Contracting out placement services in Germany: is assignment to private providers effective for needy job-seekers?

Bernhard, Sarah; Wolff, Joachim

Preprint / Preprint
Arbeitspapier / working paper

Zur Verfügung gestellt in Kooperation mit / provided in cooperation with:
SSG Sozialwissenschaften, USB Köln

Institut für Arbeitsmarkt- und Berufsforschung
Die Forschungseinrichtung der Bundesagentur für Arbeit

IAB-Discussion Paper 5/2008

Beiträge zum wissenschaftlichen Dialog aus dem Institut für Arbeitsmarkt- und Berufsforschung

Contracting out placement services in Germany

Is assignment to private providers effective for needy job-seekers?

Sarah Bernhard
Joachim Wolff

Contracting out placement services in Germany

Is assignment to private providers effective for needy job-seekers?

Sarah Bernhard (IAB)
Joachim Wolff (IAB)

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

The “IAB Discussion Paper” is published by the research institute of the German Federal Employment Agency in order to intensify the dialogue with the scientific community. The prompt publication of the latest research results via the internet intends to stimulate criticism and to ensure research quality at an early stage before printing.

Contents

Abstract 4
1 Introduction 5
2 Institutional Setting 7
3 Evaluation Approach and Data 11
4 Results 17
5 Summary and Conclusions 22
References 24
Appendix 26

Abstract

Contracting out placement services aims at enhancing the effectiveness of placements of unemployed job-seekers through market mechanisms. This paper analyses the effectiveness of the temporary assignment of needy job-seekers to private placement services by comparing their outcomes with respect to employment, unemployment and benefit receipt with those of a suitable control group. Using recently available administrative data we apply propensity score matching to construct the control group. We regard a period after a policy reform in 2005 that introduced a new means-tested benefit, the unemployment benefit II, and emphasized the activation of needy unemployed people. Hard-to-place job-seekers usually need more effort to be placed into a job. Therefore it is an interesting question whether groups of people with different a priori employment probabilities benefit to a different extent from an assignment to a private placement service. To answer this question we analyse several subgroups separated by sex, age, migration background, occupational education and time since the last job. Our results suggest that in some cases the assignment to private providers is relatively more effective for groups of job-seekers who are rather hard to place. Despite positive employment effects for some subgroups, however our results imply that the assignment to private providers is generally ineffective and in some subgroups counterproductive regarding the goal of avoiding unemployment and benefit receipt.

JEL classification: C13, H43, J68

Keywords: Propensity score matching, evaluation of active labour market policy, public employment service, private employment service, means-tested benefit recipients

1 Introduction

New public management deals with the idea to introduce more market orientation to the public sector to enhance the cost-efficiency and effectiveness. Placement services are traditionally organised by the public employment service. Some countries introduced market systems to organise placement services: For instance Australia has privatised all placement services by introducing the Job Network. The Netherlands and Great Britain assign certain groups of unemployed to private placement services. Danes, Belgians as well as Germans use contracting out placement services as a complementary competitive element beside the public employment service (Bruttel 2005, Fay 1997, Konle-Seidl 2006).

The evaluation literature on contracting out has developed several criteria to assess the performance of tendering systems for example efficiency, effectiveness, quality, incentives and market structure (Bruttel 2005, Bartlett and Le Grand 1993, Struyven and Steurs 2005). This paper examines the effectiveness of contracting out placement services in Germany. This option became important for means-tested benefit recipients with the introduction of the Social Code II at the beginning of the year 2005: It established the new unemployment benefit II (UB II), and emphasised activation policies.

We regard a sample of needy unemployed people who were temporarily assigned to private providers of placement services. Their employment outcomes are compared with those of a control group who received placement services by the public provider. The controls are selected from a sample of means-tested unemployment benefit recipients using propensity score matching. We are also interested in effect heterogeneity. Therefore we estimate treatment effects for different age-groups, with and without migration background, different skill-groups and different periods since the end of the last job.

In Germany, the option of contracting out placement services was only established during the 1990s. It has been extended recently: Until the year 1994 only the Federal Employment Agency was allowed to provide placement services. The legal framework for contracting out subtasks of placement was introduced in the year 1998 as § 37 of the Social Code III (*Sozialgesetzbuch III, SGB III*). Such subtasks are for example profiling and case management. In 2002 a so-called placement voucher (*§ 421 g SGB III*) was introduced that was – under certain conditions – delivered to the unemployed. The placement voucher guarantees a premium for an external provider in case of a successful placement. Moreover, contracting out all placement services with the only aim of immediate placement was introduced in 2002 (*§ 37 SGB III*). Additionally, there was a very similar instrument called contracting out of reintegration services (*§ 421 i SGB III*) between 2003 and 2007. External providers were supposed to design and to put in tender innovative strategies to reintegrate unemployed. Thus there exist two quasi-market options for involving external placement providers: contracting out and the placement voucher.

Expenditures for contracting out of placement services for unemployment benefit II recipients amounted to 63 million Euro in 2005. Table 1 displays the inflow of means-tested unemploy-

ment benefit recipients and other unemployed people into private placement services in recent years. It distinguishes between the different options of such services. For means-tested benefit recipients contracting out full placement services is the prevailing model with an inflow of nearly 160 thousand participants in 2005 and about half that number in 2006. The particularly large inflow in the year 2005 is presumably much related to the introduction of the new benefit system. New local unemployment benefit II agencies were set up. In this first year after the benefit reform, these agencies had a considerable work-load with the implementation of new activation policies and were short of experienced case-managers. Hence, contracting out placement services was also used to reduce their workload.

Table 1
Stock of unemployed and number of assignments to private providers and honoured placement vouchers in thousand

	Unemployment stock (annual average)		Contracting out subtasks of placement services		Contracting out full placement services		Contracting out of reintegration services		Honoured placement vouchers	
Year	UB II recipients	Other Unemployed	UB II recipients	Other	UB II recipients	Other	UB II recipients	Other	UB II recipients	Other
2004	0	4.374	0,0	395,9	0,0	239,4	0,0	19,3	0,0	54,0
2005	2.418	2.074	115,7	86,8	157,0	66,1	19,0	16,9	14,0	37,0
2006	2.448	1.655	67,0	83,3	81,5	69,7	12,7	21,4	28,0	35,0

Source: Statistic Department of the Federal Employment Service in Germany, own calculations
Note: From 2005 onwards 69 districts in which only local authorities are in charge of administering the unemployment benefit II are excluded due to missing data.

Means-tested benefit recipients make up for a considerable share of the assignments to private placement services, even though in contrast to unemployment insurance benefit recipients do not have the right to demand such an assignment after six months of unemployment.

Evaluation results for contracting out full placement services in Germany exist either for the period before the Social Code II came into force or without taking into account unemployment benefit II recipients. Winterhager (2006a) and Winterhager (2006b) estimate effects on regular employment, subsidised employment and unemployment for persons who have been assigned to private providers at the first quarter 2004 for every month up to nine months after the assignment. They use administrative micro data and matching techniques. They find on average negative short-term effects that are largest after two months and then diminish. Only women in West Germany, older people (Winterhager 2006a) and younger people (Winterhager 2006b) benefit from their assignment to private placement services with up to three percentage points higher employment chances.

In a similar way WZB and infas (2006) approach the evaluation of private placement services. However, they quantify heterogeneous effects by sex, age, gender, region and unemployment duration for persons who have been assigned to private placement services between 2003 and 2005. They only regard the treatment effect on unsubsidised employment at the fourth month after assignment. The only significant effect they find is a negative one for large cities with high unemployment rates. In summary the temporary assignment of job-seekers to private placement services does not seem to have increased their employment chances in comparison

to unemployed who had only been advised by the public employment service. Winterhager (2006a) explains the ineffectiveness with deficits in the contract management: Providers who combined low quality with low prices were awarded by accepting their offers.

In comparison to both existing studies this paper considers more recently assigned persons and analyses a considerable longer period up to 24 months after assignment. Our paper is the first study that is concerned with the effectiveness of private placement services for means-tested benefit recipients. The new legal framework emphasises their activation. Therefore, it is a highly relevant policy question, whether private placement services considerably contribute to their integration into the labour market. In addition to the usual employment outcomes this paper takes the level of earnings in a job compared to the last job into account. Since the means-tested UB II is not an individual but rather a household based benefit the administrative data of the Federal Employment Agency enable to identify partners. For this reason it is possible to account for the employment history of partners when estimating participation probabilities.

The paper is structured as follows: Section two describes the institutional framework of the Social Code II and of private placement services. The econometric evaluation approach and the micro data that we rely on are discussed in section three. In section four we present the results on the average treatment effects on the treated for a large number of different treatment groups. We summarize these results and draw a number of conclusions in the final section five.

2 Institutional Setting

In 2005 after a job loss unemployed people received unemployment insurance (UI) benefit for 6 to 32 months, depending on age and previous history in contributory employment.[1] Provided that they pass the means-test and are capable of working, people who exhausted their UI benefit and people who have never worked or worked only for a short period of time in contributory jobs receive the tax-financed unemployment benefit II. This benefit unified the former unemployment assistance and social benefit for employable needy people with the introduction of the Social Code II in 2005.[2]

---

[1] The unemployment insurance (UI) benefit is earnings-related with a replacement rate of 67 percent for a parent and 60 percent for childless people. The UI benefit in contrast to UB II is time-limited, where the length of receipt increases with the time a recipient has contributed to unemployment insurance within a period of seven years prior to the benefit claim. The maximum duration of UI receipt though depends on age and was one year for those aged younger than 45 in the year 2005. It increased for older age groups and those older than 56 years could even receive their UI benefit up to 32 months. The maximum entitlement lengths of those older than 44 years were considerably reduced though in the year 2006; the maximum entitlement length is now 12 months except for unemployed workers aged at least 55 years, for whom it is 18 months.

