

Heterogeneous Effects of One-Euro-Job Participation by Sector of Employment in Germany

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Abstract:

In the course of the introduction of a major reform of the German means-tested unemployment benefit system in 2005, a workfare programme was implemented at a large scale: the so-called One-Euro-Jobs providing temporary work in non-profit sectors. Participation in this programme should enhance the employability of welfare recipients that are hard to place. Participants receive their benefit and usually 1 to 2€ per hour worked. Using administrative data for participants who entered the programme in spring 2007 and a group of potential controls we estimate with methods of propensity score matching effects of One-Euro-Job participation up to six years after programme start on regular employment, unemployment benefit receipt and annual earnings of the participants. We study effect heterogeneity with regard to seven sectors, in which One-Euro-Job participation can take place: 1. environment protection and rural conservation, 2. infrastructure improvement, 3. health care, 4. child care and youth welfare, 5. counselling services, 6. art, culture and sports and 7. education and research. Positive employment and earnings effects emerged for West German male participants in the sectors art, culture and sports as well as education and research. According to the results, it is important to assign welfare recipients to One-Euro-Jobs in sectors with a considerable rise in labour demand: The results show that relatively high positive employment and earnings effects emerge for female participants in sectors, in which a substantial rise in labour demand can be observed during the six years after programme start like health care and child care and youth welfare.

Keywords: welfare recipients, activation, workfare, propensity score matching

JEL classification: J68, C14, I38, H43

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1 Introduction

With the reform of the year 2005 Germany implemented a new means-tested benefit system. The unemployment benefit II (UB II) under the “Basic Income Support for Job-Seekers” replaced the former means-tested unemployment assistance and social assistance. A mutual obligations system was implemented, according to which welfare recipients who are capable of working need to take actions to reduce or end their dependence on welfare. The public employment services (PES) are supposed to assist them in their efforts by job search assistance and suitable active labour market programmes (ALMPs). The new system emphasized the activation of all working age members of the welfare recipient households who are capable of working.

Traditional welfare systems and employment policies were not concerned with intensive support for people who were detached from the labour market. They rather concentrated on passive income support and on helping people who were temporarily unemployed (OECD 1999: 10) and this was similar in Germany prior to the Hartz reforms. With these reforms Germany followed advice of the European Commission to European governments to foster active rather than passive measures (European Commission 1999). In contrast to the previous system the new “Basic Income Support for Job-Seekers” (Hartz IV) emphasized that people who are hard to place and who never or who for extremely long periods did not participate in the labour market should raise their employability and contribute to reducing welfare and in turn needed to address their specific needs. One ALMP, work opportunities or One-Euro-Jobs, was implemented on a large scale to assist people who in the short or medium term are unlikely to be placed into work, training or other ALMPs.

The One-Euro-Job programme is a workfare programme creating temporary, usually part-time jobs, in which the participants receive their welfare benefit plus a small compensation for costs of working (one to two Euros per hour worked). The work has to be in the public's interest. Through participation in this programme the most disadvantaged welfare recipients should find their way back into the labour market or at least into other ALMPs that prior to One-Euro-Job participation would not yet have been suitable to help them improve their employability.

Participation should help participants to get used to work and improve their employability and well-being through some important functions of work (Jahoda 1981, Warr 1987) like time structure, regular shared experiences and contacts with people outside family, externally generated goals, etc. A key issue is whether different types of work are more or less well suited to achieve this for particularly disadvantaged groups of people. Therefore, this study regards the effectiveness of One-Euro-Job participation according to the sector/field of work, in which participation takes place. Only a few studies (e.g. Hujer et al. 2004) have addressed

this question yet. Participation effects may be expected to be heterogeneous across sectors for several reasons. On the supply side, One-Euro-Job participants assigned to different fields of employment might differ on average with regard to relevant individual characteristics influencing their labour market prospects, e.g. unemployment duration or educational attainment. Moreover, different work activities in sectors may provide specific work experiences which raise participants' level of employability to different extends. However, improvements in participants' employability and sector-specific work experiences may only result in augmented employment chances if a sufficient demand for labour in related fields of work exist at the job market. Furthermore, other relevant conditions of the labour market environment might mediate the employment effects of One-Euro-Jobs, e.g. norms of female or male dominated work in certain sectors (Busch 2013).

We study a sample of welfare recipients who were registered as unemployed at the end of March 2007. Our treatment group of One-Euro-Job participants are all those from this sample who entered a One-Euro-Job from April to June 2007. As a potential control group we use a 20 per cent random sample of all those unemployed welfare recipients at the end of March 2007, who did not enter a One-Euro-Job in the second quarter of 2007. We chose this time period because One-Euro-Jobs are supposed to target particularly disadvantaged welfare recipients and might consequently achieve their full impact only in the longer run; currently we can observe outcomes like working in regular jobs or being on welfare receipt of the treated for up to six years after the second quarter of 2007. We estimate the effects of One-Euro-Job participation on the outcomes of participants by applying methods of propensity score matching. Hence, we choose matched controls from the potential control group that resemble participants with respect to determinants of their labour market performance and compare their performance after programme start. The analysis estimates such effects for men and women in East and in West Germany separately. Moreover, we estimate the effects separately for participants in each of the following sectors: 1) Environment protection and rural conservation, 2) infrastructure improvement, 3) health care, 4) child care and youth welfare, 5) counselling services, 6) art, culture and sports, and 7) education and research.

The paper is structured as follows. Section 2 describes in more detail the institutional background of the One-Euro-Jobs programme. Previous research on the effectiveness of One-Euro-Jobs and studies of different programmes that are concerned with effect heterogeneity according to the type of work is discussed in section 3. Section 4 describes the method applied to estimate the treatment effects on the treated. In section 5 the data source and our sample are presented. Section 6 discusses our results, while section 7 presents a summary and conclusions.

2 One-Euro-Jobs under a mutual obligation system

One-Euro-Jobs became a very important active labour market policy when a new welfare benefit regime in 2005 came into force that emphasized the integration of welfare recipients into work and introduced a mutual obligation system. One-Euro-Jobs are work opportunities that pay participants on top of their welfare benefit one to two Euros per hour worked to compensate them for costs of working. As participants do not receive a wage they still have a considerable incentive to continue searching for regular jobs during their One-Euro-Job participation. Increasing the employability of participants so that their chances to find regular Jobs and social integration were key aims of One-Euro-Job participation (Federal Employment Agency 2005). "One-Euro-Job participation should enhance the participants' employability by fulfilling the psychosocial functions of work, partly by acclimating labour market outsiders to regular work" (Tisch/Wolff 2015: 20). Moreover, job centre staff could also consider an assignment of a welfare recipient into a One-Euro-Job to test the person's willingness to work. Finally, working in One-Euro-Jobs was also viewed as a participant's return service to the society for receiving the means-tested benefit, which is financed by taxes.

One-Euro-Jobs are regarded as a programme of last resort (Federal Employment Agency 2005). If placement services, the participation in training or other programmes would be suitable to help a welfare recipient to raise employment prospects, caseworker should not assign a person to a One-Euro-Job participation. Hence, One-Euro-Jobs are a programme that should target welfare recipients who without this type of treatment could not successfully raise their employment prospects. It was designed as a programme for those welfare recipients who are characterised by very strong employment impediments. All this holds in our observation window for the inflow in One-Euro-Jobs during some months in 2007 but also generally since the introduction of the Basic Income Support for Job-Seeker as the new welfare benefit system in the year 2005.

Participation in One-Euro-Jobs is mandatory and welfare recipients who refuse to participate or drop out of the programme without a good reason face a benefit sanction that lasts for three months. One-Euro-Jobs are temporary jobs available for welfare recipients and they have to be jobs in the public's interest and hence are provided by the non-profit sector (Hohmeyer/Wolff 2012). In the years 2005 to 2015 70 to 75 per cent of participations were characterised by a planned duration of at least one month up to less than seven months.¹ The programme resembles other programme that are (or were) in place in other countries, like the

¹ Source: Statistics Department of the German Federal Employment Agency; the statistics refer to job centres that are not run entirely by municipalities ("zugelassene kommunale Träger", Approved Local Providers - ALP) but jointly by municipalities and the Federal Employment Agency. The latter were according to statistics of the Statistics Department of the German Federal Employment Agency responsible for about 87 per cent of the unemployed welfare recipients in the year 2007, during which our sample is drawn.

Australian “work for the dole” programme or the Swedish work experience placement (arbetslivsutveckling) (Tisch/Wolff 2015).

One-Euro-Jobs can refer to a wide range of work activities. Typical fields of work for programme participants are supportive care activities in the non-profit sector (e.g. assisting with leisure activities in nursing homes or childcare facilities), manual and technical jobs in municipalities (e.g. maintaining public parks), work opportunities in non-profit organizations (e.g. child and youth care at youth centres), manual occupations in non-profit workshops (e.g. restoration and sale of furniture) and work for highly qualified persons (e.g. administrative activities and IT services) (Sowa et al. 2012). Moreover, for persons with multiple placement handicaps who have a special need for support, work opportunities with intense social pedagogical assistance exist. From the available local stock of work opportunities, case managers can choose suitable One-Euro-Jobs for their clients at the job centres.

Table 1: Unemployment stock and inflow into One-Euro-Jobs of unemployed people receiving UB II from 2007 to 2015 (in 1,000)¹⁾

	2007	2008	2009	2010	2011	2012	2013	2014	2015
Annual unemployment stock of UB II recipients	2,515	2,253	2,225	2,163	2,084	1,995	1,981	1,965	1,936
Inflow into One-Euro-Jobs									
Total	565	560	534	482	318	248	192	180	151
East Germany	259	261	245	218	138	121	101	92	77
% female	44.3	44.8	43.4	42.9	43.0	42.2	40.1	41.0	41.0
West Germany	306	298	289	264	180	126	91	88	75
% female	36.1	37.8	36.4	36.2	37.1	36.8	36.1	35.9	36.3

1) With data from all job centres; the years 2005 to 2006 are excluded because ALP job centres are not yet represented in the data base of the Statistics Department of the Federal Employment Agency.

Source: Federal Employment Agency, Statistical Department

For a while One-Euro-Jobs in terms of case numbers were the most important active labour market programme for welfare recipients: In the years 2007 to 2009 more than 500 thousand unemployed welfare recipients entered the programme, while the unemployment stock of welfare recipients ranged from 2.2 to about 2.5 million people in this period (see table 1). In the years that followed the annual inflow into the programme was reduced considerably. This partly reflected a reform in April 2012. It abolished a rule that specified that immediately after the benefit claim welfare recipients aged younger than 25 years should be assigned into work opportunities, provided that regular jobs or training opportunities were not available to them. However, it also reflected a decreased funding of this programme.

3 Previous Research

3.1 Studies on the effectiveness of One-Euro-Job participation

Due to the large scale of the One-Euro-Job programme and due to its importance as an ALMP that should address the needs of people who are detached from the labour market a number of studies were already concerned with the effectiveness of the programme. Many studies estimated the effects of the programme on the participants' chances of working in unsubsidized contributory jobs and of not receiving welfare receipt. One study also regards effects on earnings and one is interested in effects on self-efficacy. We concentrate the discussion on studies that apply methods to estimated causal effects and that do not focus exclusively a specific group of welfare recipients like those aged younger than 25 years.² In all cases methods of propensity score matching were applied to choose matched controls for the participants from a suitable group of potential controls and estimate the effects on participants. Huber et al. (2011) studied One-Euro-Job participations starting October 2006 and March 2007 and used a combination of a large-scale survey and administrative data. Thomsen and Walter (2010) used an inflow sample into welfare in the year 2006 drawn from administrative data and study effects of the first One-Euro-Job participation. Both studies could only regard a short-time window after programme start (up to one year). That both studies found no beneficial effects on the employment outcomes is not necessarily showing that the programme does not achieve its goals: When studying a programme with participations lasting often around six months with a short time window after programme start the results mainly reflect lock-in effects and a catch-up effect in the months after leaving the programme. But for a programme like One-Euro-Jobs one can expect only longer term positive effects on the employment prospects of participants.

