionally corresponding gross outcome values, i.e., the share of regularly employed among the matched controls, which characterizes the labour market performance of a treatment group without getting the specific type of treatment. It also displays this share for all potential controls from which the matched controls were selected; a comparison between these two shares answers the question to what extent the treated are a positive or a negative selection of unemployed welfare recipients.

In Figure 1 we display estimated net impacts for the participants in JCSs 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 West German participants. For JCSs, 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. As the planned duration of JCS participation is somewhat longer than for 1EJ participation (see Table 6), we would expect lock-in effects for JCS participants to be stronger than those for 1EJ participants. However, this only holds for men and the difference is strongest for West German men. The reason for this result could be that West German male JCS participants have considerably higher employment prospects without participation than the West German male 1EJ participants: the employment share of matched controls for JCS participants three year after programme start is at 27.4 % nearly 3.4 percentage points higher than for the matched controls of 1EJ participants (Table 10).

For women the lock-in effects of the two programmes hardly differ during the first months after programme start. This comes as a surprise, as for female JCS participants the average planned length of participation is 0.7 months higher than for female 1EJ participants in East Germany and 1.7 months in West Germany (see Table 6). Hence, there was reason to expect lock-in effects for female JCS participants to exceed those of 1EJ participants. However, in terms of expected labour market performance without participation female JCS participants differ little from their counterparts participating in 1EJs (see the employment rates of matched controls in Table 10).

More than four to five months after programme start the net impacts of JCSs (versus waiting) increase. Positive and significant net impacts on the employment rate emerge a bit more than one year after the participation started for women. These net impacts still tend to rise 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 after three years for East German males 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 net impact after the initial lock-in effect is not strong enough to reach the zero line. For women instead we do find positive impacts both for East German and West German 1EJ participants. However, these impacts are smaller and for West German women far smaller than the estimated net employment impacts for JCS participants.

The estimated average net impacts of WOCJ 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 groups of participants. Our estimates imply lock-in effects for WOCJs with a magnitude similar to our findings for JCS participants. But net impacts start to rise earlier and more strongly. Consequently, positive net effects on the employment rate emerge one year after WOCJ participation started. For East Germans and West German men they are most of the time higher than the net impacts of 1EJs and also of JCSs on the employment rate of participants.[28]

As disincentives to take up jobs and hence lock-in effects may be higher for JCS and WOCJ participants that achieve a relatively high wage, we also estimated the employment impacts of these two programmes for those participants who at least achieved 850 € of monthly gross earnings in their subsidized job. We chose this limit, since it is higher than a welfare benefit and for most participant groups somewhat lower than the median wage in their subsidized job (see Table 7). We had to limit this analysis to East German participants, since for West Germany the number of participants earning 850€ or more is already quite small. The estimated net employment impacts for these more limited participant groups though differ by little from the results that we already presented (results are available on request). For this reason, at least for East Germany we cannot conclude that higher wages while on the subsidized scheme also imply higher disincentives to take up regular jobs.

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[28] One of the reasons for WOCJs having larger employment impacts than JCS could be the fact that subsidizing commercial jobs is possible. Statistics on the economic sector of the subsidized employment spells of our sample demonstrate clearly that the sectors where JCS and WOCJ-participation takes place differ. For JCS the main economic sectors are the primary sector with about 15 % of participants, more than 60 % of participants work in public administration, defence and social security agencies, health and social work or other services. The corresponding numbers for WOCJ are 3 % for the primary sector and 38 % for the other sectors we mentioned. WOCJ participants very frequently work in the education sector (in particular education for adults) with about 43 % of participants. This sector accounts only for about 9 % of the JCS participations in our sample. Hence, there is some clear difference in the sectoral composition of subsidized jobs for JCS and WOCJ participants.