[2] People who can work under the usual conditions of the labour market for at least three hours a day are regarded as capable of working. Only due to an illness or disability it is possible not to fulfil this criterion (Article 8 Social Code II).

The Federal Employment Agency and local authorities are responsible for the support services for means-tested benefit recipients. For the first time a federal and a local institution have to cooperate on the local level. Over the course of the year 2005 both responsible bodies established in most districts a consortium for advising means-tested benefit recipients (*Arbeitsgemeinschaft, ARGE*).[3]

One goal of the reform was to activate needy unemployed people including persons who have not been in contact with the Federal Employment Agency before, i.e., previous social benefit recipients or partners of previous unemployment assistance recipients. Active labour market programmes and social integrative schemes are supposed to support employable needy persons. In 2005 contracting out placement services was one of the most important active labour market programmes for unemployment benefit II recipients: There were more than 270 thousand assignments to these placement services. Programmes with more participants were a workfare programme in the public sector, the so-called One-Euro-Jobs (*§ 16 (3) SGB II*) with an inflow of more than 600 thousand people and short-term training programmes (*§ 48 SGB III*) with an inflow of more than 400 thousand people.

The effectiveness of contracting out placement services depends on several factors as labour market conditions, composition of participants, design of contract management and institutional setting within public and external providers. Evaluation results only refer to the time and place and design of contract management one analyses. For instance there is no knowledge of whether the public provider achieved improvements on placement services that result from the existence of competition with private providers. Although a general comparison of placement services by public or private providers is desirable, one can only find exemplary evidence.

Private providers operate in contrast to the public provider in a competitive way and have specific incentives for successful placements. Taken together, at first sight one could expect that private providers perform better than the public provider with respect to the placement of the target groups. Struyven (2004) identifies three basic principles to distinguish contracting out from providing placement services by the public employment service only. These principles help to explain the aspiration for more effectiveness of placement services if external providers are involved: 1) the split between principal and provider, 2) competition and 3) management based on results.

1) Placement services are traditionally offered by the public employment service only. Though in recent years placement services by private organisations have been allowed. The public sector organises the access of private providers as a purchaser or principal. A multi actor system replaces the former single actor system. The multi actor system is not centrally organised. There are fewer hierarchical levels and multi actor systems may react in a more flexible way to the local context.

---

[3] In 69 administrative districts (*Optionskommunen*) only local authorities advise means-tested benefit recipients.

2) Private organisations are expected to be more flexible and service-oriented than traditional public organisations. Competition through the market mechanism is supposed to ensure good-quality services at the lowest possible costs. At the start of the year 2005 contracting out was organised competitively among those external providers who are proposed by the Federal Employment Service. We assume that providers who have performed poorly in the recent past have been excluded in the first place from this limited competition. Moreover, providers had to achieve minimum local and factual standards as well as standards concerning their personal structure to take part in the tender. But finally quality aspects were irrelevant when choosing the winning bid. The bid with the lowest price won the tender just as in the year before.

3) Management of contracting out refers more to results than to inputs or processes. The public purchaser implements financial incentives to induce high placement rates. There was always an incentive payment in case of a successful placement for the specific time period and group we will analyse. If during the assignment period the external provider places any unemployed person into a regular contributory job that lasts for at least three months, he receives half of the incentive payment. The remaining second half is paid, provided that a client remains in that job for six months. The median (potential) incentive payment for the treated in our sample is 1,160 Euro. Apart from an incentive payment, expense allowances, which are not performance-related, are paid per assigned job-seeker. But in contrast to incentive payments, expense allowances are not always part of the contract between public and private providers. The expense allowance is relevant for about two thirds of assigned job-seekers in our sample (Table 2).

Whether private providers perform better than the public ones also depends on the placement services of the public provider at the same time, since the comparison group are needy unemployed people who receive such services from the public employment service. We regard a time period at the start of the year 2005 when the unemployment benefit II agencies just started working after a reorganization of the means-tested benefit system. A survey shows that only half of the consortiums had been able to work on a regular basis up to April 2005 (WZB, infas 2006). Processing of applications for unemployment benefit II had been the first priority among other duties such as setting up the new case management and placement services as well as contract negotiations between local and federal authorities and the establishment of personnel and organisational structures (Trube 2006). This is another reason for expecting the private placement services to be more effective than the public provider.

Bartlett and Le Grand (1993) define creaming as discrimination against more expensive hard-to-place clients. Incentive payments for every person per standardised target group and external provider amounted to the same value. For this reason it is rational for external providers to minimise their effort by placing clients with high chances of finding contributory jobs. Instruments to prevent external providers from creaming are expense allowances in conjunction with the definition of minimum service standards, homogeneous groups or different incentive payments according to employment probabilities (Struyven 2004). In 2005 standardised target groups in the tender consisted first of all of people searching vocational training. Other standardised target groups were job-seekers differentiated by specific lengths of their unemploy-

ment spells. Private providers offered a price per standardised target group. This price was not only the basis for choosing the winning bid. It fixed the amount of the incentive payment. If an expense allowance was intended in the standardised tender the price fixed the amount of this allowance as well. Remuneration and contracts with private providers are fixed before job seekers are assigned to private providers. Therefore, it is interesting to look at the distribution of potential incentive payments and expense allowances by characteristics of assigned job-seekers.

Table 2
Median previously arranged incentive payment per assigned job-seeker in Euro and share of assigned job-seekers for whom an additional expense allowance is paid, contracting out full placement services for UB II recipients, inflow from February to April 2005 (potential treatment group)

	Median previously arranged incentive payment per assigned job seeker					share of job seekers for whom an expense allowance is paid (%)				
	Total	East Germany		West Germany		Total	East Germany		West Germany	
		Men	Women	Men	Women		Men	Women	Men	Women
Total	1,160	980	977	1,200	1,200	66.4	70.4	70.7	57.7	64.1
Age										
< 25 years	998	864	864	1,368	1,260	57.0	55.1	53.9	61.3	62.5
25-34 years	1,160	1,090	1,000	1,200	1,160	70.3	71.9	74.0	66.2	67.4
35-49 years	1,150	980	980	1,200	1,160	68.4	78.6	78.0	50.7	60.7
50-57 years	1,264	1,264	1,264	1,624	1,200	75.9	86.8	85.0	58.6	72.6
Migration background										
with	1,160	1,180	1,200	1,160	1,160	81.2	94.8	97.1	63.0	71.1
without	1,133	966	944	1,200	1,200	63.5	66.2	66.8	56.4	62.6
Occupational qualification										
with	1,090	950	937	1,200	1,200	59.7	63.3	63.4	50.8	58.2
without	1,170	1,160	1,135	1,200	1,160	75.9	81.4	83.8	66.0	70.4
Age>=30 years, last unsubsidised employment in										
2004	1,160	1,000	1,000	1,200	1,160	53.3	72.9	77.8	53.3	67.5
2003 or 2002	1,160	980	979	1,200	1,160	54.6	82.4	78.9	59.7	63.7
before 2002 or never	1,180	1,180	1,135	1,400	1,160	57.6	82.5	80.1	51.6	62.8

Source: IEB V 5.01 and data mart from the Statistic Department of the Federal Employment Agency, own calculations
Note: Data refer to 11,291 UB II recipients in our potential treatment group who have been assigned to private placement services between February and April 2005. (Other sample restrictions are described in the chapter on data.) 20 % potential treatments have missing values on incentive payment and expense allowance.

The incentive payment should be the higher the lower the a priori employment prospects of the job seeker to account for the higher effort that is necessary to integrate job-seekers who are hard to place like migrants, the elderly, unskilled or persons who have not been employed for a long time. If the incentive payment does not compensate for the higher effort the effectiveness of the assignment to private providers may be affected for hard to place job-seekers. In this way placement vouchers were less effective for long-term unemployed than for other unemployed even though the second part of the incentive payment amounted up to 1,000 Euro more for long-term unemployed than for other unemployed (Winterhager, Heinze and Spermann 2006). However, the median potential incentive payments were not always higher for hard to place job seekers when contracting out placement services: i.e. the median potential incentive payment for men in West Germany amounted to 1,200 Euro independent of their occupational qualification (Table 2). Even if the median potential incentive payment for hard to place job seekers was higher than for job seekers with better job prospects the difference is relatively small: i.e. the median potential incentive payment for women with migration background in East Germany was 1,200 Euro and for those without migration background 944 Euro.

Given the higher effort that is needed to integrate hard to place clients the public provider pays more frequently an expense allowance for such clients than for others (Table 2). The value of the allowance is about 7.5 or 12.5 percent of the potential incentive payment. If there are no additional requests on placement activities and monitoring, creaming may not be prevented by paying expense allowances. Therefore, expense allowances only decrease the risk of the private provider and increase his incentive to take part in the tender.

Financial incentives may induce higher efforts for hard to place clients and may weaken discrimination for more expensive clients. Because of the payment structure of contracting out placement services creaming tendencies may occur. But creaming in the sense of concentrating placement effort on clients who are relatively easy to place may also characterise the placement strategy of public providers. Thus, it is an interesting empirical question to what extent private providers integrate hard-to-place clients to the labour market more effectively than the public ones. For this reason we analyse the effectiveness of placement for several subgroups with different employment prospects.