The study of Hohmeyer and Wolff (2012) analysed participation effects on the employment probability using administrative data on One-Euro-Job participations starting between February and April 2005 and a suitable potential control group. They could already regard a time window of 20 months after programme start and hence a considerable period after the end of programme participations. The study always estimated the effects separately for men and women in East and West Germany. It was additionally concerned with effect heterogeneity with respect to personal characteristics: It presents for example estimates for different age groups of participants and different groups of time since last regular employment. The main finding is that One-Euro-Job participation by the end of the observation window of 20 months after programme start tends to affect the employment probability positively for some

² A more comprehensive survey of the literature on One-Euro-Jobs is found in Wolff and Stephan (2013). They discuss studies on One-Euro-Jobs including studies of the relationship between One-Euro-Job participation and life-satisfaction that did not attempt to estimate causal effects. Moreover, papers that are concerned with the question whether One-Euro-Jobs could lead to a loss of regular jobs are discussed.

groups, raising their employment rate by up to six percentage points. However, for some other groups in particular for very young individuals and people who were without a regular job for less than one year and hence not quite detached from the labour market, the estimated effects are near zero or negative even 20 months after programme start.

Hohmeyer (2012) used the same sample as Hohmeyer and Wolff (2012) but a different type of effect heterogeneity. She regarded whether the effectiveness of participation varies with the planned duration of participation (up to 4 months, more than 4 up to 8 months, more than 8 up to 12 months) and working time (1 to 20, 21 to 29 and 30 to 40 hours weekly) in the One-Euro-Job. Again this study estimated effects always separately for men and for women living in East and living in West Germany. The findings show that the magnitude of lock-in effects rises with the planned duration. More working hours in the One-Euro-Job could also lead to stronger lock-in effects of participation as they leave participants less time for job search. But the results for the different working hour groups did not confirm this and show no clear relationship between the magnitude of lock-in effects and the working hours in One-Euro-Jobs. Hohmeyer also found no clear picture on whether a longer planned duration or more working hours raise or lower the participation effect on the employment prospects of the participants in the longer run. For East German men basically all options even 28 months after programme start either do not or negatively affect their regular employment rate. For East German women longer-term positive employment effects are found for participations ranging from more than 4 up to 8 months and participations for the 21 to 29 working hours participations. Positive and statistically significant longer-term effects for this planned duration and additionally for participations of a duration of more than 8 up to 12 months are found for West German men and women. For East German women and West German men the findings imply that only participations of 21 to 29 and 30 to 40 hours weekly lead to significant and positive employment effects 28 months after programme start. For West German women the same can be confirmed for all three different working time groups.

Hohmeyer and Wolff (2010) study with administrative data a sample of One-Euro-Job participations (and participations in other job creation schemes) starting during the period May to July 2005. The observation window after programme start is with 36 months considerably longer than in Hohmeyer and Wolff (2012). The estimated employment effects for men and women in East and in West Germany are similar to those of Hohmeyer and Wolff (2012) and relatively stable during the third year after programme start. By the end of the observation window of 36 months the estimates imply a rise in the employment rate of participants due to One-Euro-Job participation of about one percentage point for East German women, 1.4 percentage points for West German men and three percentage points for West German women (with employment rates of the matched controls ranging from 14 to about 23 per cent after 36 months). But they are negative for East German men. This is also reflected in the

estimates of earnings effects in the third year after programme start which are negative for East German men and positive for the other three groups. The study could not find evidence that the treatment reduces the probability of receiving welfare, but rather that it positively affects this probability. This might though reflect that One-Euro-Job participation causes welfare recipients to continue with their job search and welfare receipt instead of choosing some routes out of welfare like moving into a household of family members or of a partner with sufficient income.

The study of Tisch and Wolff (2015) is concerned with the effect of One-Euro-Job participation on self-efficacy of participants and hence an outcome that determines the employability of the participants. They analysed a sample drawn from the annual household panel study "Labour Market and Social Security". They combined these data with administrative records on the labour market history of the respondents and in particular on One-Euro-Job participation. Tisch and Wolff studied the period from 2006 to 2010 and analysed effects of participations that took place between two subsequent interviews of the respondents. The outcomes were measured at the second of these two subsequent interviews. Their result from a propensity score matching analysis imply that participants' self-efficacy, on average, was not affected by One-Euro-Job participation for almost all the self-efficacy outcomes and samples studied. Also when estimating the effects separately for participants with different initial baseline levels of self-efficacy no well-determined positive participation effects were found.

Dengler (2015) analysed the effectiveness of not only single One-Euro-Job participation but also sequences of One-Euro-Job participations with an administrative data of an inflow sample into welfare receipt during the period October 2005 to September 2006. She applied a dynamic causal model. Her results imply that a sequence of two One-Euro-Jobs compared with two periods of unemployment benefit II receipt is raising the employment probability after the start of the second One-Euro-Job for women in East Germany and more so for women in West Germany (order of magnitude of 12 percentage points 13 months after start of the second programme). The corresponding results for men were (mostly) not well determined. Moreover, she compared a sequence of a One-Euro-Job and a period of welfare receipt with a sequence of a period of welfare receipt followed by a period of One-Euro-Job participation. The comparison showed that the former sequence tends to lead to a higher employment rate (except for women in West Germany) than the latter sequence.

3.2 Studies on job creation schemes that are concerned with sectoral heterogeneity of the effects of participation

In the following, studies that explore the effects of participation in subsidised employment programmes with regard to sectoral heterogeneity are presented. Due to their importance for our study they are discussed in more detail than the studies in section 3.1. To

our knowledge, only three papers have dealt with that specific focus in the past. Two of these studies are concerned with job creation schemes, a programme similar to One-Euro-Jobs, which were one of the most important programmes before the introduction of the Hartz IV legislation in 2005 and ran out in the year 2012. These schemes differ from One-Euro-Jobs as workers did not receive the welfare benefit and one to two Euros per hour worked, but earned a regular wage. The third paper deals with within-establishment transitions from One-Euro-Jobs to regular employment and the relevance of sectors in this context.

Hujer et al. (2004) investigated effects of job creation schemes on participants with regard to differences in programme sectors in Germany using propensity score matching. Similar to One-Euro-Jobs, job creation schemes are legally bound to be additional in nature. The subsidy is normally paid for 12 months, so in contrast to the duration of participation in One-Euro-Jobs participation in job creation schemes lasted usually for a longer time. Based on administrative data, all participants entering the programme in February 2000 were traced until March 2002. The comparison group consisted of similar persons who met the institutional conditions for participation in job creation schemes in January 2000, but did not enter the programme within the observation period.

As the available data set did not contain the employment status, Hujer et al. built on information about the unemployment and job seeker status of individuals to generate outcome variables indicating success or failure of the programme participation. The observed individuals may be either “registered as unemployed”, “registered as job-seeker but not unemployed” or “not registered as job-seeker”. Whereas the status “registered as unemployed” is clearly identified as a failed outcome of the programme, “not registered as job-seeker” is seen as a success because it includes individuals in regular employment. However, this category might also comprise persons on maternity leave, in retirement or who left the working population for other reasons. Following budgetary reasons, this is still considered as success because these individuals did not receive benefits anymore and hence lessened the financial burden of the PES. Only the status variable “registered as job-seeker but not unemployed” is assessed as ambivalent because on the one hand it can imply regularly employed individuals who are looking for an alternative job and on the other hand participation in active labour market programmes. Using these three categories, two different binary outcome variables are generated which indicate “one” in case of success and “zero” in case of failure: an upper bound indicator is built indicating one (success) if the observed individuals are “not registered as job-seeker” or “registered as job-seeker but not unemployed” and zero (failure) if persons are “registered as unemployed”. Here, the status “registered as job-seeker but not unemployed” is considered to represent always regularly employed persons. In addition, a lower bound variable is created assigning one (success) to the persons under consideration if they are “not registered as job-seeker” and zero if they are “registered as job-seeker but not unemployed”

or “registered as unemployed”. In this case, the status “registered as job-seeker but not unemployed” is supposed to display always persons which are not regularly employed but for example in labour market programmes. The estimated effects of these two outcome variables describe the upper and lower boundaries of the true assignments. Thus, the real participation effect of job creation schemes is supposed to lie between the estimated effects on the basis of these variables.

Sectoral heterogeneity is analysed with regard to the categories “agriculture”, “construction and industry”, “office and services”, “community services” and “other sectors”. At the end of the observation period, 24 months after programme start, considerable differences in the participation effects for participants in different sectors are found. However, adverse participation effects were found for nearly all sectors. The sectors in which participation effects were most unfavourable for participants in West Germany are construction and industry for men with a negative effect between -19.4 and -11.9 percentage points (lower and upper bound) and office and services for women with a negative effect between -18.1 and -4.3 percentage points (last effect is not significant). In East Germany the most adverse sectors are agriculture for men with a negative effect ranging from -25.3 to -12.8 percentage points and construction and industry for women with a negative effect between -16.0 and -2.1 percentage points (last effect insignificant.). The only statistically significant positive participation effect is found for women in West Germany in the sector community services with an amount of 3.9 percentage points (upper bound). Further investigations of additional individual effect heterogeneity concerning age and unemployment duration within the sectors mostly did not yield positive participation effects on success as well. The only significant positive effect is found for women between 26 and 50 years working in the community and services sector in East Germany.

Caliendo et al. (2006) extended the evaluation of job creation schemes of Hujer et al. (2004) in three ways. First, the observation period starting in March 2000 can be lengthened by nine months to December 2002 due to an update of the used administrative data set. Second, regular (unsubsidised contributory) employment can be used as an outcome variable now. And third, in addition to programme sectors, effect heterogeneity with regard to type of support and type of institution granting the One-Euro-Job is analysed. Again, propensity score matching is implemented to estimate causal participation effects of job creation schemes. Participants starting work opportunities in February 2000 are compared to similar unemployed persons who were eligible in January 2000 but did not enter the programme.

The results show that the participation effects clearly dropped in the first months after programme start in all sectors. The decrease in effects appears presumably because individuals taking part in the scheme only have limited opportunities and incentives to search for regular employment. However, these lock-in-effects vary considerably across sectors and

regions. Five months after programme start, for men in West Germany the authors found significant negative effects ranging from -15.6 percentage points (agriculture) across -23.2 percentage points (construction and industry) to -27.2 percentage points (community services). The descriptive part of the analyses shows that the shares of men who are unskilled and lack professional training are clearly lower among the participants in the community services sector compared to the corresponding shares among the participants in the other sectors in West Germany. Because the non-participants which were matched to the participants in the sectors agriculture as well as construction and industry were less qualified than the comparison group of participants in the community services sector, they had lower chances of becoming employed and hence the corresponding lock-in-effects turned out to be lower. The difference in the lock-in-effects between the sectors agriculture and construction and industry are explained with possible seasonal effects, as in spring and summer employment chances increase within the sector of agriculture and construction. In East Germany lock-in-effects were generally less pronounced compared to West Germany. This is explained with the adverse labour market situation in East Germany which implied lower employment chances for men and women not participating in job creation schemes in East as opposed to West Germany.