The impacts discussed so far are only relevant for the specific participant groups. WOCJ participants in general and West German male JCS participants are a considerably better selection from the pool of unemployed welfare recipients than 1EJ participants, as the differences in employment shares of their matched controls in Table 10 demonstrate. Thus we cannot yet infer whether for JCS or WOCJ participants a 1EJ-treatment instead would have been rather worse or better for improving employment perspectives. By estimating the impacts of these two programmes in a 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 JCSs and WOCJs compared with the 1EJ alternative. Yet, this negative impact during the first few months after programme start is frequently not well-determined. This confirms that it is rather the participant group than programme characteristics (such as wage and duration) leading to larger lock-in effects of JCS and WOCJ participation compared to waiting.

Moreover, for participants in WOCJs the treatment leads to employment outcomes clearly superior to 1EJ participation from about eight months after programme start onwards. Only for West German women, we cannot make such a statement as the net impacts are frequently insignificant. Similarly, we often find for JCS participants 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 except for West German males. Taken together our results imply that 1EJ participation often would have been an adverse alternative for JCS and WOCJ participants.

The average treatment effects on the treated with respect to our second employment outcome, months in regular employment up to the end of each of the 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 a 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 JCSs as East German men pass 0.4 months and West German men 0.5 less in regular employment than without participation. Until the second year after programme start, the estimated impacts are still negative and mainly significant for men in JCSs and 1EJs 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 WOCJ scheme already leads to considerable employment gains with of an order or magnitude of up to one month additional regular employment due to participation. The net impacts still tend to increase until the end of third year after the programme participations started. The comparison between JCSs or WOCJs and 1EJs in the last four rows of Table 12 of again confirms that in nearly all cases 1EJ treatment would be the worse alternative.

7.2 Effects on annual gross earnings

Let us next turn to the impacts on real annual gross earnings from any type of employment (hence including minor employment and subsidized employment) achieved in the years 2005, 2006 and 2007.[29, 30] Table 13 shows the estimated net effects for this outcome.[31] We include earnings not only from regular employment but also from minor and subsidized employment.[32] 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, as almost all subsidized employment participations were completed before that year.

The estimation results versus waiting in Table 13 (first four rows) show that JCSs and WOCJs 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 1EJ participants in sharp contrast, the estimated net earnings effects for 2005 and 2006 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, most of the analysed groups of participants in JCSs and WOCJs still considerably benefit in terms of a positive effect of their participation on earnings. For JCSs the impact on gross earnings is lowest at 160 € for East German male participants and highest for West German female participants with roughly 1,660 €. Also the net effects of WOCJs are lowest for East German men at 550 €. The estimates for West German males imply the largest impact with still a considerable 1,890 € 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

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29 When we carried out the analysis, earnings information for 2008 was not yet available in the data, though we already had employment status information for 2008.

30 We do not regard effects on wage rates. First of all, the data provided by employers do not contain information on hours worked. Thus, we cannot compute an hourly wage rate. Second, to study impacts on wage rates an additional selection problem has to be taken into account, as wage rates can only be observed, if a welfare recipient finds a job during the observation window. The earnings variable instead can be zero, if a welfare recipient does not work at all during a year considered in the analysis.

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

32 However, the allowance for additional expenses paid during 1EJ participation is included neither in earnings nor in the amount of benefit receipt.

reduction of 176 €. Hence, participants in 1EJs profit much less from their participation by improved earnings perspectives than participants in the two programmes that subsidize contributory jobs.

Let us still directly compare JCS and WOCJ 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 JCSs and WOCJs 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 WOCJ participants is close to zero and insignificant. Yet, this result refers to a very small group of only 170 participants so that we cannot be quite confident about it.

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

7.3 Effects 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 impact on the monthly rate of welfare receipt (Table 14) and on the average real monthly equivalent welfare benefit in each of the first three years after entering the employment scheme (Table 15). We deflated the welfare benefits in the same way as earnings.

After six months the estimated net impact for JCS participants implies a 25 up to more than 31 percentage points increased probability of not being dependent on the UB II benefit (Table 14). This range is similar for the WOCJ 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 JCSs and WOCJs 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 participating in the programme.