Private providers are interested in placing their clients in jobs that last at least half a year. The reason is that they get the second half of their incentive payment only if the client is in a job after this period. But private placement services do not benefit if their clients achieve high wage levels. Therefore, we expect the difference between assigned job-seekers and controls on the share of persons in unsubsidised jobs with at least eighty percent of earnings of the last job to be smaller than the pure employment effect without considering wage levels.

3 Evaluation Approach and Data

Evaluation Approach

When evaluating the programme effects of private placement services, the problem of unobservable possible outcomes arises. This is the fundamental evaluation problem. The Roy (1951)-Rubin (1974)-Model gives a standard framework of this problem. The model and the matching method which under certain assumptions resolves the evaluation problem are discussed in many recent papers, e.g. Caliendo and Kopeinig (2006) or Sianesi (2004). The main pillars in the model are first individuals, second the treatment, and third potential outcomes.

Every individual can potentially be in two states (treatment/no treatment) each with a possibly different outcome. As no individual can be observed in both of these two states at the same time, there is always a non-observed state, which is called the counterfactual.

Let D be an indicator for treatment, which takes the value one if a person is treated and zero otherwise. The treatment effect τ_{ATT} for a treated individual would be the difference of his outcome with treatment ($Y_i(1)$) and without the treatment ($Y_i(0)$):

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

The outcome of an individual can never be observed in the treatment and the non-treatment state at the same time, so that the causal effect in equation (1) one is unobservable. This iden-

tification problem needs to be resolved. Under certain assumptions a comparison of the outcomes of treatment group members with very similar control members identify the average treatment effect on the treated (ATT).[4]

Propensity Score Matching is one approach to identify such effects. We follow the discussion of the approach by Becker and Ichino (2002): Let us define the propensity score according to Rosenbaum and Rubin (1983) as the conditional probability of treatment where X_i is a vector of observables at values prior to treatment.

$$P(X_i) = P[D_i = 1 | X_i] = E[D_i = 1 | X_i] \tag{2}$$

In this context some conditions have to hold for identifying the treatment effect: the condition of balancing of pre-treatment variables given the propensity score ($D \perp X | P(X)$). According to this condition observations with the same propensity score have the same distribution of observables; given pre-treatment characteristics, treatment is random and treatments and control units do on average not differ with respect to pre-treatment characteristics. Next, there are the conditions of unconfoundedness ($Y(1), Y(0) \perp D \mid X$) and of unconfoundedness given the propensity score ($Y(1), Y(0) \perp D \mid P(X)$). Unconfoundedness is also labelled as the conditional independence assumption (CIA) and states that outcomes in case of treatment and non-treatment are independent from actual assignment to treatment given the propensity score.

If treatment is random within cells defined by the vector X, it is also random within such cells defined by the values of propensity score $P(X)$, which in contrast to X has only one dimension. Given the above conditions, we have

$$\begin{aligned} \tau_{ATT} &= E[Y_i(1) - Y_i(0) \mid D_i = 1] \\ &= E\{E[Y_i(1) - Y_i(0) \mid D_i = 1, P(X_i)]\} \\ &= E\{E[Y_i(1) \mid D_i = 1, P(X_i)] - E[Y_i(0) \mid D_i = 0, P(X_i)] \mid D_i = 1\} \end{aligned} \quad . \tag{3}$$

The basic idea of the matching estimator is to substitute the unobservable expected outcome without treatment of the treated $E[Y_i(0) \mid D_i = 1]$ by an observable expected outcome of a suitable control group $E[Y_i(0) \mid D_i = 0, P(X_i)]$ that has the same distribution of the propensity score as the treatment group. To implement a matching estimator, it requires the additional assumption of common support

$$0 < P(D = 1 \mid X) < 1, \tag{4}$$

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

since for individuals whose probability of treatment is either 0 or 1, no counterfactual can be found. Finally, the "stable unit treatment value assumption" (SUTVA) has to be made. It states that the individual's potential outcome only depends on his own participation and not on the treatment status of other individuals. It implies that there are neither general equilibrium nor cross-person effects.

We estimate the ATTs at different points in time after programme start (t=0):

$$\tau_{ATT,t} = E[Y_{i,t}(1) \mid D_{i,0} = 1, P(X_{i,0})] - E\{E[Y_{i,t}(0) \mid D_{i,0} = 0, P(X_{i,0})] \mid D_{i,0} = 1\} \quad (5)$$

As propensity score matching estimators we use nearest neighbour and radius matching imposing common support. Both techniques select for each treatment observation one or more comparison individuals from a potential control group. The following equation defines these estimators[5]

$$\tau_{ATT} = \frac{1}{N_{treated}} \sum_{i \in treated} \left[Y_i(1) - \sum_{j \in controls} w_{ij} \cdot Y_j(0) \right], \quad (6)$$

where $N_{treated}$ is the number of treated persons. w_{ij} is a weight defined as

$$w_{ij} = \frac{1}{N_{i,controls}}, \quad (7)$$

where $N_{i,controls}$ represents the number of controls matched to the ith treated person. With nearest neighbour matching, this number is chosen by the researcher: e.g., for each treated individual from the control group five neighbours are chosen whose propensity score differs less from that of the treated individual than those of all other control group members. In case of radius matching, all control group individuals are chosen whose propensity score does not differ in absolute terms from the one of the treatment individual by more than a given distance. In that case the number of matched controls may differ for each treated individual. For the analytical variances and hence the standard errors of these estimators see Becker and Ichino (2002). When carrying out the analysis we followed the outline from Caliendo and Kopeinig (2006).

Data

We use rich administrative data of the Federal Employment Agency for the empirical analysis. The Integrated Employment Biographies[6] (*IEB*, Version 5.1 and 6.0) contain socio-demographic characteristics and individual daily information about employment history, benefit receipt, job search history and participation on several programmes of active labour market policy. Additional information about unemployment benefit II receipt and household structure are drawn from the history of means-tested benefits (LHG, *Leistungshistorik Grundsicherung,* Version 2.0

5 For simplicity we leave away the subscript t for time after programme start.

6 Jacobebbinghaus and Seth (2007) describe in detail a sample of the Integrated Employment Biographies.

and 3.0). The household information of the LHG can be used to merge individual IEB data with the partner's IEB data. We account not only for the individual employment history but for the partner's employment history as well when estimating the propensity scores.

The potential treatment group consists of all persons who were registered as unemployed and received unemployment benefit II on 31 January 2005 and whose assignment to a private placement service started between February and April 2005. Data on treatments in the 69 districts, in which only local authorities are in charge of administering the unemployment benefit II, are not available for the period under consideration. Hence, these districts are excluded from our sample. The potential control group consists of a 20 percent random sample of the stock of unemployed unemployment benefit II recipients on 31 January 2005. Control persons did not start an assignment to private providers between February and April 2005, but they could have started an assignment later on. Treatment and control group members could have been assigned to other active labour market programmes. Both, treatment and control group are restricted to persons who got unemployment benefit II, were not older than 57 years, did not participate in any active labour market programme and did not have missing data in basic socio-demographic characteristics like age, sex, occupational qualification, migration background and East or West Germany on 31 January 2005.

The propensity scores are estimated with probit models. We account for individual heterogeneity by estimating the propensity scores and matching the control group members within several main groups and subgroups. The four main groups are men and women in East and in West Germany. These groups are divided into subgroups by age (15-24, 25-34, 35-49, 50-57 years), occupational qualification (with, without), migration background (with, without) and – only for people who are at least 30 years old – time since the end of the last job (last job in 2004, 2002 or 2003, before). The realised sample sizes are displayed in Figure 1 to Figure 4 (Appendix).[7] We use the following covariates to estimate the propensity scores:

- Individual socio-demographic characteristics (age; migration background; health restrictions; qualification),
- Characteristics of the needy household (single/partner; children; qualification of the partner),
- Individual labour market history (duration of employment, unemployment and not observable states like out of labour force; participation in active labour market programmes; receipt of unemployment assistance in December 2004; characteristics of the last job like real earnings, full-/part-time, duration since its end),
- Labour market history of the partner (duration of employment, unemployment and not observable states like out of labour force; participation in active labour market programmes),

[7] The sample sizes of different subgroups, e.g. all age-groups, need not sum up to the total sample size. The reason is that we used subgroup specific equations of the propensity score, with covariate sets that differ somewhat over various specifications. Specifications that use covariates which are partly missing for the sample lose some observations and vice versa.

– Local labour market (unemployment rate, share of long-term unemployed among the unemployed, ratio between the stock of vacancies the stock of unemployed in January 2005 as well as the percentage change of these three indicators against the previous year; type of district according to a classification of Rüb and Werner, 2007),
– Interaction effects (individual labour market history and age; partner's labour market history and age).

We estimate for every subgroup up to six different probit models. We start with the maximum number of covariates and select sets of variables that enter the next estimation. A set of covariates is kept, if the Wald-Test on the hypothesis that their parameters are jointly zero achieves a p-value that is smaller than 0.5. This threshold value is stepwise decreased to 0.1 for the following probit models. The propensity scores are computed with the resulting reduced group specific models. They always contain individual socio-demographic characteristics independent on the previous test procedures. In Table 3 (Appendix) we display the coefficients of the probit models of the broad samples of men and women in East and West Germany. Results for the smaller subgroups that we consider are available on request. We do not discuss the probit results on the selection into the programme; a detailed analysis on this topic for a similar sample is discussed in Bernhard, Wolff and Jozwiak (2006).