At the end of the observation window almost three years after programme start, significant positive effects on regular employment can only be confirmed for two groups: men in West Germany who participated in the sector office and services and women in East Germany who took part in community services. For all other groups, participation effects at that time are (still) negative or not significant. These results could indicate that the evaluated job creation schemes are mostly ineffective. Caliendo et al. (2006) consider the design and contents of the programmes as possible explanations for this result. Since the programmes have to be additional in nature, the jobs could not include activities that are comparable to real market conditions and thus may not rise the participants' employability. Additional investigation of effect heterogeneity within sectors with regard to type of support (regular/increased) and type of institution granting the work opportunities (public/non-commercial) did not yield important additional insights that differentiated the sectoral analysis. The participation effects in the sectors stayed negative or not significant.

Hohendanner et al. (2011) studied under which conditions transitions of One-Euro-Job participants from programme to regular employment take place within the same establishment (glue effect). This study is not concerned with causal effects. The analysis is based on the special survey of the IAB Establishment Panel of the years 2006 and 2007, which only includes establishment-level data on organisations using One-Euro-Jobs. The panel comprises sectors in which the work opportunities should concentrate due to legal requirements. The included sectors are "education", "health and welfare", "non-profit organisations", "public administration" and "other services". The descriptive analysis of the establishment-level data showed that only

four percentage of One-Euro-Job participants were further employed in unsubsidised contributory jobs in the same organisation in 2006. Hence, these transitions can be regarded as rather rare events. The multivariate analysis was conducted by means of a multi-level logit regression considering the region and establishment level as random effects. The results indicate that with reference to public administration all remaining sectors increased significantly the probability of in-establishment transitions to regular employment. The difference to the public administration sector is found to be highest for the health and welfare sector. According to Hohendanner et al. (2011), this result could point to the fact that programme participants in the health and welfare sector are highly integrated in the internal division of labour and that they have a close functional association to the “core business” of the organisations. They perform central tasks and their activities are of high importance for work processes to be efficient and fluent within the establishments. Thus, there might be a higher incentive for decision makers in these organisation to offer regular jobs to One-Euro-Job participants compared to establishments in which they perform only tasks of minor importance. One example are indispensable assistance and support services which were separated from care activities in the course of rationalisation processes and hence are made available to personnel with lower qualifications.

4 Methods

To study effects of interventions like participation in ALMPs one needs to take into account the fundamental problem of unobservable outcomes, as formalised in the Roy-Rubin model (Roy 1951; Rubin 1974): The potential outcome Y of an individual i that we study can never be observed at the same time in both states that are relevant: with the treatment under consideration, $Y_i(1)$, and without the treatment, $Y_i(0)$. Let D being an indicator variable, which takes on the value one if a person is treated and zero otherwise. The effect of treatment on the treated is:

$$\tau_{ATT} = E[Y_i(1) - Y_i(0)|D_i = 1] = E[Y_i(1)|D_i = 1] - E[Y_i(0)|D_i = 1]$$

In this equation $E[Y_i(0)|D_i = 1]$ is the term that cannot be observed, as the potential outcome without treatment cannot be observed for treated individuals (when the treatment already takes or took place).

A consistent estimate of the effect of an ALMP participation can be achieved by matching methods (Rosenbaum/Rubin 1983, Sianesi 2004, Caliendo/Kopeinig 2008). In principle these methods identify for every participant a comparable non-participants, hence they match one non-participant or more non-participants to a participant. The non-participants need to be individuals who are at risk of receiving the treatment. A matched non-participant is a person that resembles the treated individual in the matched pair with respect to relevant

observable characteristics, X , prior to the treatment. These relevant observable characteristics are determinants of the outcomes regarded and the treatment probability. After finding the matched pairs, the difference between an observed outcome of a participant and the average of the observed outcomes of the matched non-participants for each of the participants in our sample can be determined. By taking the average of these differences for all matched pairs we get a consistent estimate of the treatment effect on the treated, if certain assumptions hold. As in many other studies (e.g. Gerfin/Lechner 2002, Sianesi 2004, Wunsch/Lechner 2008, Wolff et al. 2015), our outcomes are measured from the month of start of participating in the programme onwards. For non-participants though a programme start month is not available. Therefore, we assign to each non-participant a random programme start month that is drawn from the distribution of programme start months of the participants. This enables us to determine their outcome values in the months before and after (random) programme start.

Our analysis will condition on many observed pre-treatment characteristics. For this reason an exact matching cannot be applied, as it would become impossible to find matched controls for the One-Euro-Jobbers. For this reason we match on the propensity score as proposed by Rosenbaum and Rubin (1983). The propensity score, $P(X)$, is a one-dimensional function of the relevant characteristics, X . We will use an estimate of the probability of participating in the programme as the propensity score. We apply probit models to estimate the parameters of the participation probability. The estimates are carried out separately for each sub-sample and sub-programme that we study.

There is one crucial assumption for identifying our effect of interest, the conditional independence assumption (CIA). It requires that in the case of treatment and of non-treatment conditional on the propensity score, the outcomes are independent of the assignment to treatment. To ensure that this assumption is likely to hold our analysis considers a large set of characteristics that determine our participation probabilities. In the next section we turn to the administrative data from which these variables come from. Here though, we already mention the most relevant pre-treatment characteristics that we consider in our analysis.

The parameters of the participation equations are estimated in separate models for four groups of men and for women living in East Germany and of men and for women living in West Germany. In doing so we allow to take into account gender differences in the assignment to treatment that cannot be modelled by including a few interaction terms in a joint equation for men and women. Moreover, we take into account that the unemployment rates and the labour market situation differ with a considerably less favourable situation in East as opposed to West Germany. These differences between East and West exist not only in our period under review but since the beginning of the 1990s, when East Germany went through a transition shock. They hence play a considerable role for differences in the experience in the labour market

between people living in East or in West Germany. To control for such differences we decided to keep these four groups separately.

A first group of pre-treatment covariates that enter our participation equations are *socio-demographic characteristics*: age, schooling degree and occupational qualification, nationality, disability status, whether a person lives with his/her partner, number of own children and whether own children of different age groups live in the household, family status and the number of adult household members for different age-groups.

As a second set of covariates that the participation equation controls for characterises the *individuals' past labour market performance*. Among them we included variables on the last job: occupational status, last daily real wage³, type of last job (contributory employment, vocational training and minor employment), sector, the duration of the last job and the time since the end of the last regular job. Next, we include as controls the cumulated duration of a person's spells in different labour force states and of benefit receipt during the last year, last two years, last five years or other suitable time intervals (regular employment, registered unemployment, selected active labour market programmes and unemployment benefit II) and some further details. Moreover, we control for welfare benefit sanctions within the last year.

A third set of covariates is concerned with important *partner characteristics*: One outcome of interest is welfare receipt and for leaving the means-tested welfare receipt an individual's household income and in turn for couples a partner's potential performance in the labour market matters. Therefore, similar to the individual's covariates, but in a less detailed way, we include sociodemographic characteristics and labour market history of the partner of the individual.

Our fourth set of covariates characterises *current income of the household*. It includes real equivalent income from welfare benefit, real equivalent earnings of the household, and real equivalent income from other income sources than welfare benefit as well as the types of income (e.g. from earnings or other benefits that at least one household member received) that were available to a household at the sampling date. These variables are related to the extent to which the household has to rely on welfare benefit, as the amount of benefit supplement already available income, so that a household's legal minimum standard of living is guaranteed. *District level labour market indicators* are our last set of determinants of the participation equation: the vacancy-unemployment ratio, the unemployment rate of men and of women, the long-term unemployment rate, the rate of welfare recipients of men and of women, and the inflow rate into One-Euro-Jobs.

Our analysis also requires that the common support assumption holds: The One-Euro-Job participation probabilities of participants and non-participants in our sample have to be

³ We compute all real variables in our analysis by dividing them with the consumer price index which is normalized to 1 in the year 2010.

larger than zero and lower than one. And the participation probabilities of the participants and the non-participants need to overlap: For all estimates of the participation probability of the participants at hand non-participants in the control sample with similar estimates of the participation probability should exist, so that we can find matched controls for (almost) all participants. To check whether this is the case, we compared the distribution of the estimated participation probability of the participant group with the distribution of the estimated participation probability of its potential control group.

Our matching approach should guarantee that there are no differences in observables between the treated and matched controls. This can be examined: With t-tests we examined whether the means of the covariates do not differ significantly between the treated and the matched controls. The mean standardized absolute bias and Pseudo- R^2 of the participation equation estimated with a sample of matched pairs (see, e.g. Caliendo/Kopeinig 2008) are also applied to check whether a remaining selection on unobservables could lead to inconsistent estimates.

We apply three algorithms of nearest neighbour matching with one neighbour and replacement. One of them used no calliper and for two of them callipers were specified. With a calliper the nearest neighbours chosen by the matching algorithm from the control group for a participant in absolute terms never deviate in their propensity score from the one of the participant by more than the calliper. By specifying a calliper we hence limit the absolute difference between the propensity scores of a matched pair. The callipers were chosen from the results of a nearest neighbour matching with replacement. From the distribution of the observed absolute difference of the propensity scores of the matched pairs we used 90th and 99th percentile as callipers. The average treatment effects on the One-Euro-Job participants are also estimated by nearest neighbour one-to-five matching algorithms with replacement without and with the two callipers just described. To choose a matching algorithm we compared the mean standardized absolute bias after matching for the different algorithms. We did this four each of the four main groups of men and women in East and in West Germany and present results from nearest neighbour matching with five neighbours without callipers as this algorithm tends to achieve the lowest values of the mean standardized absolute bias. For a robustness check we still want to run two radius-calliper matching algorithms with callipers that we already used.

We use a very large set of important pre-treatment controls including detailed characteristics on the labour market history of an individual and the partner's skills and labour market history. Our covariate set should be highly correlated with unobservable talents and motivation to search for work. In turn, if our matching procedure balances the covariates, it might also be likely the treated and their matched controls do not differ with respect to important unobservable determinants of the propensity score and of the outcomes that we regard in our

analyses. For some variable we also carried out difference-in-difference matching, in particular for real earnings, the cumulated days in regular employment and the cumulated days in welfare receipt in each of the first years after programme start.

5 Data set, sampling and selective descriptive statistics

5.1 Data set

To examine the participation effects of One-Euro-Jobs in Germany, we drew on rich administrative event history data that are provided by the Statistics Department of the German Federal Employment Agency and that are prepared for research purposes by the Institute for Employment Research. These data comprise detailed information on the socio-economic status and demographics, employment and unemployment histories as well as past participations in active labour market programmes of unemployed and job-seeking persons receiving UB II. Furthermore, it is possible to identify the household context of welfare recipients, so the presence of a partner, adult children and other adult household members could be considered in the analysis as well as information on household income and earnings, types of income and socio-economic characteristics and (un)employment histories of partners. Finally, regional labour market indicators are available in the data. The detailed set of individual and household characteristics enabled us to cover a wide range of pre-treatment conditions in the estimation of propensity scores (see previous section). Taken together the data allows us to draw a large sample for our analysis, provides important characteristics that determine programme participation and outcomes. Moreover, it enables us to analyse effects on outcomes of interest: Working in unsubsidised contributory (regular) employment, receipt of unemployment benefit II (welfare) and (real) earnings.