Three years after programme start and hence usually more than two years after programme participations ended, the implications are different: The net impacts of JCSs and WOCJs on the probability not to receive UB II are mostly not well determined. Only two impacts differ significantly from zero: For East German men, JCS participation implies a reduction of the probability of not depending on UB II of about one percentage point. For West German male participants in the WOCJ scheme there is instead a 7.6 percentage point rise of the perspective not to depend on UB

II. Nevertheless, for JCS and WOCJ 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. Moreover, the last four rows demonstrate that 1EJs would be the worse alternative for participants in JCSs and WOCJs. 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.

7.4 Robustness of results

Apart from applying different matching algorithms as mentioned in section 6, we carried out several additional 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 participation. 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 here, but they are of course available on request.

We also checked robustness by comparing the effects to results from propensity score matching combined with exact matching on three variables. We considered exact matching with respect to the composition of the household, which matters for welfare dependency.[33] Moreover, we considered labour market performance for exact matching. Therefore, we exactly matched according to the sequence of welfare benefit receipt during the months January to April 2005 (e.g., a treated person that received the benefit in January and April only was matched to a comparison person with the very same sequence of welfare receipt). Finally, the third variable was the regular employment success during each of the three quarters prior to April 2005 (e.g., a treated person with one month of employment in the first, two months

[33] For this procedure, we chose the household type options single, lone parent, married couple without children, unmarried couple without children, married couple with one child, married couple with more than one child and unmarried couple with at least one child, since the welfare benefit is means-tested and the household composition matters for eligibility for welfare benefit. We chose the other two indicators for exact matching, since they might be related to individual talents.

of employment in the second and no month with any employment in the third of these quarters could only be matched to a comparison person with the very same sequence of employment). The results are mostly stable over the different matching procedures.

Furthermore, we carried out 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 subsidized jobs, which are mainly additional jobs of public interest, for persons with severe difficulties of finding a job. The schemes are multipurpose: 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: traditional JCSs, 1EJs and WOCJs. 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 WOCJs with 1EJ participants. The analyses were carried out separately for men and women in East and in West Germany.

According to the 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, our results indicate that under the new mutual obligation regime these programmes bring welfare recipients into regular jobs. In particular, this also holds for JCSs, for which recent studies of Caliendo, Hujer and Thomsen (see section 4.1.1) that regard periods before the introduction of the new welfare benefit system in 2005 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 par-

ticipant 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 JCSs 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 JCSs and WOCJs are not much stronger than those found for 1EJs. Hence, they point towards small disincentive effects. However, this is no surprise given that the median and average gross wages earned in JCSs and the WOCJs are only slightly 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 WOCJs 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 the number of participants in these programmes is limited. 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 JCSs or WOCJs as opposed to 1EJs. Second, employers may put more effort into improving the employability of participants. If due to some selectivity JCS or WOCJ participants are more productive workers than 1EJ participants, employers might have a reason to put more effort into signalling success of the two programmes to job centres. According to our results, at least WOCJ participants are a selection of welfare recipients with a better labour market performance than 1EJ participants. 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 these types of programmes are not successful in some situations. JCSs and 1EJs are ineffective for East German male participants. This also

holds for West German men participating in JCSs. 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 JCSs and WOCJs. The positive impacts on annual earnings are just not sufficiently high to reduce their welfare benefit considerably.

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List of abbreviations

1EJ	One-Euro-Job
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
WOCJ	work opportunity as contributory job

Appendix

Tables

Table 1
Inflow into different schemes of direct job creation and the stock of unemployed receiving UB II from 2005 to 2009 (in 1,000)