We assess treatment effects for five outcome variables that are available for different time periods. We defined all outcomes as success criterions since positive average treatment effects will indicate a positive impact of assignment to private providers and vice versa (number of months since assignment for which they are available in square brackets):

– unsubsidised employment that is subject to social insurance contribution [20],
– every unsubsidised employment including minor employment [20],
– unsubsidised employment that is subject to social insurance contribution with at least 80 percent of the last real wage (If somebody has never been employed he achieves this outcome with every contributory employment independent from his last wage. People who have ever been employed only achieve this outcome criterion if they earn at least 80 percent of their last real wage.) [8],
– not registered unemployed and not participating at any active labour market programme [20],
– no unemployment benefit II receipt [24].

The outcome variables stem from different micro data sets: For the outcome unsubsidised contributory employment and unsubsidised contributory or minor employment we combined two data sources: The data mart of the Statistics Department of the Federal Employment Agency and the IEB. The data mart provides information on contributory employment and minor employment of our sample members at the beginning of calendar months until May 2007.[8] We used these data, since the IEB 6.0 provides such information only until December 2005. However, the IEB 6.0 has quite recent information on active labour market policy participation

[8] However, the most recent employment data is still to some extent incomplete.

and hence subsidised employment until December 2006. We combined these two pieces of information to classify whether individuals at the first day of a calendar month held an unsubsidised contributory job or minor job. In turn we could compute the related outcome variables for up to 20 months after programme start. Moreover, from the IEB information on contributory jobs we could also compute, whether the contributory unsubsidised jobs of our sample members achieve at least 80 percent of the last (real) wage. Though this information could only be computed for up to eight months after assignment.

Two other outcome variables were considered which do not focus on employment: Whether people are not registered as unemployed nor participating in any active labour market programme and whether they do not receive unemployment benefit II. The first of these two outcomes stems from the IEB 6.0 and is available for up to 20 months after assignment. The second outcome came from the new data set on the history of means-tested benefits (*LHG, Version 3.0*), which provides information for up to 24 months after assignment. These two outcomes were computed for every first day of a calendar month since assignment as well.

To estimate the average treatment effects on the treated for different points in time since programme start, it is necessary to assign potential start dates to the control group. The hypothetical start month of each control group member is a random draw of the observed distribution of programme start months of the treatment group. When computing the random programme start, we do not distinguish between different distributions within the subgroups.

We execute six different matching algorithms to check for sensitivity of the estimated ATTs. To enhance the quality of the control group we generate a group specific caliper for some matching algorithms: It is the 90^{th} percentile of the distribution of the difference between the propensity scores of treatment and control group members that result from one-to-one nearest neighbour matching with replacement. Using this 90^{th} percentile as a caliper eliminates the worst 10 per cent potential controls. We execute the following matching algorithms:

- one-to-one nearest neighbour matching without replacement and group specific caliper,
- one-to-one nearest neighbour matching with replacement,
- one-to-one nearest neighbour matching with replacement and group specific caliper,
- one-to-five nearest neighbour matching with replacement,
- one-to-five nearest neighbour matching with replacement and group specific caliper,
- radius matching with caliper 0.001,
- radius matching with group specific caliper.

Average treatment effects computed with different matching algorithms hardly differ from each other: The confidence intervals of the average treatment effects computed by a radius matching with caliper 0.001 comprise most of the estimated effects by the other matching algorithms. We only present results from radius matching with caliper 0.001, because it produces on average the best control group with the smallest standardised bias (Rosenbaum and Rubin 1985). Figures 1 to 4 (Appendix) show the mean standardised bias before and after matching for every subgroup. The remaining bias after matching never rises above 2.7 percent.

Moreover t-tests show that the hypothesis on equality of means off the covariates can not be rejected after matching as displayed by Table 4 to Table 7 (Appendix).[9] Hence, we achieved a very good balancing.

We also carried out another sensitivity analysis to shed some light on the issue how sensitive the estimated treatment effects are to violations of the unconfoundedness assumption. If there are unobserved variables affecting assignment to private providers and the outcome variable simultaneously, a so-called hidden bias could exist. With the help of a Rosenbaum bounds analysis, we can determine how strongly an unobserved variable must influence the assignment process to undermine the implications of the matching analysis. It shows how strong neglected unobserved factors have to change the odds ratio, so that our results overestimate the treatment effect.

We applied the Mantel-Haentzel statistic using the STATA ado-file "mhbounds" by Becker and Caliendo (2007) and calculated the test statistic for the outcomes in every month after assignment for every subgroup that we considered. We only report here bounds for men and women in East and West Germany for the outcome unsubsidised contributory employment in the 20th month. We report the bounds for the nearest neighbour matching with one neighbour and without replacement, as the mhbounds command can be applied for this matching algorithm (Becker and Caliendo, 2007).

The effects of treatment on the employment outcome for East Germans were anyway not statistically significant applying this method. But for West Germans they were well-determined and positive. Nevertheless, already with unobservable influences that change the odds ratio of treatment by a factor of 1.06 for men and 1.14 for women in East Germany the ATTs would no longer be well-determined.

4 Results

The estimated ATTs for the three outcomes unsubsidised contributory employment, no unemployment benefit II receipt and neither registered as unemployed nor participating in active labour market policy are presented in Figures 1 to 4 (Appendix) for men and women in East and West Germany. The figures plot the ATTs against the months since programme start. The t-statistics were computed using analytical standard errors.

For the broad samples of men and women in East and West Germany every first graph in Figure 1 to 4 (Appendix) shows considerable and well-determined locking-in effects during the first four months after assignment: Job-seekers who have been recently assigned to private placement services have lower chances to be in unsubsidised contributory employment than the control group. But the difference in employment rates is never more than four percentage

[9] We display these statistics on match quality with respect to single covariates for the four broad samples of men and women in East and West Germany only. For the samples that distinguish further by age, migration background, occupational qualification and time since last job such statistics are available on request.

points. A potential reason for the locking-in effect is that private placement providers in a first step have to get to know their new clients and find suitable jobs that are likely to last six months at least in order to receive the whole incentive payment. In contrast the public providers already know their clients and do not need to place them into this specific type of jobs. Five months after assignment the locking-in effects disappear and clients of private placement services are more likely to be employed in an unsubsidised contributory job than the control group: The differences in employment rates tend to be slightly higher for West German clients of private placement providers as opposed to East German ones and only for West Germans they are nearly always well-determined. Compared with the matched controls 20 months after assignment employment rates are two to four percentage points higher for clients who have been assigned to a private provider (Table 8).

Table 8
Average treatment effects on the treated (percentage points) on unsubsidised contributory employment, radius matching with caliper 0.001

	East Germany				West Germany			
	Men		Women		Men		Women	
	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start
Total sample	0,4	2,3 ***	0,3	2,1 ***	0,8	2,3 ***	1,8 **	3,8 ***
Age								
15-24	1,9	4,8 ***	0,2	3,1 *	-2,0	2,3	4,2 *	2,5
25-34	-1,2	1,8	-0,5	0,0	0,6	2,3	2,5	5,5 **
35-49	-0,3	0,7	-0,5	1,3	2,1 **	1,6	-1,2	2,8 *
50-57	-1,8 *	-0,8	-2,2 ***	-1,0	-0,6	1,9	4,0 *	4,0 *
Nationality								
Germans	0,6	2,7 ***	0,2	1,7 **	0,3	1,9 **	1,7 *	3,9 ***
Foreigners/migrants	0,1	2,0	0,6	4,6 **	3,7 **	5,2 ***	3,2	4,2 *
Occupational qualification								
No qualification	0,1	3,4 ***	0,1	4,3 ***	0,7	1,6	1,8	3,3 **
qualification	0,6	1,8 *	0,5	0,9	1,0	3,1 ***	1,3	3,9 **
Age >= 30 and last regular job in								
2004	-2,4	-0,9	-4,1 ***	-0,6	0,9	1,2	-3,3 *	2,1
2002 to 2003	1,2	0,2	2,4	5,7 **	2,2 *	2,1	3,4 *	5,2 **
Before 2002 or never	-1,0 **	0,7	0,9	0,9	1,8 **	2,5 **	1,6	3,3 **

Level of significance 0.01***/0.05**/0.10* based on analytical standard errors
Note: Unemployment benefit II recipients, treated assigned to private placement services between February and April 2005
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

These effects seem to be higher, if we regard the employment rate of assigned persons relative to the employment rate of the matched controls, instead of just regarding absolute differences in employment rates. The employment rate of the matched controls is in East Germany about 18 percent for men and 14 percent for women and in West Germany roughly 24 percent for men and 21 percent for women 20 months after programme start (Table 9). Thus, at this point in time treatment raised the employment rates of the treated by about ten to nineteen percent.