5.2 The Sample

Our sample consists of persons who were registered unemployed and received welfare benefit on 31 March 2007. To estimate effects of programme participation we compared selected outcomes between sample members who entered One-Euro-Jobs during the following three months and similar people who did not participate in this time window, but might have participated later on (waiting). While we considered the total inflow into One-Euro-Jobs in the treatment group during the observation period, the potential control group consisted of a 20-per-cent random sample of non-participants at the sampling date. As for non-participants a programme start month was not available, a random programme start month, which was drawn from the distribution of programme start months of the participants, was assigned to each sample member in the potential control group (see methods section). Non-participants were removed from the sample if they entered regular employment or left welfare receipt before having reached their hypothetical programme start. Furthermore, persons older than 62 years were excluded as we want to trace participants some time before they enter retirement. In

addition, unemployed persons close to retirement have a very low chance to get assigned to active labour market programmes. Moreover, individuals participating in active labour market programmes at the sampling date on 31 March 2007 were dismissed from the sample because they might not be at risk of entering One-Euro-Jobs in the three months following. Finally, unemployed persons registered with job centres entirely operated by municipalities (“zugelassene kommunale Träger”, Approved Local Providers - ALP) and not jointly by municipalities and the Federal Employment Agency (“gemeinsame Einrichtungen”, Joint Local Agencies - JLA) were not considered in the analysis due to limitations in data quality and detail of labour market information. According to data from the Statistics Department of the German Federal Employment Agency the unemployment stock in the ALP job centres represented about 13 per cent of the total stock of unemployed welfare recipients in Germany.

Table 2: Sample size of treated and potential controls

	East Germany		West Germany	
	Men	Women	Men	Women
Number of potential controls	67653	57105	111648	102849
Sample sizes of treatment groups - all treated and by sector				
<i>All One-Euro-Job participants</i>	29184	21844	31684	16582
<i>Environment protection and rural conservation</i>	9883	4305	11680	2887
<i>Infrastructure improvement</i>	8742	4854	10060	4752
<i>Health care</i>	982	2492	3139	4099
<i>Child care and youth welfare</i>	2431	3474	1522	1850
<i>Counselling services</i>	2117	2691	2047	1301
<i>Art, culture and sports</i>	3180	2377	1177	448
<i>Education and research</i>	1849	1651	2055	1242
Ratio between number of potential controls and number of treated				
<i>All One-Euro-Job participants</i>	2.3	3.1	2.1	4.1
<i>Environment protection and rural conservation</i>	6.8	13.3	9.6	35.6
<i>Infrastructure improvement</i>	7.7	11.8	11.1	21.6
<i>Health care</i>	68.9	22.9	35.6	25.1
<i>Child care and youth welfare</i>	27.8	16.4	73.4	55.6
<i>Counselling services</i>	32.0	21.2	54.5	79.1
<i>Art, culture and sports</i>	21.3	24.0	94.9	229.6
<i>Education and research</i>	36.6	34.6	54.3	82.8

Table 2 depicts the sample sizes of the treatment and potential control groups we used in the analysis for each of the four samples of men and of women living in East or in West Germany. In the main sample, the size of the treatment groups ranges from 16,582 women in West Germany to 31,684 men in West Germany. The seven subsamples for the sectors/fields of work are sorted downwards by the quantity of the summed up treatment group sizes by gender and region. Whereas the subsamples for “environment protection and rural conservation” and “infrastructure improvement” were comparably large, One-Euro-Jobs

assigned to the fields “art, culture and sports” and “education and research” played a less important quantitative role at the lower end of the range. All cells comprised a sufficient number of treatments for the analysis. The group with the lowest number of programme participants were women in West Germany in the sector “art, culture and sports”. The corresponding potential control groups contained at least 2.1 times the size of the treatment groups (main sample with men in West Germany). Therefore, it was assumed that a sufficient number of comparable controls can be related to the programme participations to form “statistical twins” within the employed matching method. As the treatment groups by fields represented subsamples of the main sample, they were all compared with one same potential control group.

5.3 Selective descriptive statistics

In table 3.1 the distribution of selected covariates are displayed in the potential control groups, the main treatment groups as well as across the sectors to be analysed. Differences in the shares of values of selected covariates between the sample of potential controls on the one hand and the samples containing the treated on the other hand can provide useful hints with regard to selective assignments of welfare recipients into different kinds of One-Euro-Jobs. It is of particular interest whether the defined target groups of the programme are overrepresented in the treatment groups (e.g. welfare recipients under 25 years, low qualification, long-term employed, health restrictions).

The first covariate considered in the table is education. A clear educational divide existed between East and West German welfare recipients in the potential control groups. Whereas West Germans were characterised by higher shares in the lower educational categories, the percentage of persons in East Germany within the category of higher schooling degree were more as twice as high. In the treatment samples we found mostly higher shares of persons with lower secondary degrees (“Hauptschulabschluss”) and lower shares of individuals with a higher school degree compared to the potential controls. However, there was no clear overrepresentation of persons with no schooling degree at all in the samples of the treated. Thus, by large case managers assigned work opportunities in line with the defined concept of target groups to needy individuals with relatively low schooling degree. Turning towards the covariate age, we find a partly immense overrepresentation of individuals aged less than 25 years in all treatment groups compared to the potential controls. This can be explained with the rule stating that welfare recipients under the age of 25 years should be specially supported with One-Euro-Jobs if regular employment or training opportunities are not at hand (see section 2). In contrast, participants aged between 25 and 34 years were characterised universally by lower shares in the samples of treated compared to the potential control groups. In the older age groups, no clear picture of higher or lower percentages could be found.

Table 3.1: Selected descriptive statistics of treats and potential controls by gender and region (in per cent)

			Education			Age			
			No schooling degree	Lower secondary degree	Higher	15-24	25-34	35-49	50-62
Control group (waiting)	East Germany	Men	11.7	38.4	50.0	8.2	25.6	43.6	22.5
		Women	10.0	31.2	58.8	8.2	22.8	44.4	24.6
	West Germany	Men	17.5	56.1	26.4	6.4	24.8	45.6	23.2
		Women	21.7	49.1	29.2	6.9	24.9	45.6	22.7
Treatment Groups									
Total sample	East Germany	Men	14.4	44.3	41.2	16.1	16.5	42.0	25.4
		Women	9.4	35.7	54.8	14.2	14.7	45.3	25.7
	West Germany	Men	19.9	60.3	19.8	13.3	21.8	45.2	19.7
		Women	18.9	53.0	28.2	15.0	20.3	45.6	19.1
<i>Samples by sectors</i>									
Environment protection and rural conservation	East Germany	Men	15.8	46.0	38.2	10.9	15.8	45.1	28.2
		Women	11.8	42.0	46.2	9.3	13.3	51.0	26.4
	West Germany	Men	21.9	63.3	14.7	10.3	22.9	46.8	20.0
		Women	21.9	53.6	24.5	13.6	20.9	46.2	19.3
Infrastructure improvement	East Germany	Men	15.1	45.7	39.1	14.7	16.5	43.2	25.6
		Women	11.7	38.2	50.0	13.3	13.7	47.9	25.1
	West Germany	Men	20.0	59.1	21.0	13.0	22.0	45.4	19.6
		Women	20.0	52.3	27.7	14.6	19.6	46.3	19.6
Health care	East Germany	Men	11.9	41.2	46.8	15.3	19.0	44.1	21.6
		Women	7.7	35.5	56.8	10.8	16.1	45.4	27.7
	West Germany	Men	15.1	59.9	25.0	9.6	20.4	46.6	23.4
		Women	18.5	55.6	25.9	10.5	20.1	48.8	20.6
Child care and youth welfare	East Germany	Men	15.5	42.5	42.0	30.8	14.9	34.0	20.3
		Women	8.5	32.0	59.5	19.7	16.2	41.8	22.3
	West Germany	Men	20.4	54.0	25.6	34.1	17.2	34.8	13.9
		Women	17.5	50.4	32.1	23.7	20.8	39.6	15.9
Counselling services	East Germany	Men	12.1	42.2	45.6	18.4	18.6	39.1	23.9
		Women	7.1	32.3	60.6	14.0	14.5	42.7	28.8
	West Germany	Men	16.3	59.1	24.6	11.3	24.5	46.5	17.7
		Women	16.3	54.0	29.7	12.3	20.1	47.2	20.4
Art, culture and sports	East Germany	Men	10.6	39.5	49.9	11.1	17.2	44.7	27.1
		Women	6.6	28.7	64.6	10.0	15.4	46.0	28.6
	West Germany	Men	17.0	57.8	25.2	9.3	20.1	47.2	23.4
		Women	10.9	48.2	40.8	10.9	26.6	45.8	16.7
Education and research	East Germany	Men	13.4	43.1	43.6	38.2	17.1	28.1	16.6
		Women	9.3	35.5	55.2	29.7	15.3	34.0	21.1
	West Germany	Men	20.0	56.6	23.3	26.1	19.0	38.3	16.6
		Women	15.9	50.5	33.7	26.5	19.6	37.5	16.4

In the table 3.2., the description of selective covariates in the samples is continued. In the comparison groups, around 20 per cent of the West Germans were foreign nationals. In East Germany the shares were less than twice as low. In all treatment groups we found that welfare recipients with foreign nationalities were underrepresented. This is surprising as it could be expected that for example an average lower degree of language skills leads to employment impediments and hence a higher rate of programme assignments for these groups compared to persons with German nationality. However, case managers might also allocate work opportunities less often to welfare recipients with foreign nationalities due to lower estimated success chances of programme participations ending with an employment take-up compared to unemployed Germans (creaming). Among the welfare recipients entering work opportunities were slightly higher percentages of individuals with disabilities in three of the four main samples compared to the corresponding group of non-participants. Although the differences are rather low, ranging between 0.1 to 0.3 percentage points, this might show that persons with health restriction were identified and treated as target group for the programme in the job centres as expected. However, for male participants in West Germany a lower share of persons with disabilities was detected in the treatment as compared with the group of potential controls. Also, disabled individuals were mostly underrepresented in the sectors “environment protection and rural conservation” and “child care and youth welfare”.

Individuals without a partner were overrepresented in the main treatment samples compared to the potential controls. The shares of singles were higher in West Germany than in the East. The overrepresentation of singles might point to the fact that they experienced long-term unemployment to a higher degree than individuals with partner as they cannot count on an additional income. The table depicts a considerable gender difference with regard to childlessness in the potential control groups. Whereas the share of men without children ranged from 76 to about 81 per cent, the differences for women varied on a lower level, between about 51 and 59 per cent. As for the covariate “no partner”, we also found an overrepresentation of childless welfare recipients in the main treatments groups. The differences were higher in West Germany, in particular for women. The positive selection of welfare recipients without children might be explained by time restrictions of fathers and mothers that are especially prominent if children are young. Taking a look at the subsamples, for all childless persons and for almost all individuals without partner percentages in the sectors are higher than in the comparison groups.