	2005	2006	2007	2008	2009
Inflow into job creation schemes[1)]					
Total	61.6	62.4	50.1	60.4	-
East Germany	51.1	52.3	41.2	53.0	-
% female	39.3	40.0	40.4	40.8	-
West Germany	10.4	10.1	8.9	7.4	-
% female	31.2	32.6	32.3	33.3	-
Inflow into One-Euro-Jobs					
Total	603.9	704.5	667.1	643.7	596.1
East Germany	287.9	298.0	265.9	263.7	241.5
% female	44.9	44.6	44.5	45.1	43.8
West Germany	316.0	406.5	401.2	380.0	354.6
% female	34.2	35.0	36.9	38.5	37.3
Inflow into work opportunities as contributory jobs					
Total	25.9	37.4	36.5	52.0	85.1
East Germany	16.3	19.5	16.7	22.1	55.1
% female	41.6	41.9	42.1	41.1	40.9
West Germany	9.6	17.9	19.8	29.9	30.0
% female	36.3	32.4	32.2	35.1	33.8
Average stock of unemployed UB II recipients					
Total	2,402.0	2,444.0	2,188.3	1,963.7	1,946.1
East Germany	834.0	847.2	781.4	695.7	685.3
% female	45.2	44.9	46.0	46.5	45.2
West Germany	1,568.0	1,596.8	1,407.0	1,268.0	1,260.7
% female	43.7	45.4	47.5	48.5	46.9

1) In 2009, traditional job creation schemes have been limited to unemployment insurance benefit recipients.

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
	Total expenditure (in 1,000 €)			
Job creation schemes	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
	Expenditure per participant and month (in €)			
Job creation schemes	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 (2005 to 2008)

	Job creation schemes (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.
Target group	Mainly for people with severe difficulties of finding regular jobs.		
Financial support for employer/ organiser of participation	Lump sum wage subsidy of 900 to 1,300 € per month for full-time jobs depending on the qualification of the participant.	• The SC II does not specify the level of the subsidy. • Monthly lump sum subsidy that should cover programme costs.	• The SC II does not specify the level of the subsidy. • The subsidy should compensate employers for the lower productivity of the participant and cover costs of organising the participation.
Type of employment	• Contributory jobs paying a regular wage to the participant, no UI contributions. • Jobs have to be additional and of public utility (non-profit-sector).	• No contributory jobs, participants receive their UB II and 1 to 2 € 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 (including UI contributions). • Mainly but not necessarily jobs that are additional and of public utility.
Duration of participation	• Maximum of 12 months. • In specific cases 24 or 36 months.	• No maximum set under SC II. • Usually no longer than six to seven months.	• No maximum set under SC II. • In practice, duration constrained to less than 12 months.
Other	• In specific cases, the subsidy can be more generous. • For young participants participation subsidies and wages can be lower to leave an incentive for starting an apprenticeship.		

Table 4
Number of participants and controls in the sample

	JCS			1EJ			WOCJ		
	Treated	Controls	Controls per Treated	Treated	Controls	Controls per Treated	Treated	Controls	Controls per Treated
Versus Waiting									
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
Versus 1EJ-participation									
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				1EJ				WOCJ			
	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women 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 €)	688	635	725	688	656	597	691	705	678	634	724	716	681	607	680	644

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				1EJ				WOCJ			
	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women West	Men East	Women East	Men West	Women 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 the sample (in months)