Table 9
Regular employment rate of the matched controls (percent)

	East Germany				West Germany			
	Men		Women		Men		Women	
	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start	6th month after programme start	20th month after programme start
Total sample	9,7	18,5	8,1	14,2	13,7	23,8	13,0	20,6
Age								
15-24	12,5	25,4	12,9	21,2	21,9	36,2	19,9	30,9
25-34	11,9	21,7	9,5	16,4	17,9	30,6	14,2	22,0
35-49	7,9	14,3	6,6	11,4	11,1	19,8	11,9	19,7
50-57	5,6	9,4	4,2	7,1	5,6	8,8	5,8	8,0
Nationality								
Germans	9,4	18,5	8,7	14,9	13,0	23,4	13,5	21,6
Foreigners/migrants	10,1	16,5	4,5	10,0	15,4	24,5	10,4	16,2
Occupational qualification								
No qualification	8,0	14,2	6,1	10,1	12,5	21,1	10,1	15,0
qualification	10,7	21,0	9,2	16,4	15,0	26,4	16,3	26,5
Age >= 30 and last regular job in								
2004	17,4	26,3	13,0	18,7	19,7	29,9	19,0	26,5
2002 to 2003	7,3	15,0	6,6	13,0	9,7	19,8	9,7	18,4
Before 2002 or never	2,4	6,8	1,8	5,7	3,2	7,6	3,2	6,8

Note: Unemployment benefit II recipients, results form radius-caliper matching with caliper 0.001
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

We also estimated treatment effects for two alternative employment outcomes. These results are available on request: The first of them does not only count unsubsidised contributory as a success but also minor employment. Minor employment reduces dependency on benefits as well and is an option that is much easier to achieve for hard to place job-seekers. The estimated ATTs for this outcome differ little from the ones for unsubsidised contributory employment only because for our analysed sample private providers got the incentive payment if their clients started a contributory job only. From 2006 onwards standardised tenders for unemployment benefit II recipients always grant placements to minor employment with a reduced incentive payment. It will be interesting to know whether this had an impact on the effectiveness of assignment to private placement services.

The second alternative employment outcome is unsubsidised contributory employment with a wage level of at least eighty percent of the previous wage. However, this outcome is currently only available up to eight months after programme start, so that mostly locking-in effects are observed. Though the effects differ little from the ones for unsubsidised contributory employment, they tend to be somewhat weaker, the negative ones as well as the positive ones. That is to say private providers may tend to be more effective on placing job-seekers in unsubsidised contributory employment than on placing them in jobs with high wage levels simply because they do not benefit if their clients achieve high wage levels. But this evidence is based on a very short observation window and small differences.

For the four broad samples of men and women in East and West Germany we also find that assignment to private providers did not reduce the probability of being unemployed or participating in ALMP. For this outcome the locking-in effects in the first six months are considerably stronger than for the employment outcome: They range from about six to eleven percentage points below zero. This is because job-seekers who have been assigned to private providers remain registered unemployed during their assignment. Even though in the sixth and seventh month these effects become less strong, they remain significantly below zero (up to minus five

percentage points). Apparently a larger share of clients of private providers than of the matched controls is still unemployed or in ALMPs. Moreover, the matched controls in contrast to clients of private providers may have found other ways than employment to end the unemployment status: A general retreat from job search due to child rearing, transitions into full-time education, self-employment and (early) retirement are some of the available options, which cannot be observed in the data.

Similarly, our results imply that the assignment to private providers does not contribute avoiding dependency on unemployment benefit II receipt. Also here we find a significant locking-in effect that converges sooner or later to zero. That means there is no difference between assigned persons and the control group with respect to ending the unemployment benefit II receipt.

The assignment to private placement services may affect the labour market performance of distinct groups of needy job-seekers in different ways because hard to place job-seekers may need higher efforts to place them into a job. We considered the following age-cohorts: 15-25, 25 to 34, 35 to 49 and 50 to 57 year olds. Moreover, we distinguished between assigned persons with and without migration background as well as with and without an occupational qualification. For people aged at least 30 years, we also estimated effects for assigned persons who ended their last contributory employment in three different periods: 2004, 2002 and 2003, and before 2002 or never employed.

Table 9 displays the employment rates of the matched controls and demonstrates that the subgroups differ substantially in their employment prospects: 20 months after assignment they range from six (East German women, last employment before 2002 or never employed) up to more thirty-six percent (young men in West Germany).

With respect to the outcome unsubsidised contributory employment we find some heterogeneous results for different age groups expect for West German men (Appendix Figures 1 to 4). For East Germans it is only the youngest age-group where effects are positive and considerable with an ATT of close to five percentage points 20 months after assignment even though for women the positive impact is well-determined only at a few points in time after assignment. For West German women aged older than 50 years our results imply that the policy is effective; the employment effects are often close to five percentage points. This is remarkable, since according to our results for the matched controls their chances of being employed without treatment would have been only eight percent 20 months after assignment.

For young male and even more so for young female job-seekers we find much higher locking-in effects than for the older age-groups and all other subgroups, when we regard the outcome of neither being registered unemployed nor taking part in ALMPs. This presumably reflects the fact that the below 25 year old control group more likely exits into non-observable states like full-time education or parental leave.

People with migration background have lower employment probabilities for instance because of language problems or discrimination. Though for our sample this is not always true. Table 9

shows that for West German men it is actually the matched controls of the migrants and not of Germans without migration background that have the better re-employment perspectives. And private providers have been very effective in placing West German men with migration background in comparison to those without migration background: From the fourth month onwards after assignment clients of private providers with migration background have around five percentage points higher employment probabilities than controls, while for those without migration background employment chances are at most two percentage points higher. Also for females in the East it is rather the treated with than without migration background with the higher ATTs on the employment rates at the end of the observation window.

Assignment of hard to place clients to private providers has not only been more effective for West German male migrants and East German female migrants but also for job-seekers without occupational qualification. Private placement services have been more effective when it comes to integrating job-seekers without and not with an occupational qualification into the labour market (Appendix Figures 1 to 4). This holds for East Germans nearly at all points in time and sometimes also for West German women.

The effectiveness of private placement services also varies somewhat over different periods in which the last job of their clients ended. Here we only regarded people aged at least 30 years because many younger job-seekers have never had a job at all due to vocational education. Job-seekers who have been employed in the year before their assignment (2004) did not benefit. On the contrary significant negative effects temporarily occur on all three outcomes. Apparently this group finds new jobs more effectively on their own or with the help of public providers respectively. (This does not hold for West German men.) Moreover, compared with women who were last employed in 2004 or before 2002 or never, women who lost their last regular job in the years 2002 or 2003 are characterised by high positive effects on employment rates: 20 months after assignment they reach even five to six percentage points. That is to say long-term unemployed job-seekers who have not been unemployed for more than three years seem to benefit most of the assignment to private placement services.

Taken together, we often found that the policy effectively integrates some groups of job-seekers into regular jobs and many belong to groups who are usually hard to place like people with migration background or without occupational qualifications or long unemployment durations. In turn the unemployment benefit II agencies could improve the effectiveness of the private placement services by involving them more in the placement of such groups of people. Yet, very likely this is not an option for needy people with extremely low chances of finding a job. For this group other activation policies may have to come beforehand. Finally, despite positive employment effects for some subgroups our results imply that the assignment to private providers is generally ineffective and in some subgroups counterproductive with respect to the goal of avoiding unemployment benefit II receipt.

5 Summary and Conclusions

Our study was concerned with the effectiveness of private placement services for means-tested unemployment benefit II recipients. The inflow of needy unemployed into private placement services during the period February to April 2005 are our treatment group. It was restricted to people who were already needy and unemployed by 31. January 2005. The potential control group comes from a 20 percent random sample of the needy unemployment stock at that date and who were not assigned to private placement services between February and April 2005. We estimated with matching techniques treatment effects on the treated for various employment outcomes as well as an outcome "neither being registered as unemployed nor participating in ALMP" and "no unemployment benefit II receipt".

Our results for all outcomes point to locking-in effects of private placement services in the first four to five months after the start of treatment. This may be surprising, because the treated should be placed in jobs by the private placement providers and these providers in contrast to the public ones can concentrate on the job placement task. But it is only surprising at first sight: The private providers need to get to know their clients. Moreover they only receive the second half of the incentive payment if they place their clients into jobs that last for at least six months. For that latter reason they may be choosier with respect to the expected length of job offers than the unemployment benefit II agencies.

After the locking-in effects disappeared we find some positive treatment effects on the treated during the next 15 months. They are nearly always significant for West German participants but frequently insignificant for the East German ones. But 20 months after assignment they are well-determined for all these groups: Our estimates imply that their employment rates are raised by about two percentage points for East German participants and West German male participants and nearly four percentage points for West German female participants. Yet for the outcome neither unemployed nor participating in ALMP and the outcome no unemployment benefit II receipt participation is not effective: the estimated ATTs are often near zero for these outcomes at the end of our observation window; for the West Germans and the first of these two outcomes they are even sometimes negative and significant.

When we regard variation of the treatment effects for all outcomes and for specific subgroups that differ by age, migration background, occupational qualification or time since last unsubsidised contributory employment we find some effect heterogeneity. Our results suggest that in some cases the assignment to private providers is particularly effective for groups of jobseekers who are rather hard to place. These are men with migration background in West Germany, all East Germans without occupational qualification, East German men below 25 years, West German women about 49 years and all women who are at least 30 years old and had their last job two or three years before they have been assigned. For them the effects on the employment outcome are positive and well determined for a broader time period after the locking-in effects had diminished. Moreover during this period there is no well-determined negative impact on other outcome variables. That is to say employment prospects have be-

come better for these groups due to the assignment to private providers and at the same time the probability to be unemployed or an unemployment benefit II recipient has not changed.[10]

Why have these subgroups benefited more than others? Variation in the median amount of potential placement incentive payment may explain this fact only in one case: For East Germans with different occupational qualifications. The median potential incentive payment for this subgroup was 1,160 Euro for East German men with an occupational degree (1,135 Euro for women) and was therewith about 200 Euro higher than for East Germans with no occupational qualification (Table 2). But other subgroups for whom the assignment has been particularly effective, have the same or lower median potential incentive payments than their counterparts. Apparently the placement effort of public providers was characterised to some extent by creaming. It may be traced back to the fact that unemployment benefit II agencies have been established over the course of the year 2005.