Table 3.2: Selected descriptive statistics of treats and potential controls by gender and region (in per cent)

			Foreign nationality	Disability	No partner	No child	Never regularly employed in last 5 years	Mean duration of cumulated regular employment in last 5 years (days)
Control group (waiting)	East	Men	8.2	3.6	68.1	80.9	51.4	218
	Germany	Women	7.8	2.7	62.0	58.7	61.7	179
	West	Men	21.0	5.3	66.4	76.0	46.9	248
	Germany	Women	21.7	3.4	66.3	50.9	60.0	193
Treatment Groups								
Total sample	East	Men	3.3	3.8	69.6	84.0	55.0	185
	Germany	Women	3.6	3.0	62.2	62.4	64.9	145
	West	Men	12.2	4.5	71.8	81.2	49.1	210
	Germany	Women	13.2	3.5	74.6	61.8	57.3	190
<i>Samples by sectors</i>								
Environment protection and rural conservation	East	Men	2.0	3.2	67.3	83.5	56.5	170
	Germany	Women	1.5	2.1	56.0	62.6	69.8	115
	West	Men	10.6	4.4	69.5	79.8	48.6	213
	Germany	Women	10.1	3.0	71.9	62.6	58.0	188
Infrastructure improvement	East	Men	3.4	3.3	69.1	84.1	54.5	184
	Germany	Women	4.1	3.0	60.7	63.1	66.2	135
	West	Men	14.4	4.3	72.8	81.6	49.3	208
	Germany	Women	14.9	3.4	75.1	61.0	58.4	182
Health care	East	Men	5.1	7.7	75.6	85.0	55.7	185
	Germany	Women	3.8	4.0	65.9	61.6	62.0	159
	West	Men	12.8	5.6	73.8	83.3	49.1	208
	Germany	Women	13.0	3.8	73.5	61.0	56.8	194
Child care and youth welfare	East	Men	6.5	3.7	74.0	84.4	50.8	220
	Germany	Women	4.7	2.4	65.7	59.6	62.7	164
	West	Men	10.8	3.0	77.0	84.2	48.9	202
	Germany	Women	12.7	2.6	77.5	61.3	55.7	195
Counselling services	East	Men	3.4	5.1	72.6	84.8	54.7	196
	Germany	Women	4.1	3.2	62.9	63.6	63.9	150
	West	Men	11.3	4.2	72.6	81.4	50.3	206
	Germany	Women	13.3	4.0	75.9	61.4	56.6	189
Art, culture and sports	East	Men	3.4	4.6	66.9	82.8	57.5	171
	Germany	Women	3.7	4.2	61.9	62.9	64.8	138
	West	Men	9.2	4.2	73.1	82.2	49.8	217
	Germany	Women	11.4	6.5	78.6	66.1	55.1	203
Education and research	East	Men	4.2	4.6	75.9	86.0	51.2	240
	Germany	Women	4.4	3.3	70.0	63.7	59.4	190
	West	Men	12.9	6.1	72.1	81.5	49.4	213
	Germany	Women	15.9	3.9	76.3	65.2	56.3	196

More or less half of the welfare recipients in the potential control groups were individuals who were never regularly employed in the last 5 years. The shares ranged from around 46 per cent in the case of men in West Germany to about 62 per cent of women in East Germany who were not regularly employed for at least 5 years. In three of four groups of the main treatment samples, we found a positive selection of these hard-to-place welfare recipients. Only very long-term non-employed women in West Germany exhibited a lower share in the main treatment group compared to the sample of potential controls. The underrepresentation of women in West Germany was found in all subsamples. Furthermore, we found lower percentages for men in East Germany in the field “child care and youth welfare” as well as for men and women in East Germany in the field “education and research”.

In the next column, the distributional pattern of the mean duration of cumulated regular employment in the last five years (in days) across the groups mainly confirmed these findings. In the comparison groups, the mean number of days in regular jobs varied between 179 for women in East Germany to 248 for men in the West. In the main treatment groups, we found a lower number of average days in regular employment, hence more hard-to-place individuals, for all welfare recipients. Across the subsamples, we found mainly less days in regular employment than in the comparison groups. Again, mostly women in West Germany stand out from the crowd with (slightly) higher numbers of average days of cumulated regular employment in the last 5 years in four of the seven sectors. In general, we can confirm that the examined work opportunities mostly focus on hard-to-place benefit recipients.

6 Results and Discussion

We now turn to our main results. For the reasons discussed in section 4 we present results from nearest neighbour matching with five neighbours. Due to the large numbers of non-participants in the control groups (see table 2), we were able to find suitable comparisons (“statistical twins”) for nearly all individuals in the treatment groups. For both the main samples and the sector-specific subsamples were less than five observations in the off-support treatment groups (see table A1). When comparing the density distribution of the propensity score in the treatment and control groups, we could affirm a sufficiently large overlap and common support. This is a precondition to find suitable matched controls for each of the treated observations. Using t-tests we did not find significant differences in the covariates between the treatment and control groups after matching anymore. The summary measures displayed in table A1 underline this: The mean standardized bias after matching was below the value 0.5 in the main samples and below the value 2 in the subsamples. Caliendo and Kopeinig (2008) point out that in most studies a reduction of the bias to values below 3 to 5 percent is regarded as sufficient; our mean standardized biases after matching are well below a value of 3. Moreover, the adjusted pseudo- R^2 of the participation equation estimated with a sample of

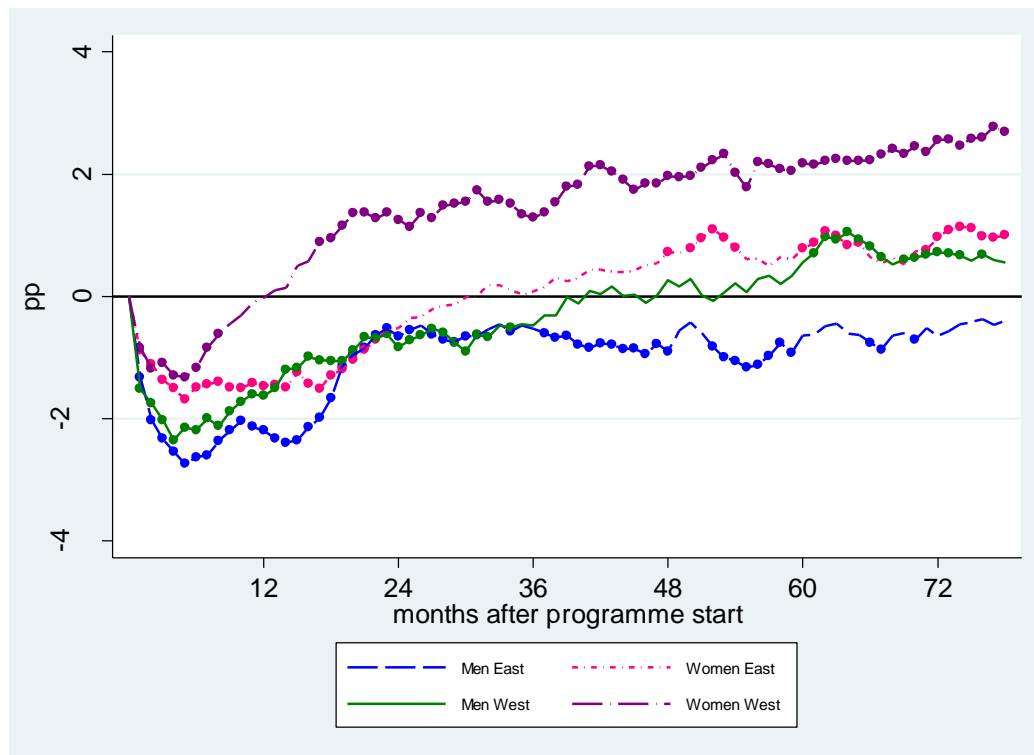
treated and matched controls was always close to zero, implying that the pre-treatment covariates of the equation have no considerable explanatory power. Considering all this, it is justified to assume that the matching procedures performed very well and treatment effects should not be affected by selection bias based on observable characteristics.

6.1 Main effects on regular employment, real annual earnings and welfare receipt

Regular Employment

Figure 1 displays the average treatment effects on the treated of One-Euro-Job participation on the regular employment rate for the main samples in the whole observation period. After programme start, all groups experienced a lock-in-effect which reached its low point after around six months. The lock-in-effect is smallest for women in West Germany with up to -1.2 percentage points and highest for men in East Germany with up to -2.6 percentage points. Among the matched control groups, the share of regularly employed people at that time is 7.3 per cent for women in West Germany and 7.6 per cent for men in East Germany. Subsequently, the effect on the probability of contributory unsubsidised employment began to rise for all groups. Whereas the treatment effects for female participants in West Germany already became positive after around one year, women in East Germany and men in West Germany firstly profit from work opportunities after about two and half years and three and half years. In line with previous research, East German men's probability of regular employment did not seem to be affected positively by One-Euro-Jobs at all. In spite of an increase in the first two years after programme start, their treatment effects stayed negative during the whole period under consideration. After six years, women in West Germany were characterised by the highest participation effect on the regular employment rate of 2.6 percentage points, implying an increase in the probability of holding a regular job by 12.6 percent compared to the situation with no treatment (the regular employment rate of the matched control group was 20.4 per cent). At that time, the estimates for women in East and men in West Germany exhibited also positive effects with an amount of one and 0.7 percentage points, or an increase in employment probability by 4.7 per cent and 3.4 per cent compared to a situation with an absence of treatment (with a regular employment rate of 20.8 per cent and 21 per cent among their matched controls). Even six years after programme start, we still found a negative treatment effect of -0.6 percentage points for East German men, which corresponds to an employment probability reduced by -3.2 per cent compared to similar non-participants (the share of the matched control group was 20 per cent). However, after six years the negative effects for East German men are no longer well determined.

Figure 1: Effects of One-Euro-Job participation on the regular employment rate (in percentage points)¹⁾



1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. Dots show effects that are significant at the 5%-level at least.

Real annual earnings

With regard to the outcome variable real annual earnings, we discovered a similar pattern of average treatment effects developing over time that was already determined for regular employment (Figure 2). Again, the lock-in-effect was highest for East German men and lowest for West German women. Whereas the first group was characterised by a negative average effect of -580 Euros within the first year after entering work opportunities, a negative effect of -91 Euros could be identified for the second. The mean annual earnings of the respective matched controls were 1,533 and 1,278 Euros. In the second year after programme start, the effects of all groups except men in East Germany already reached positive values and stayed above zero until the end of the observed time span. Similar to the results for contributory unsubsidised jobs and again in line with previous research, the significant treatment effects for men in East Germany remained negative within the whole considered time window

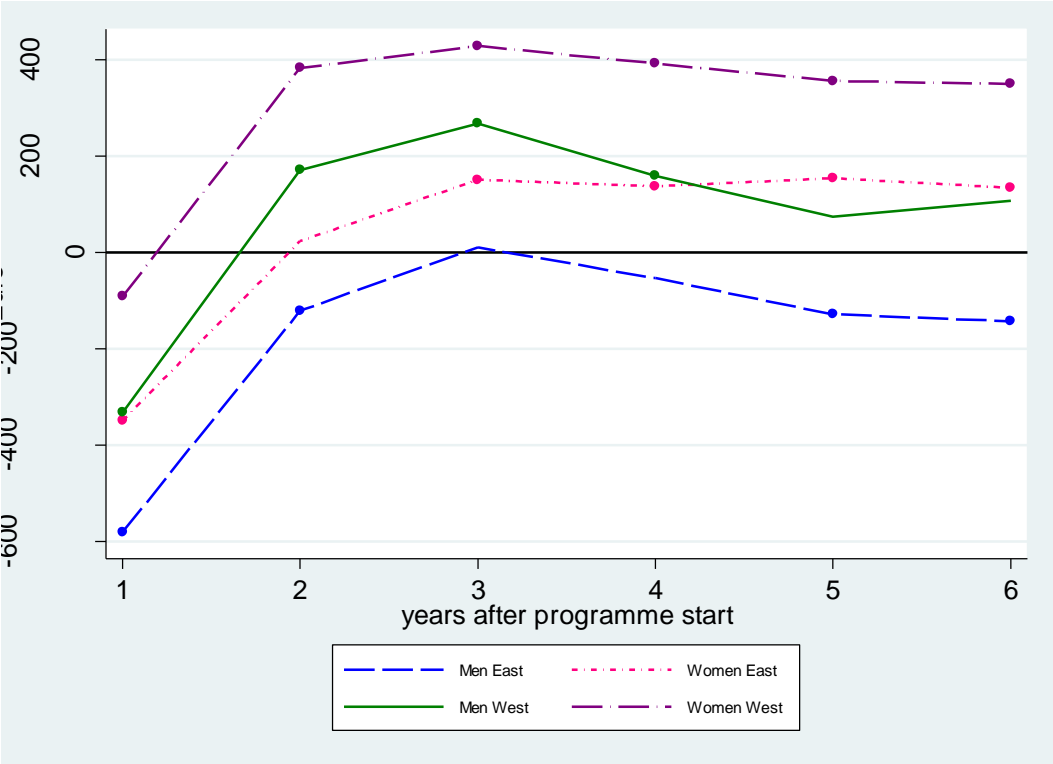
Six years after the entry into One-Euro-Jobs, West German women displayed still the highest average treatment effect, consisting of 350 Euros, which is a 10.7 per cent increase given an average earned annual income of 3,278 Euros among the statistical twins. At the same time, East German women and West German men also profit from work opportunities with effects of 135 Euros and 108 Euros, or increases of 4.5 per cent and 2.5 per cent compared to the matched control groups' annual earnings of 2,968 Euros and 4,374 Euros.