	East Germany		West Germany	
	Men	Women	Men	Women
	JCS			
1st 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
9th decile	12.0	12.0	12.0	12.0
	1EJ			
1st 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
9th decile	9.1	10.5	10.0	10.0
	WOCJ			
1st 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
9th 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
	JCS				*JCS*			
# of obs.	6,542	4,085	694	291	5,577	3,667	445	197
1st 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
9th decile	1,091	1,074	1,378	1,338	1,094	1,082	1,516	1,454
	WOCJ				*WOCJ*			
# of obs.	967	518	283	140	672	357	172	86
1st 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
9th 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 or WOCJ spell have to be identified by comparing their start dates. The statistics in this table only refer to JCS or WOCJ 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	
Age in years								
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	***
Nationality								
Germany, no mig. background	Reference							
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	***
Familiy background								
No Partner	Reference							
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	***
Vocational education / training								
no sec. schooling degree, no voc. training	Reference							
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	
Duration of unemployment in year before 30/04/2005								
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	***
Duration of unemployment between 01/05/2000 and 30/04/2004								
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	
Cum. dur. out of labour force 01/01/04 - 31/12/04								
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	***
Cum. dur. out of labour force 01/01/00 - 31/12/03								
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	
Cum. dur. of UI/UB I receipt in year before 30/04/05								
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	
Cum. dur. of UB I receipt 01/05/00 - 30/04/04								
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			
Cum. dur. of UB II receipt before 30/04/05								
<=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	***		
Cum. dur. of regular unsubsidized employment spells in 5 years before 30/04/05								
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	***
Cum. dur. of minor employment spells in 5 years before 30/04/05								
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	
ALMP participation in the last 5 years								
Job Creation Scheme	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	***
Time since end of last ALMP								
me	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	*
Number of ALMPs during last five years								
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	**
Professional status in last job								
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	
Last monthly gross real wage (deflated with CPI, 2005=100)								
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	**
Time since end of last contributory job								
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	**
Number of contributory jobs in last 5 years								
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	
Cum. dur. of unemployment of partner 01/05/00 - 30/04/05								
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	
Cum. dur. out of labour force of partner 01/01/00-31/12/04								
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	
Cum. dur. in regular employment of partner 01/01/00 - 31/12/04								
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			
Labour force status of partner on 30/04/05								
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			
Industry of last contributory job								
missing sector	-0.124	***	-0.049	**	-0.063	***	-0.028	
primary and secondary sector	0.068	***	0.039		0.136	***	0.070	
Food and tobacco industries	0.005		-0.109	***	-0.034		0.020	
Wood, paper, print/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	
ln of OECD equiv hh-income in April 2005								
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	
Labour market types (Rüb/Werner, 2008)								
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 dynamics					-0.031		-0.053	*
Rural areas in West G. with very favourite LM conditions, seasonal dynamics + low LTU					0.067	***	0.051	
Rural areas in West G. with very favourite LM conditions, low LTU					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 conditions	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								
Regional variables (district level)								
local unempl. rate in 04/05	0.012	***	0.021	***	0.000			
%age change local unempl. rate 04/04-04/05	-0.014	***	-0.013	***	0.001		-0.002	
percentage of long-term unemployment 04/05	-0.014	***	-0.017	***	-0.003	***	0.001	
%age change percentage of long-term unemployment 04/04-04/05	0.005	***	0.000		0.002	***	-0.002	
vacancy-unemployment ratio 04/05	1.052	**	0.173		-0.290	***	-0.001	
%age change vacancy-unemployment ratio 04/04-04/05	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	***
Constant	-1.075		-1.521		-1.842		-2.057	
Number of observations	139,953		113,891		227,369		157,544	
McFadden's Pseudo-R^2	0.0675		0.0622		0.0749		0.098	

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

Table 9
Match quality – Mean Standardized Absolute Bias

	JCS		1EJ		WOCJ	
	Before Matching	After Matching	Before Matching	After Matching	Before Matching	After Matching
	Versus Waiting					
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
	Versus 1EJ-participation					
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 10
Regular employment rates of all and of matched controls 36 months after programme start (in %)

	JCS		1EJ		WOCJ	
	Controls before Matching	Controls after Matching	Controls before Matching	Controls after Matching	Controls before Matching	Controls after Matching
	Versus Waiting					
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
	Versus 1EJ-participation					
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 11
Net effects on regular employment rate 6 and 36 months after programme start (in percentage points)

	JCS		1EJ		WOCJ	
	6 mths	36 mths	6 mths	36 mths	6 mths	36 mths
	Versus Waiting					
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
	Versus 1EJ-participation					
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
Net effects on number of months in regular employment during the 1st, 2nd and 3rd year after programme start

	JCS			1EJ			WOCJ		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
	Versus Waiting								
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*
	Versus 1EJ-participation								
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	0.60***	0.94***	.	.	.	0.24	0.51	0.19

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

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

	JCS			1EJ			WOCJ		
	2005	2006	2007	2005	2006	2007	2005	2006	2007
	Versus Waiting								
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*
	Versus 1EJ-participation								
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
Net effects on the probability not to receive UB II 6 and 36 months after programme start (in percentage points)

	JCS		1EJ		WOCJ	
	6 mths	36 mths	6 mths	36 mths	6 mths	36 mths
	Versus Waiting					
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
	Versus 1EJ-participation					
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.