Employment probabilities for job-seekers who have been employed in the year before their assignment were adversely affected by treatment. Negative effects temporarily occur on all three outcomes. Apparently this group finds new jobs more effectively on their own.

Our findings for the subgroups of needy unemployed differ also from former results of evaluation studies that rather regarded all unemployed (Winterhager 2006a, Winterhager 2006b, WZB and infas 2006). As described in section one, these studies usually found that the private placement services are mostly ineffective: only few specific groups like West German women, younger and aged job-seekers benefit from the assignment. Since these studies and our study were carried out in different time periods and addressed different treatment groups, one cannot easily interpret these differences. One reason for our more optimistic results may be that public placement services put less effort into placement for needy unemployed than for all unemployed people, since the needy unemployed are less often regarded as employable and are rather assigned to other programmes like One-Euro-Jobs, a workfare programme. Another reason may be that in the specific period after the introduction of the new Social Code II the workload of the unemployment benefit II agencies with other tasks than placement services was particularly high. A comparison of the effectiveness of the private placement services for unemployment benefit I and unemployment benefit II recipients at the same period of time could shed some more light on this issue.

Further research should regard a longer time horizon after assignment, so that we can evaluate whether the treatment effects are permanent. This was not yet possible with the very recent data at hand. With future micro data, we will also regard whether private placement

[10] Employment prospects for West German women older than 49 years have become better and at the same time the probability to be unemployed or an unemployment benefit II recipient has increased due to the assignment. Even so this group benefited from the assignment because negative effects may only result from control group members who withdraw from the labour market due to retirement or because the partner found a job. As a result of the assignment to private providers this group continues job search instead of dropping out of the labour force.

services are effectively integrating needy unemployed into jobs that are stable and we can evaluate effects on earnings over a more considerable period of time. Moreover, we will study whether contracting out only subtasks of placement is effective for the participants. Our micro evaluation study cannot demonstrate whether the policy leads to higher employment rates at a macro level. With regional panel data though the effects of private placement services on the employment rate or the matching function will be quantified, in order to fill this gap.

References

Bartlett, W., and J. Le Grand (1993): Quasi-Markets and social policy, London: Macmillan.

Becker, S. O., and M. Caliendo (2007): Sensitivity Analysis for Average Treatment Effects, Stata Journal, 7(1): 71-83.

Becker, S. O., and A. Ichino (2002): Estimation of Average Treatment Effects based on Propensity Scores, Stata Journal, 2(4): 358-377.

Bernhard, S., J. Wolff, and E. Jozwiak (2006): Selektivität bei der Zuweisung erwerbsfähiger Hilfebedürftiger in Trainingsmaßnahmen oder zu privaten Vermittlungsdienstleistern. Zeitschrift für ArbeitsmarktForschung, 39(3-4): 533-556, Nürnberg.

Bruttel, O. (2005): Die Privatisierung der öffentlichen Arbeitsvermittlung. Zeitschrift für Arbeitsmarkt Forschung 38(1): 7-29.

Caliendo, M., and S. Kopeinig (2008): A Practical Guidance for the Implementation of Propensity Score Matching, forthcoming in Journal of Economic Surveys 22(1).

Fay, R. G. (1997): Making the Public Employment Service More Effective through the Introduction of Market Signals. OECD Labour Market and Social Policy Occasional Papers, No. 25. Paris: OECD.

Heckman, J., R. LaLonde, and J. Smith (1999): The Economics and Econometrics of Active Labor Market Programmes, in Handbook of Labor Economics, Volume III, ed. By O. Ashenfelter, and D. Card: 1865-2097. Amsterdam: North Holland.

Jacobebbinghaus, P., and S. Seth (2007): The German Integrated Employment Biographies Sample IEBS. Schmollers Jahrbuch 127(2): 335-342.

Konle-Seidl, R. (2006): Zum Beitrag von Oliver Bruttel (ZAF 1/2005, „Die Privatisierung der öffentlichen Arbeitsvermittlung: Erfahrungen aus Australien, den Niederlanden und Großbritannien"), Zeitschrift für ArbeitsmarktForschung 39(2): 299-305.

Rosenbaum, P. R., and D. B. Rubin (1983): The Central Role of the Propensity Score in Obersvational Studies for Causal Effects, Biometrica, 70: 41-50.

Rosenbaum, P. R., and D. B. Rubin (1985): Constructing a Control Group Using Multivariate Matched Sampling Methods that Incorporate the Propensity Score, The American Statistician 39(1): 33-38.

Rosenbaum, P. R. 2002: Observational Studies. 2nd ed. New York: Springer.

Roy, A. (1951): Some Thoughts on the Distribution of Earnings, Oxford Economic Papers, 3(2): 135-145.

Rubin, D. B. (1974): Estimating Causal Effects to Treatments in Randomised and Nonrandomised Studies, Journal of Educational Psychology, 66(5): 688-701.

Rüb, F., and D. Werner (2007): Typisierung von SGB II-Trägern, Institut für Arbeitsmarkt- und Berufsforschung Forschungsbericht Nr. 1/2007, Nürnberg.

Sianesi, B. (2004): An Evaluation of the Swedish System of Active Labour Programmes in the 1990s, Review of Economics and Statistics, 86(1): 133-155.

Struyven, L. (2004): Design choices in market competition for employment services for the long-term unemployed. OECD working paper 21.

Stuyven, L., and G. Steurs (2005): Design and redesign of a quasi-market, Journal of European Social Policy, 15 (3): 211-229.

Trube, A. (2006): Moderne Dienstleistungen am Arbeitsmarkt oder funktionaler Dilettantismus? Kritische Anmerkungen zu den Erfolgschancen der Arbeitsgemeinschaften für die Grundsicherung und Förderung von Arbeitsuchenden nach SGB II, Neue Praxis, 36 (1): 68-79.

Winterhager, H., A. Heinze, and A. Spermann (2006): Deregulating job placement in Europe: A microeconometric evaluation of an innovative voucher scheme in Germany, Labour Economics 13: 505-517.

Winterhager, H. (2006a): Private job placement services. A microeconometric evaluation for Germany, ZEW-Discussion-Paper 026/06, Mannheim.

Winterhager, H. (2006b): Mikroökonometrische Analyse der direkten Effekte von Beauftragungen mit der gesamten Vermittlung. Kruppe, T. (ed.): Private Vermittlung als Unterstützung. Eine Evaluation von Vermittlungsgutscheinen und Beauftragungen Dritter. Beiträge zur Arbeitsmarkt- und Berufsforschung, 301, Nürnberg.

WZB, and infas (2006): Evaluation der Maßnahmen zur Umsetzung der Vorschläge der Hartz-Kommission: Arbeitspaket 1: Wirksamkeit der Instrumente, Modul 1a: Neuausrichtung der Vermittlungsprozesse. Bericht 2006. Berlin, Bonn.

Appendix

Table 3

Probit estimates – probability of assignment to private placement services from February to April 2005 for unemployment benefit II recipients registered as unemployed in January 2005