Men in East Germany show a negative effect of -143 Euros, that is a decrease by -4 per cent compared to an earned income of 3,555 Euros in case of the absence of treatment.

Although the negative performance of men in East Germany concerning the rate of regular employment and annual earnings was already detected in previous studies (e.g. Hohmeyer and Wolff 2010), there is no distinct explanation for this finding, yet. With regard to some central socio-economic characteristics and regular employment history (tables 3.1 and 3.2), we did not discover important differences compared to other treatment groups that might illuminate the generally negative impact of work opportunities on them. Also, we do not have reasons to assume that men in East Germany supported by work opportunities were individuals with particularly stronger work impediments compared to the other treatment groups. One explanation for this finding might be that East German men were assigned to different work activities with relatively low labour demand compared to other groups. The analyses by programme sectors might yield further insights.

The high performance of women (especially in West Germany) regarding contributory unsubsidised employment might also be related to a support with specific work opportunities by case managers in job centres. As the share of childless women in One-Euro-Jobs is relatively small compared to men, one might also assume that the programme is somehow a stepping stone back into the labour market after phases of child care.

Figure 2: Effects of One-Euro-Job participation on real annual earnings (in Euro)¹⁾



1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. Dots show effects that are significant at the 5%-level at least.

Welfare receipt

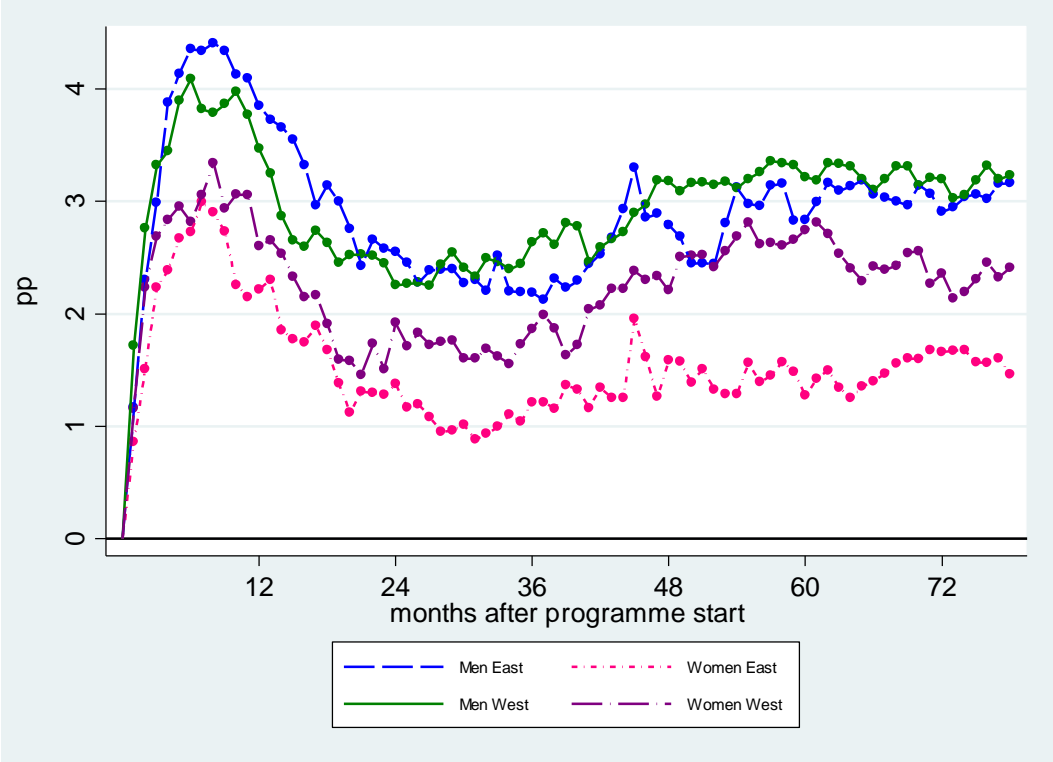
Figure 3 depicts the main effects of One-Euro-Job participation on the rate of welfare benefit receipt. As the involvement in the programme implies a parallel receipt of UB-II-benefits, we found lock-in-effects for all four groups that reached its peak at about nine months after programme start. At this point in time the treatment effects ranged between 4.3 percentage points for men in East Germany and 2.7 percentage points for women in East Germany (the respective shares of matched UB-II-recipients without treatment were 86.9 per cent for East German men and 89.4 per cent for East German women). In the following months the effects in all four groups decreased and came to a low point somewhere between the second and third year after programme start, however still remaining above zero. After that, the treatment effects slightly rose again. Six years after entering work opportunities we discovered only positive effects on welfare receipt. Thus, One-Euro-Jobs generally raised on average the dependence on welfare for all four groups. Men in West and East Germany exhibited the highest effects of 3.2 and 2.9 percentage points for men in West and East Germany, that are increases by 5.8 and 4.8 per cent with reference to shares of 54.8 and 60.5 per cent among the respective matched controls. Women in West and East Germany were characterised by treatment effects of 2.4 and 1.7 percentage points close to the end of the observation period, which can also be described as 4.2 and 2.7 per cent increases of welfare dependence (shares of 56.8 and 62.6 per cent among the matches control groups).

Concerning the positive effects on regular employment and annual earnings for three out of four groups, it is surprising to see that the level of dependence on welfare benefit stayed higher in all treatment groups than the level of UB-II-receipt in the matched control groups throughout the whole observation period. For men in East Germany this result is plausible: as participation diminished their employment chances, they continued to receive UB II. As a further analysis suggested (not shown), for the other “successful” groups these results might mainly be explained by the fact that the matched non-participants in the control group left the working life more frequently than the treatment groups. Hence, due to programme participation, women and men in West Germany as well as women in East Germany continue to supply labour as benefit recipients if they did not enter employment with sufficient earnings whereas non-participants rather withdrew from the labour market at all, e.g. by means of household formations, returns to the parental home or early retirements.

The presented analyses illustrate that it is of high importance to account for a long time horizon when evaluating the participation effects of One-Euro-Jobs. In this paper we were able to consider an observation period of more than six years that is twice as long as in the study of Hohmeyer and Wolff (2010). We found that the effects on the regular employment rate for women in East Germany and men in West Germany became positive just around the third year after programme start and we could firstly register the following progression in the positive

effect range. Moreover, we were able to show that the treatment effects on regular employment and annual earnings for men in East Germany stayed negative even after the third year. Furthermore, we discovered that One-Euro-Job participation did not foster the drop out of welfare receipt for any groups at any time in our six-year-window, although the groups' probabilities for benefit receipt decreased until the second or third year after the initial lock-in-effects. Overall the different effects become relatively stable four to six years after programme start. That we still find sometimes an increase of the effects during the third and/or fourth year after programme start might be a result of the upturn after the Great Recession of the years 2008 and 2009. The upturn could help to turn positive effects of One-Euro-Job participation on employability into higher effects on the employment outcomes than during the Great Recession.

Figure 3: Effects of One-Euro-Job participation on the rate of welfare benefit receipt (in percentage points)¹⁾



1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. Dots show effects that are significant at the 5%-level at least.

6.2 Effect heterogeneity by sectors

Regular Employment

Table 4 shows the participation effects of One-Euro-Jobs on the regular employment rate of participants in the seven sectors six years after programme start. We discovered that the previously found negative effect on holding a regular job for men in East Germany was mainly concentrated in the sectors “environment protection and rural conservation” as well as

“infrastructure improvement”. They exhibited treatment effects of -1.4 and -2.5 percentage points, or decreases of -7.2 and -12.2 per cent (the employment shares among the matched controls were 19 and 20.3 per cent). In contrast, women in West Germany were characterised by highly significant positive employment effects of 2.4 and 1.8 percentage points in these two sectors, implying an increase of 12.5 and 9 per cent if we regard the outcome value without treatment, i.e. the employment shares of 19.6 and 19.9 per cent in the related control groups. Considering the insignificant effects as well (slightly positive for men West Germany and marginally negative and positive for women in East Germany), these results might hint to regional differences in labour demand being responsible for the opposite performances. In East Germany large parts of the public infrastructure have been modernized after German reunification until years after the beginning of the new millennium and during this period public works programmes (Arbeitsbeschaffungsmaßnahmen, Strukturanpassungsmaßnahmen) were used on a large scale partly in the fields environmental protection and infrastructure improvement (Fitzenberger and Hujer 2002). In turn during the years after 2007 regular job vacancies in these fields might have been low in East rather than in West Germany. Therefore, programme participants in these sectors in West Germany might have a higher chance than programme participants in East Germany of obtaining a regular job in related areas.

Table 4: Effects of One-Euro-Job participation on the regular employment rate six years after programme start – by sector (in percentage points)¹⁾

Sectors	East Germany		West Germany	
	Men	Women	Men	Women
Environment protection and rural conservation	-1.36 ***	-0.37	0.31	2.44 ***
Infrastructure improvement	-2.48 ***	0.11	0.12	1.79 ***
Health care	-1.24	3.88 ***	1.57 *	3.87 ***
Child care and youth welfare	-1.34	3.37 ***	1.70	5.44 ***
Counselling services	0.17	2.18 **	0.50	0.82
Art, culture and sports	1.55 *	1.07	3.52 **	-0.27
Education and research	-0.89	-0.04	2.12 **	1.97

1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level

Women in East and West Germany participating in the fields “health care” and “child care and youth welfare” were characterised by high positive participation effects compared with women participation in the other fields. The magnitude of effects ranged in the sector “child care and youth welfare” between 3.4 percentage points in East Germany and 5.4 percentage points in West Germany (the rate of regular employment among the matched controls were 22.6 and 20.9 per cent). In the field “health care” the effects were 3.9 percentage

points for women both in East and West Germany (shares of matched controls were 21.6 per cent in East Germany and 20 per cent in West Germany).

The highly significant positive treatment effects for women in some sectors might be explained by a strongly increasing demand for labour in these fields. In Germany between December 2007 and December 2013 the number of employees in contributory jobs within the economic sector “health care and social services” augmented by 19.4 per cent whereas the overall number of employees increased only by 8.3 per cent (Statistics Department of the German Federal Employment Agency 2008, 2013a). Moreover, in December 2013 – the end of the observation window of our analysis - medical and non-medical health professionals as well as personal care professions were occupations with one of the highest skills shortage at the German labour market (Statistics Department of the German Federal Employment Agency 2013b). While direct entries into those regular jobs may not be at hand for the hard-to-place individuals under consideration, apprenticeships could have been a possibility to step into these occupations. Although we could also identify positive effects for men in West Germany in these fields (however only in one case significant at the 10%-level), treatment effects were strongest for women. With regard to this finding, gender specific norms or preferences on the part of programme participants, case managers in the job centres or companies in the fields of health and child care might play a role. Occupation in the domain of patient care, geriatric care and child care are distinguished by a high gender segregation, e.g. in December 2013 83.1 per cent of all trainees and 91.3 per cent of all employees in the child care and rearing occupations were female (Statistics Department of the German Federal Employment Agency 2013c).