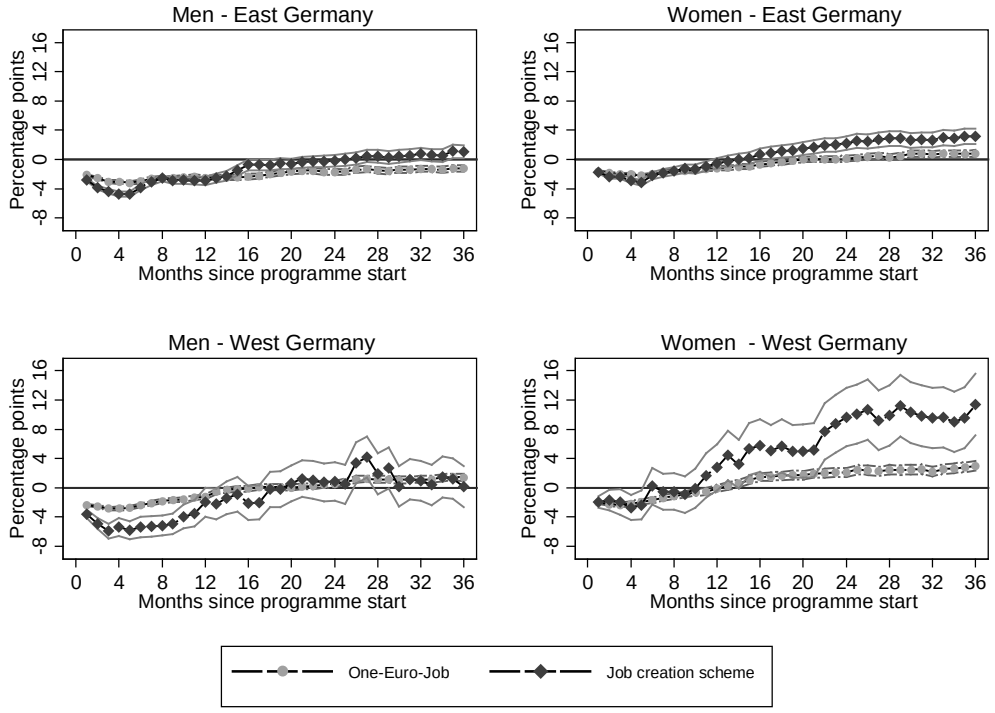
Table 15
Net effects on monthly average real equivalent UB II receipt in 1st, 2nd and 3rd year after programme start (in €)

	JCS			1EJ			WOCJ		
	1st	2nd	3rd	1st	2nd	3rd	1st	2nd	3rd
	Versus Waiting								
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
	Versus 1EJ-participation								
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.