	East Germany				West Germany			
	Men		Women		Men		Women	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Age in years	(reference: 15-24)							
25-29	-0,442***	*0,071*	-0,283***	*0,061*	-0,325***	*0,042*	-0,362***	*0,043*
30-34	-0,426***	*0,071*	-0,278***	*0,061*	-0,401***	*0,043*	-0,360***	*0,043*
35-39	-0,491***	*0,071*	-0,377***	*0,061*	-0,423***	*0,042*	-0,409***	*0,043*
40-44	-0,530***	*0,071*	-0,385***	*0,060*	-0,510***	*0,042*	-0,466***	*0,042*
45-49	-0,557***	*0,072*	-0,471***	*0,061*	-0,371***	*0,041*	-0,368***	*0,042*
50-57	-0,651***	*0,072*	-0,583***	*0,062*	-0,590***	*0,043*	-0,544***	*0,042*
With migration background	0,232***	*0,024*	0,150***	*0,028*	-0,071***	*0,018*	-0,093***	*0,024*
Impairmant of health or disabled	-0,126***	*0,023*	-0,126***	*0,030*	-0,140***	*0,021*	-0,215***	*0,032*
Education	(reference: Secondary school, vocational education)							
No secondary schooling degree and no vocational education	-0,042	*0,025*	-0,045	*0,032*	-0,090***	*0,022*	-0,081**	*0,031*
Secondary school, no vocational education	-0,006	*0,024*	0,005	*0,029*	-0,051**	*0,019*	-0,056*	*0,026*
GCSE or A-level, no vocational education	0,046	*0,030*	-0,049	*0,034*	-0,110**	*0,033*	0,014	*0,037*
GCSE, vocational education	-0,003	*0,018*	0,002	*0,022*	0,030	*0,025*	0,042	*0,029*
A-level, vocational training or college	-0,059	*0,036*	-0,070	*0,039*	0,023	*0,028*	-0,052	*0,038*
Looking only for a part-time job			0,106***	*0,030*				
Household context	(reference: no partner, no children)							
Children, no child younger than six years	0,048	*0,028*	0,022	*0,021*	0,080**	*0,027*	-0,019	*0,024*
Children younger than six years	0,044	*0,034*	-0,072**	*0,026*	0,060	*0,031*	-0,150***	*0,032*
Married or unmarried partner in household	0,037	*0,028*	0,047	*0,025*	0,132***	*0,025*	0,064	*0,035*
Partner in houshold with vocational education	-0,141***	*0,029*	-0,128***	*0,029*	-0,054	*0,032*		
Partner participated in ALMP 01/2000-01/2005					-0,068*	*0,029*	-0,064	*0,038*
Partners more than 12 months out of labour force 01/2000-12/2004							-0,089*	*0,040*
Partners more than 12 months regular employed 01/2000-12/2005	-0,088*	*0,035*						
Cumulated duration of unemployment 02/2004-01/2005	(reference: 1-3 months)							
4-6 months	0,225***	*0,067*	0,348***	*0,063*			0,163***	*0,042*
7-9 months	0,326***	*0,067*	0,330***	*0,065*			0,162***	*0,044*
10-12 months	0,378***	*0,065*	0,373***	*0,064*			0,137**	*0,043*
Unemployment benefit recipient in 12/2004	0,059*	*0,024*	0,090***	*0,025*	0,164***	*0,024*	0,139***	*0,029*
ALMP participation during 02/2000-01/2005	(reference: no ALMP)							
Private employment subsidy	0,011	*0,024*	-0,045	*0,031*	0,031	*0,068*		
Job creation scheme	-0,017	*0,017*	0,044*	*0,019*	0,118*	*0,051*		
Start-up subsidy	-0,006	*0,048*	0,023	*0,070*	0,169	*0,137*		
Practical short-term training	-0,033	*0,024*	0,029	*0,030*	0,018	*0,048*		
Classroom short-term training	0,127***	*0,015*	0,109***	*0,017*	0,099*	*0,039*		
Further vocational training	0,002	*0,017*	-0,002	*0,019*	0,143**	*0,045*		
Other ALMP	-0,047*	*0,021*	-0,002	*0,023*	-0,158***	*0,048*		
Duration since end of last ALMP 01/2000-01/2005	(reference: 25 months and longer or no ALMP)							
1-12 months					0,049	*0,050*	0,149**	*0,046*
13-24 months					-0,089	*0,062*	0,024	*0,081*
Cumulated duration out of labour force 02/2004-01/2005	(reference: 0 months)							
1-6 months	-0,067**	*0,022*	-0,112***	*0,027*	-0,134***	*0,020*	-0,139***	*0,028*
7-11 months	-0,045	*0,045*	-0,141**	*0,044*	-0,127**	*0,039*	-0,103*	*0,045*
12 months	-0,360***	*0,081*	-0,350***	*0,061*	-0,338***	*0,057*	-0,290***	*0,053*
Cumulated duration out of labour force 02/2000-01/2004	(reference: 0 months)							
1-6 months	-0,095***	*0,018*			-0,099***	*0,018*		
7-12 months	-0,055*	*0,025*			-0,101***	*0,025*		
13-18 months	-0,083*	*0,036*			-0,091**	*0,031*		
19-24 months	-0,126**	*0,039*			-0,062	*0,035*		
25-30 months	-0,112*	*0,047*			-0,111*	*0,044*		
31-36 months	-0,143**	*0,049*			-0,104*	*0,047*		
37-42 months	-0,166**	*0,052*			-0,076	*0,051*		
43-48 months	-0,217***	*0,046*			-0,133**	*0,048*		
Time since end of last contributory job	(reference: more than 48 months [14 years] or none contributory job)							
1-12 months					-0,006	*0,025*	-0,023	*0,035*
13-24 months					0,002	*0,024*	0,027	*0,035*
25-48 months					0,061**	*0,021*	0,056	*0,034*
49 months - 14 years							0,019	*0,035*
Last monthly real wage	(reference: None contributory job for at least 14 years)							
1-400 Euro					0,012	*0,048*		
401-800 Euro					-0,021	*0,041*		
801-1200 Euro					0,078*	*0,037*		
1201-1600 Euro					0,012	*0,036*		
1601-2000 Euro					0,051	*0,036*		
2001 Euro and more					0,062	*0,036*		
missing in real wage					-0,091	*0,050*		
Cumulated duration of minor employment 01/2000-12/2004	(reference: 0 months)							
1-12 months	-0,028	*0,017*						
13-24 months	-0,079*	*0,031*						
25-60 months	-0,024	*0,037*						
Vocational training between 01/2000-12/2004					0,156***	*0,036*		

Table 3 continued

Probit estimates – probability of assignment to private placement services from February to April 2005 for unemployment benefit II recipients registered as unemployed in January 2005

	East Germany				West Germany			
	Men		Women		Men		Women	
	Coeff.	SE	Coeff.	SE	Coeff.	SE	Coeff.	SE
Regional labour market (district level)								
Unemployment rate 01/2005	0,057***	*0,003*	0,065***	*0,004*	-0,037***	*0,004*	-0,033***	*0,006*
Percentage change local unempl. rate Jan. /2005/ Jan. 2004	-0,017***	*0,002*	-0,011***	*0,002*	-0,002	*0,001*		
Share of long-term unemployment 01/2005 (in percent)	-0,027***	*0,002*	-0,031***	*0,002*	-0,026***	*0,002*	-0,016***	*0,002*
Percentage change of long-term unempl. share Jan. 2005/ Jan. 2004	-0,026***	*0,001*	-0,024***	*0,001*	0,002	*0,001*	0,006***	*0,001*
Vacancy-unemployment ratio 01/2005			11,104***	*1,596*	-0,791**	*0,272*	-0,689	*0,375*
Percentage change vacancy-unempl. ratio Jan. 2005/ Jan. 2004	0,002***	*0,000*	0,001***	*0,000*	0,003***	*0,000*	0,003***	*0,000*
Missing in region	0,247	*0,156*	0,617***	*0,183*	-1,468***	*0,105*	-0,898***	*0,124*
Type of regional labour market (district level)	(reference: Cities: below average LMC, high share of long-term unemployed)							
Cities in West Germany: average labour market condition (LMC), high GDP, large share of long-term unemployed					0,289***	*0,040*	0,269***	*0,050*
Rural areas in West Germany: very good LMC, low share of long-term unemployed					0,038	*0,048*	0,141*	*0,062*
Rural areas in East Germany: severe LMC, low GDP per head	-0,237***	*0,019*	-0,143***	*0,024*				
Mainly rural areas in East Germany: very severe LMC, low GDP per head, large share of long-term unemployed	-0,292***	*0,035*	-0,207***	*0,040*				
Cities in West Germany: above-average LMC, high GDP per head					0,524***	*0,043*	0,517***	*0,055*
Mainly urban areas in West Germany: average LMC, high share of long-term unemployed					0,334***	*0,034*	0,362***	*0,044*
Rural areas in West Germany: average LMC					0,036	*0,040*	0,139**	*0,051*
Mainly rural areas: below average LMC	-0,258***	*0,037*	-0,302***	*0,041*	0,031	*0,055*	0,204**	*0,068*
Rural areas in West Germany: average LMC, high seasonal dynamics					0,022	*0,050*	0,215***	*0,061*
Rural areas in West Germany: very good LMC, seasonal dynamics, very low share of long-term unemployed					-0,061	*0,054*	0,050	*0,069*
Interaction terms with age of 25 and older and …								
...Private employment subsidy 2/2000-01/2005					-0,062	*0,074*		
...Job creation schemes 2/2000-01/2005					-0,086	*0,059*		
...Start-up subsidy 2/2000-01/2005					-0,192	*0,143*		
...Practical short-term training 2/2000-01/2005					0,100	*0,054*		
...Classroom short-term training 2/2000-01/2005					-0,073	*0,042*		
...Further vocational training 2/2000-01/2005					-0,038	*0,048*		
…Other ALMP 2/2000-01/2005					0,143**	*0,052*		
…4-6 months cumulated duration of unemployment 2/2004-1/2005	-0,201*	*0,083*	-0,285***	*0,076*				
…7-9 months cumulated duration of unemployment 2/2004-1/2005	-0,206**	*0,077*	-0,251***	*0,072*				
...10-12 months cumulated duration of unemployment 2/2004-1/2005	-0,244***	*0,072*	-0,280***	*0,066*				
…1-12 months since end of last ALMP up to 01/2005					-0,106	*0,054*	-0,164**	*0,050*
...13-24 months since end of last ALMP up to 01/2005					0,061	*0,067*	0,077	*0,086*
…1-12 months minor employment 01/2000-12/2004			-0,069**	*0,023*	-0,034	*0,019*		
...13-24 months minor employment 01/2000-12/2004			-0,029	*0,030*	-0,086**	*0,033*		
...25-60 months minor employment 01/2000-12/2004			-0,050	*0,030*	-0,023	*0,038*		
...Vocational training between 01/2000-12/2004					-0,130*	*0,057*		
Constant	-1,987***	*0,122*	-2,448***	*0,149*	-0,951***	*0,101*	-1,551***	*0,118*
Number of observations	63.082		52.360		96.814		70.570	
Log-Likelihood	-3.744,51		-2.939,53		-3.587,50		-2.016,26	
Pseudo R2	0,085		0,076		0,089		0,087	

Level of significance 0.001***/0.01**/0.05*

Labour Market Conditions (LMC)/ Gross Domestic Product (GDP)/ General Certificate of Secondary Education (GCSE)/ Active Labour Market Policy (ALMP)