In the field “counselling services”, the effectiveness of work opportunities in terms of effects on the rate of unsubsidised contributory employment of the participant group six years after programme start could only be established with sufficient certainty for women in East Germany. Their average treatment effect was 2.2 percentage points representing an increase of 10.5 per cent with reference to an employment share of 20.7 per cent among the matched non-participants. The sectoral effects of the other three groups were positive but not significant. With regard to the sector “art, culture and sports”, we detected positive significant participation effects for men in East and West Germany of 1.6 percentage points and 3.5 percentage points (with employment shares of 20.6 per cent and 21.4 per cent among the matched comparison groups). For male participants in East Germany this was the only significant positive effect.

In the field with the lowest number of inflows into One-Euro-Jobs, “education and research”, only men in West Germany were characterised by a significant effect. At the end of the considered time window, for this group treatment led to a rate of regular employment higher by 2.1 percentage points (or 9.2 per cent referring to a share of 23.2 per cent among the matched controls). Besides that, we found a positive but insignificant effect for women in West

Germany as well as slightly negative but insignificant effects for individuals in East Germany. As before in the case of “environment protection and rural conservation” (as well as partly “infrastructure improvement”), this variation by region might have originated of different sizes of labour demand in East and West Germany.

Annual earnings

In table 5, the sectoral heterogeneity in effects of One-Euro-Job participation on real annual earnings are presented. Again, only results at the end of the observation period after six years after are displayed. In general, we found a very similar pattern of positive and negative effects compared to the findings concerning the rate of regular employment. Once more, in the sectors “environment protection and rural conservation” as well as “infrastructure improvement” we detected highly significant negative effects for men in East Germany. The treatment effects were more adverse in the field “infrastructure improvement” than in the field “environment protection and rural conservation” with values of -446 Euros and -320 Euros, or decreases of -12.5 per cent and -9.4 per cent (averages of 3,579 Euros and 3,408 Euros among the matched controls). However, the positive effects of women in West Germany turned out to be not significant for the real earnings outcome. Whereas the lower rate of regularly employed men in East Germany led to lower earnings compared to the matched non-participants, the higher probability of unsubsidised contributory employment of women in West Germany compared to the matched controls did not yield a significantly higher earned income.

Table 5: Effects of One-Euro-Job participation on real annual earnings in the sixth year after programme start – by sector (in Euro)¹⁾

Sectors	East Germany		West Germany	
	Men	Women	Men	Women
Environment protection and rural conservation	-320 ***	-60	15	203
Infrastructure improvement	-446 ***	44	-29	168
Health care	-93	445 ***	230	614 ***
Child care and youth welfare	-75	470 ***	126	654 ***
Counselling services	-49	208 *	4	467 **
Art, culture and sports	277 **	173	647 **	-417
Education and research	-287	219	446 **	195

1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level

In the sectors “health care” and “child care and youth welfare”, involvement in work opportunities proved also to be beneficial for women in general profit as it was the case with regard to regular employment before. We discovered significant positive effects of 445 Euros and 470 Euros for East German women (averages of 3,113 Euros and 3,229 Euros among the matched controls) as well as 614 Euros and 654 Euros for West German women (averages of

3,221 Euros and 3,417 Euros in the respective comparison groups). Thus, the positive employment effects converted into higher earnings compared to non-participants.

In the sector “counselling services” we discovered not only the (significant) positive effect sign for women in East Germany already known from the sectoral analyses regarding regular work but also a positive effect significant at the 5%-level for women in West Germany. For women in East and West Germany we discovered effects of 208 Euros and 467 Euros (averages of 2,985 Euros and 3,192 Euros in the respective control groups). Hence, programme participation in the sector “counselling services” might generally be a stepping stone to a higher earned income (and partly a higher rate of regular employment) for women, similarly to the fields “health care” as well as “child care and youth welfare”. However, in view of the variety of possible work activities in this field, it is hard to think of a distinct mechanism generating the results on counselling services.

As before in the case of regular jobs, men both in West and East Germany profited from the workfare programmes in the sector “art, culture and sports”. They featured effects of 277 Euros in East and 647 Euros in West Germany which were increases of 7.4 per cent and 14.3 (average annual earnings of 3,764 and 4,526 among the matched controls). For East German men this was again the only positive effect we could detect and for West German men the effect size was highest in this sector regarding earnings as well as regular jobs. Hence, the group of men participating in a One-Euro-Job in the field “art, culture and sports” are found to be the ones who gained most in terms of a higher earned income and increased regular employment probability.

Finally, again only West German men benefited from programme participations in the sector “education and research”. This group was characterised by an effect of 446 Euros, or an increase of 9.3 per cent (the average annual earned income among the matched controls was 4,820). The remaining insignificant effects were positive for women in general and negative for East German men.

Welfare receipt

Looking at the results for welfare benefit receipt by sector in table 6, the findings from the analyses of the main samples are mostly confirmed. Again, it is surprising that positive effects concerning regular employment and annual earnings did not lead to any significant negative effects on benefit receipt. For East German men in the sectors “environment protection and rural conservation” as well as “infrastructure improvement” the interpretation of the significant positive effects on welfare receipt is rather straightforward as earnings and the probability for regular employment were affected negatively by One-Euro-Jobs. The only slightly negative but insignificant effect we could detect concerned East German women in the sector “child care and youth welfare”. Moreover, effects on welfare receipt were not significant in the field “health care”. These might be hints that positive employment and earnings effects did at least not

increase the dependence on welfare for some groups in relation to the matched non-participants.

Table 6: Effects of One-Euro-Job participation on the rate of welfare benefit receipt six years after programme start – by sector (in percentage points)¹⁾

Sectors	East Germany		West Germany	
	Men	Women	Men	Women
Environment protection and rural conservation	3.36 ***	3.18 ***	3.54 ***	3.60 ***
Infrastructure improvement	4.28 ***	3.01 ***	3.78 ***	2.96 ***
Health care	2.71	0.83	1.54	1.22
Child care and youth welfare	3.53 ***	-0.35	3.85 ***	2.26 *
Counselling services	1.84	2.53 **	3.89 ***	2.61 *
Art, culture and sports	1.08	1.65	5.03 ***	4.21
Education and research	2.56 **	3.10 **	2.85 **	3.32 **

1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level

One plausible explanation for the relatively increased dependence on welfare receipt although treated individuals exhibit positive effects on regular employment and earnings might again be that non-participants in the control groups left the welfare system on average to a higher degree. Hence, due to programme involvement participants might rather remain in the “working life” and continue to receive benefits if a regular job with a sufficient income is not available.

Any labour market status

To empirically investigate this argument, we enhanced our analysis by the outcome variable “any labour market status” indicating “one” if a person is in at least one of the following states: working in a contributory or minor job, unemployed, job seeking, receiving unemployment benefit and participating in an active labour market programme. The variable “any labour market status” is “zero” if we find a person in none of these states. Table 7 presents the effects of One-Euro-Job participation on the rate of “any labour market status” six years after programme start. The support with work opportunities seemed to universally promote participations to stay in the labour force. We found significant positive treatment effects on this outcome for almost every group except of East German men in the fields of health care as well as education and research. The significant positive effects ranged between 1.8 percentage points for East German men in the sector of counselling services and 6.8 percentage points for West German men in the field of art, culture and sports (the rate of “any labour market status” among the matched controls were 81.9 and 78.3 per cent).

Table 7: Effects of One-Euro-Job participation on the rate of “any labour market status” six years after programme start – by sector (in percentage points)¹⁾

Sectors	East Germany		West Germany	
	Men	Women	Men	Women
Environment protection and rural conservation	2.41 ***	3.36 ***	3.74 ***	3.41 ***
Infrastructure improvement	1.94 ***	2.97 ***	3.66 ***	4.17 ***
Health care	0.75	3.06 ***	2.97 ***	3.80 ***
Child care and youth welfare	3.90 ***	3.29 ***	5.44 ***	5.37 ***
Counselling services	1.83 **	3.27 ***	3.97 ***	3.69 ***
Art, culture and sports	2.76 ***	3.02 ***	6.75 ***	5.28 ***
Education and research	1.56	3.66 ***	4.69 ***	4.82 ***

1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper. ***, ** and * indicate statistical significance at the 1%, 5% and 10% level

Sectoral affiliation of participants’ first regular jobs

In the analyses above we showed that positive effects of One-Euro-Jobs participation mainly occurred in work fields or sectors that could be related with an above-average expansion of contributory jobs in such sectors. To further investigate this hypothesis we now take a look at the sectoral affiliation of participants’ first regular jobs dependent on the programme domains to examine the correspondence. In the table A2 (appendix) participants’ work fields during One-Euro-Job participation are compared with the economic sectors of their first regular jobs within our six year observation period.

The economic sector categories of the first regular jobs were derived from the classification of economic branches of the Federal Statistical Office. These sector categories naturally differ from the classification of the One-Euro-Job work fields by the Federal Employment Agency. However, at least some obvious (dis)similarities of sectors that come from the different classifications can be identified. To restrict the table to the quantitatively most important sectors, we only report the four most frequent sectors of the first regular jobs for each work field of the programme.

Independent of the fields, work opportunities were placed in, far most of the participants entered the sector “real estate, renting out property, services for companies” for their first regular job after the programme. The share ranged from 34.6 per cent for One-Euro-Job in the field “health care” to 44.1 per cent for the field “environment protection and rural conservation”. One reason for the dominance of this sector is that services for companies are often provided by temporary employment agencies offering a wide range of work activities as well as positions that are comparably easy to enter for low-skilled individuals. Moreover, entries in the sector “health and social work” are particularly frequent after One-Euro-Jobs in related fields, like “health care”, “child care and youth welfare” as well as “counselling services”. In contrast, first regular jobs in the economic sector “construction” are only prevalent in the fields “environment protection and rural conservation” as well as “infrastructure improvement” which can be

assumed to include related work tasks and activities. Hence, specific work activities in the programme seemed to exert at least some influence on the sectoral affiliation of the first contributory employment. As further tabulations by gender showed⁴, the sector “health and social work” played a considerably more prominent role regarding regular job entries after One-Euro-Jobs in general for women compared to men. Across all fields, work opportunities were located in, “health and social work” was at least the second most frequent sector of women’s initial contributory job position, ranging between a share of 13.9 per cent after participating in the field of “art, culture and sports” and 32.6 per cent after a One-Euro-Job in the area of “health care”. Regular employment in “health and social work” was most prevalent after a programme involvement in the domains of “health care”, “child care and youth welfare” as well as “counselling services”, with shares of more than one fifth of the first regular jobs of the female participants in these domains. As we could identify positive effects on the rate of regular employment and earnings for these three work domains of One-Euro-Jobs earlier in this paper, this finding provides support to the hypothesis that One-Euro-Job participants in these fields profited from the boom in contributory employment in the sector “health care and social services”. This sector was characterised by an employment growth that with more than 19 per cent was more than twice as high as the employment growth for the entire economy from December 2007 to December 2013. And in this observation window more than three quarters of the contributory jobs in this sector were jobs of female employees according to statistics of the Statistics Department of the German Federal Employment Agency.