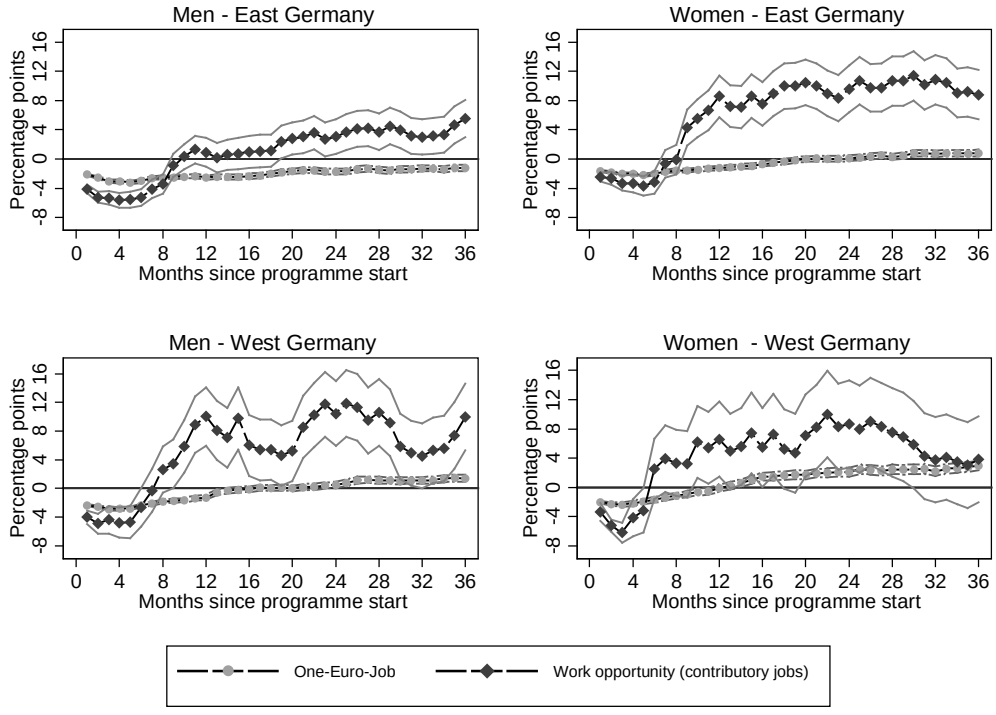
Figures

Figure 1
Net effects on regular employment rates of 1EJ- or JCS-participation compared with waiting[1)]



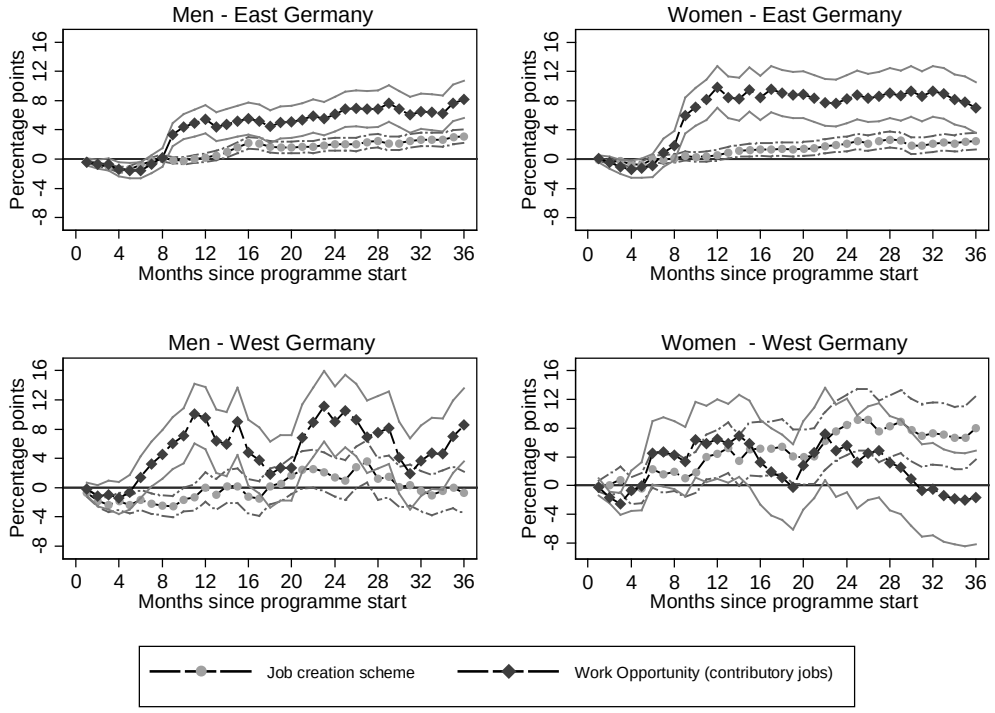
1) Effects are displayed together with 90% confidence bands.

Figure 2
Net effects on regular employment rates of 1EJ- or WOCJ-participation compared with waiting[1)]



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

Figure 3
Net effects on regular employment rates of JCS- or WOCJ- participation compared with 1EJ-participation[1)]



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

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