For male participants that were involved in the different programme settings the sector “health and social work” was considerably less relevant with regard to their first regular job positions. Only for male welfare recipients who took part in the field “health care” this sector was important being the second most frequent category with a share of 13.6 per cent. Men exiting other programme domains only exhibited shares between 3.3 and 7.1 per cent in this sector. In contrast, first regular jobs in the sectors “construction” and “manufacturing” were much more common for men after the involvement in the different programme settings (except of One-Euro-Jobs in the field “health care”). After five out of seven One-Euro-Job work fields, “construction” and “manufacturing” were among the top-4-rankings of the most frequent economic sectors regarding the first contributory jobs. As the contributory employment growth of about 6.5 per cent in the sector “construction” was below the average of 8.3 per cent from December 2007 to December 2013 (Statistics Department of the German Federal Employment Agency 2008, 2013a), the gender disparities concerning the sectoral affiliation of the first regular jobs might be one reason for the lower effectiveness of men’s programme participation compared to women.

⁴These results are available on request.

7 Summary and Conclusions

One-Euro-Jobs were and still are a very important welfare to work programme for welfare recipients in Germany. This study addressed the question whether this public works programme that aims at improving the employability of people with very low employment prospects is effective. As people with considerable employment impediments are targeted by the programme, it cannot be expected to improve their employment prospects quickly. It might in many cases imply that additional support by the public employment services is necessary before they can be integrated into the labour market. Therefore, we addressed the question whether longer-term effects of the programme are visible and become stable after some time. Moreover, we wanted to shed light on a second topic: Does the operational area or sector, in which a participation takes place matter for a participant groups' improvement of employment prospects. Public works programmes can have beneficial effects on the employability of participants. Our hypothesis is that the participants' gains in employability achieved during participation will lead to a considerable success of the participants in the labour market, if participation takes place in a sector that is characterised by a favourable labour demand situation. The implication for the policy makers of this hypothesis is clear. If they create "additional jobs in the public interest" they should still make sure that the participations take place in sectors, in which an increase in labour demand is expected in the years that follow.

We studied these questions with a large sample of unemployed welfare recipients that was drawn from administrative data that is quite informative on the characteristics of the individuals and their household members. We regarded the entire stock of welfare recipients who were unemployed at the end of March 2007. Our treatment group was the entire inflow into One-Euro-Jobs from this sample during the next three months. The potential control group consisted of a 20 per cent random sample of the remaining individuals who did not enter a One-Euro-Job in months April to June 2007. We estimated the effects of participation on the One-Euro-Job participants' outcomes by methods of propensity score matching so that effect estimates on the outcomes considered represent a difference between treated and matched controls. As outcomes we focused on the monthly regular employment rate and monthly rate of welfare recipients in the participant group in each month over a period of more than six years after the participant group entered the programme. Moreover, we estimated the participation effects on real annual earnings in each of the six years after programme start.

Our results on employment effects for the four main samples of men and women in East and West Germany are similar to those of earlier studies that analysed a much shorter time horizon after programme start of 20 months or three years (e.g. Hohmeyer and Wolff 2010, 2012). They demonstrate that the employment effects are small in absolute terms but still considerable when one regards the effect on the employment rate relative to the regular employment rate of the matched controls as the base level without One-Euro-Job participation.

The West German female participant group is characterised by the highest effects of up to 2.6 percentage points on their employment rate (representing a more than 12 per cent increase in their employment rate due to participation). For East German female participants we find positive effects of up to about one percentage point and for West German male participants of up to 0.7 percentage points. While our results on employment effects for West German women show that positive effects first emerge in the course of the second year after programme start, they are observed later for East German women during the fifth year after programme start and even later for West German men in the sixth year after programme start. For East German men during the entire observation window we never find positive employment effects. According to our results the positive employment effects are observed somewhat later than by Hohmeyer and Wolff (2010, 2012) who studied One-Euro-Job participants in the year 2005. That we find such effects somewhat later was to be expected because the first and second year after programme start cover the period of the Great Recession. Hence, for a while it was difficult for participants to profit from their participation by taking up regular jobs more frequently than the matched controls.

The estimates of earnings effects considered earnings from unsubsidised contributory (regular) employment, but also from minor employment and subsidised employment. Therefore, it is possible and observed in our results that positive earnings effects emerge earlier than the effects on the regular employment rate. The earnings effects become positive for East and West German women in the second year after programme start and for West German men in the third year after programme start. They are never found to be positive for East German men. Our result on the welfare receipt outcome imply an increased rate of welfare receipt for the participant groups and not a reduced rate due to One-Euro-Job participation, which behind the background of mostly positive earnings effects looks counterintuitive. However, it might be explained by One-Euro-Job participation leading to a higher or continued attachment to the labour market, even if people do not find jobs. The matched non-participants in contrast to the participants might more frequently drop out of the labour force and drop out of welfare receipt, e.g. by moving into other households of a partner or of parents with an income above the poverty line. All effects that we estimated tend to become relatively stable in the fourth to sixth year after programme start.

The results on different fields of work or sectors provide some evidence in favour of our hypothesis on the role of labour demand. If participation takes place in a sector that is characterised by a favourable labour demand situation, it leads to considerable employment effects for the One-Euro-Job participant group. Our results for female participants in the sectors “health care” and “child care and youth welfare” with orders of magnitude of 3.4 to 5.4 percentage six years after programme start demonstrate that two sectors characterised by a very high increase in labour demand during our observation window. In contrast, our results

for the sectors “environment protection and rural conservation” and “infrastructure improvement” for East Germans and in particular the negative impacts for East German male participants in these sectors are also in line with a labour demand interpretation. These activities were highly important during the 1990s up to the beginning of the millennium due to the transition process of the East German economy. In that period public works programmes with large participant numbers were dedicated to such activities. In turn it was unlikely that a large and increasing demand for regular jobs in these areas would still develop during our observation window.

The discussion on job creation schemes that place unemployed people in public or non-profit sector jobs to raise their employability often concludes that they are ineffective or that compared with other programmes they represent the least successful ones. Meta-studies analysing evaluation studies of different active labour market programmes in different countries (Card et al. 2010, 2015; Kluge 2010) based on their results argue in this direction. Martin (2015: 5) points to a broad consensus about the effectiveness of different programmes and points out that “public sector job creation schemes invariably do not work”. Our results and earlier findings on job creation schemes and One-Euro-Jobs in Germany rather are in line with different conclusions that should help to guide the design of such policies. Detrimental effects of such programmes are found, when the participants rather represent people with relatively good job finding perspectives. When concentrating such policies on the more disadvantaged welfare recipients they might become successful (Hohmeyer and Wolff 2010). It is also likely that the effectiveness is relatively high if participation is not longer-term and participants are provided with an incentive to search for work (Hohmeyer and Wolff 2012). Moreover, our results point to the importance of concentrating participation in sectors with a potential of employment growth. Policy makers have therefore a considerable scope for making policies like One-Euro-Jobs but also other public sector job creation schemes paying wages to participants work. And for people with considerable employment impediments other policies might not be effective: Many of them could not profit from participation in training schemes or become employed by general wage subsidies for private sector employers until a certain level of employability is achieved.

Future research should gain further insights into the role of labour demand for the success of public sector job creations schemes in different countries. This is also an issue for schemes like training for specific occupations. Moreover, it could be analysed to what extent a reallocation of the participants in different sectors of job creations schemes could help to improve the overall success of the programmes.

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Appendix

Table A1: Matching quality in the total sample and in the samples by sectors¹⁾

	East Germany		West Germany	
	Men	Women	Men	Women
Total sample				
Treatment group obs. on support	29183	21844	31681	16579
Treatment group obs. off support	1	0	3	3
Mean Standardized Bias after matching	0.457	0.432	0.290	0.380
Adjusted R ² after matching	0.001	0.001	0.000	0.001
<i>Samples by sectors</i>				
Environment protection and rural conservation				
Treatment group obs. on support	9880	4304	11677	2883
Treatment group obs. off support	3	1	3	4
Mean Standardized Bias after matching	0.486	0.589	0.498	0.701
Adjusted R ² after matching	0.001	0.001	0.001	0.002
Infrastructure improvement				
Treatment group obs. on support	8741	4854	10057	4752
Treatment group obs. off support	1	0	3	0
Mean Standardized Bias after matching	0.46	0.639	0.465	0.705
Adjusted R ² after matching	0.001	0.001	0.000	0.001
Health care				
Treatment group obs. on support	982	2492	3139	4099
Treatment group obs. off support	0	0	0	0
Mean Standardized Bias after matching	1.025	0.768	0.569	0.599
Adjusted R ² after matching	0.003	0.001	0.001	0.001
Child care and youth welfare				
Treatment group obs. on support	2431	3474	1522	1850
Treatment group obs. off support	0	0	0	0
Mean Standardized Bias after matching	0.797	0.71	0.881	0.857
Adjusted R ² after matching	0.002	0.001	0.002	0.002
Counselling services				
Treatment group obs. on support	2117	2691	2047	1301
Treatment group obs. off support	0	0	0	0
Mean Standardized Bias after matching	0.776	0.843	0.812	1.07
Adjusted R ² after matching	0.002	0.002	0.002	0.003
Art, culture and sports				
Treatment group obs. on support	3179	2377	1177	447
Treatment group obs. off support	1	0	0	1
Mean Standardized Bias after matching	0.656	0.853	0.999	1.74
Adjusted R ² after matching	0.001	0.002	0.003	0.008
Education and research				
Treatment group obs. on support	1849	1651	2055	1242
Treatment group obs. off support	0	0	0	0
Mean Standardized Bias after matching	0.794	1.024	0.834	1.061
Adjusted R ² after matching	0.002	0.002	0.002	0.003

1) Matching was performed using 5-nearest-neighbour-matching with replacement and without calliper.

Table A2: Work field/sector of One-Euro-Job participants in our sample and economic sector of their first regular job

Top 4 sectors of 1st regular job after One-Euro Job in...		Freq.	Per cent
Rank (freq.)	...environment protection and rural conservation		
1	Real estate, renting out property, services for companies	8,391	44.1
2	Trade, car sales and maintenance	1,501	7.9
3	Construction	1,491	7.8
4	Manufacturing	1,336	7.0
	...infrastructure improvement		
1	Real estate, renting out property, services for companies	8,810	43.4
2	Trade, car sales and maintenance	1,842	9.1
3	Health and social work	1,732	8.5
4	Construction	1,285	6.3
	...health care		
1	Real estate, renting out property, services for companies	2,936	36.4
2	Health and social work	2,037	25.3
3	Trade, car sales and maintenance	696	8.6
4	Hotels/restaurants, etc.	524	6.5
	...child care and youth welfare		
1	Real estate, renting out property, services for companies	2,626	34.6
2	Health and social work	1,083	14.3
3	Trade, car sales and maintenance	806	10.6
4	Education	584	7.7
	...counselling services		
1	Real estate, renting out property, services for companies	2342	39.6
2	Health and social work	734	12.4
3	Trade, car sales and maintenance	590	10.0
4	Hotels/restaurants, etc.	345	5.8
	...art, culture and sports		
1	Real estate, renting out property, services for companies	1773	37.4
2	Trade, car sales and maintenance	433	9.1
3	Manufacturing	383	8.1
4	Health and social work	350	7.4
	...education and research		
1	Real estate, renting out property, services for companies	2470	42.1
2	Trade, car sales and maintenance	592	10.1
3	Health and social work	531	9.1
4	Manufacturing	356	6.1