Source: IEB V5.01 and LHG V2.0, own calculations

Table 4
Match quality for men in East Germany

	before matching				after matching			
	mean		p-value		mean		p-value	
	treated	controls	of t-test	bias	treated	controls	of t-test	bias
Age in years	(reference: 15-24)							
25-29	0,104	0,117	0,022	-4,000	0,116	0,111	0,554	1,500
30-34	0,111	0,110	0,777	0,500	0,122	0,120	0,818	0,600
35-39	0,124	0,142	0,003	-5,300	0,137	0,138	0,856	-0,500
40-44	0,137	0,176	0,000	-10,500	0,153	0,160	0,449	-1,900
45-49	0,106	0,154	0,000	-14,300	0,119	0,113	0,434	1,900
50-57	0,103	0,202	0,000	-27,900	0,116	0,133	0,034	-4,900
With migration background	0,135	0,080	0,000	17,900	0,133	0,132	0,912	0,300
Impairmant of health or disabled	0,088	0,147	0,000	-18,300	0,097	0,096	0,933	0,200
Education	(reference: Secondary school, vocational education)							
No secondary schooling degree and no vocational education	0,142	0,129	0,028	3,700	0,148	0,151	0,700	-1,000
Secondary school, no vocational education	0,153	0,118	0,000	10,300	0,147	0,157	0,250	-3,000
GCSE or A-level, no vocational education	0,084	0,056	0,000	10,900	0,080	0,083	0,715	-1,000
GCSE, vocational education	0,298	0,350	0,000	-11,000	0,301	0,296	0,682	1,000
A-level, vocational training or college	0,042	0,055	0,001	-6,000	0,046	0,046	1,000	0,000
Household context	(reference: no partner, no children)							
Children, no child younger than six years	0,092	0,119	0,000	-8,600	0,101	0,092	0,235	2,900
Children younger than six years	0,073	0,063	0,020	3,900	0,075	0,072	0,667	1,100
Married or unmarried partner in household	0,235	0,309	0,000	-16,700	0,249	0,236	0,220	3,000
Partner in houshold with vocational education	0,107	0,200	0,000	-26,200	0,117	0,107	0,204	2,800
Partners more than 12 months regular employed 01/2000-12/2005	0,044	0,073	0,000	-12,800	0,048	0,047	0,906	0,300
Cumulated duration of unemployment 02/2004-01/2005	(reference: 1-3 months)							
4-6 months	0,085	0,085	0,859	0,300	0,087	0,083	0,559	1,500
7-9 months	0,170	0,146	0,000	6,700	0,166	0,159	0,456	1,900
10-12 months	0,702	0,695	0,385	1,500	0,701	0,713	0,296	-2,600
Unemployment benefit recipient in 12/2004	0,781	0,769	0,110	2,800	0,781	0,783	0,904	-0,300
ALMP participation during 02/2000-01/2005	(reference: no ALMP)							
Private employment subsidy	0,094	0,102	0,104	-2,800	0,096	0,085	0,117	3,800
Job creation scheme	0,250	0,276	0,001	-6,000	0,259	0,253	0,567	1,400
Start-up subsidy	0,021	0,025	0,080	-3,100	0,021	0,021	0,930	0,200
Practical short-term training	0,097	0,101	0,451	-1,300	0,098	0,093	0,495	1,700
Classroom short-term training	0,393	0,316	0,000	16,100	0,375	0,380	0,642	-1,200
Further vocational training	0,269	0,249	0,009	4,400	0,263	0,264	0,955	-0,100
Other ALMP	0,157	0,144	0,041	3,500	0,144	0,139	0,542	1,500
Cumulated duration out of labour force 02/2004-01/2005	(reference: 0 months)							
1-6 months	0,167	0,153	0,026	3,800	0,161	0,163	0,760	-0,800
7-11 months	0,040	0,039	0,917	0,200	0,040	0,046	0,295	-2,700
12 months	0,011	0,030	0,000	-13,400	0,013	0,011	0,561	1,100
Cumulated duration out of labour force 02/2000-01/2004	(reference: 0 months)							
1-6 months	0,249	0,288	0,000	-8,800	0,259	0,256	0,797	0,600
7-12 months	0,147	0,099	0,000	14,600	0,128	0,125	0,707	1,000
13-18 months	0,053	0,044	0,018	3,900	0,049	0,050	0,818	-0,600
19-24 months	0,048	0,035	0,000	6,500	0,044	0,041	0,576	1,400
25-30 months	0,031	0,026	0,052	3,200	0,028	0,035	0,116	-4,200
31-36 months	0,030	0,024	0,022	3,700	0,027	0,026	0,756	0,800
37-42 months	0,026	0,022	0,169	2,300	0,026	0,024	0,631	1,200
43-48 months	0,053	0,058	0,212	-2,200	0,054	0,058	0,549	-1,500
Cumulated duration of minor employment 01/2000-12/2004	(reference: 0 months)							
1-12 months	0,243	0,240	0,627	0,800	0,241	0,218	0,032	5,300
13-24 months	0,052	0,064	0,004	-5,100	0,055	0,054	0,869	0,400
25-60 months	0,034	0,040	0,078	-3,100	0,036	0,036	0,946	0,200
Regional labour market (district level)								
Unemployment rate 01/2005	23,645	22,996	0,000	17,100	23,473	23,425	0,611	1,300
Percentage change local unempl. rate Jan. /2005/ Jan. 2004	8,526	8,368	0,037	3,900	8,501	8,583	0,396	-2,000
Share of long-term unemployment 01/2005 (in percent)	39,734	40,069	0,000	-7,600	39,644	39,534	0,302	2,500
Percentage change of long-term unempl. share Jan. 2005/ Jan. 2004	-5,087	-2,801	0,000	-41,300	-4,914	-5,103	0,127	3,400
Percentage change vacancy-unempl. ratio Jan. 2005/ Jan. 2004	-6,634	-11,006	0,000	11,000	-8,135	-8,154	0,984	0,000
Missing in region	0,003	0,003	0,691	0,700	0,003	0,003	0,827	-0,600
Type of regional labour market (district level)	(reference: Cities: below average LMC, high share of long-term unemployed)							
Rural areas in East Germany: severe LMC, low GDP per head	0,229	0,307	0,000	-17,700	0,231	0,225	0,571	1,300
Mainly rural areas in East Germany: very severe LMC, low GDP per head, large share of long-term unemployed	0,177	0,169	0,174	2,300	0,167	0,157	0,277	2,600
Mainly rural areas: below average LMC	0,044	0,090	0,000	-18,400	0,049	0,043	0,309	2,100
…4-6 months cumulated duration of unemployment 2/2004-1/2005	0,034	0,065	0,000	-14,300	0,039	0,037	0,693	0,900
…7-9 months cumulated duration of unemployment 2/2004-1/2005	0,088	0,123	0,000	-11,300	0,099	0,099	0,933	0,200
...10-12 months cumulated duration of unemployment 2/2004-1/2005	0,543	0,659	0,000	-23,800	0,603	0,619	0,191	-3,300

Labour Market Conditions (LMC)/ Gross Domestic Product (GDP)/ General Certificate of Secondary Education (GCSE)/ Active Labour Market Policy (ALMP)

Table 5
Match quality for women in East Germany

	before matching				after matching			
	mean		p-value		mean		p-value	
	treated	controls	of t-test	bias	treated	controls	of t-test	bias
Age in years	(reference: 15-24)							
25-29	0,098	0,100	0,646	-0,900	0,107	0,118	0,223	-3,700
30-34	0,127	0,115	0,069	3,500	0,133	0,141	0,362	-2,700
35-39	0,139	0,153	0,051	-3,900	0,155	0,159	0,724	-1,000
40-44	0,159	0,179	0,008	-5,300	0,177	0,169	0,429	2,300
45-49	0,104	0,154	0,000	-15,000	0,117	0,117	0,965	0,100
50-57	0,095	0,197	0,000	-29,300	0,107	0,113	0,494	-1,700
With migration background	0,122	0,090	0,000	10,200	0,120	0,123	0,794	-0,800
Impairmant of health or disabled	0,065	0,099	0,000	-12,500	0,070	0,065	0,497	1,800
Education	(reference: Secondary school, vocational education)							
No secondary schooling degree and no vocational education	0,128	0,134	0,422	-1,600	0,135	0,137	0,835	-0,600
Secondary school, no vocational education	0,136	0,112	0,000	7,300	0,131	0,130	0,933	0,200
GCSE or A-level, no vocational education	0,085	0,073	0,017	4,500	0,088	0,086	0,800	0,800
GCSE, vocational education	0,407	0,426	0,051	-3,800	0,403	0,411	0,581	-1,600
A-level, vocational training or college	0,051	0,057	0,167	-2,800	0,054	0,053	0,949	0,200
Looking only for a part-time job	0,085	0,066	0,000	7,200	0,088	0,089	0,960	-0,200
Household context	(reference: no partner, no children)							
Children, no child younger than six years	0,294	0,308	0,133	-2,900	0,320	0,319	0,927	0,300
Children younger than six years	0,147	0,146	0,874	0,300	0,143	0,145	0,839	-0,600
Married or unmarried partner in household	0,310	0,375	0,000	-13,800	0,321	0,320	0,903	0,300
Cumulated duration of unemployment 02/2004-01/2005	(reference: 1-3 months)							
4-6 months	0,108	0,077	0,000	11,000	0,096	0,094	0,846	0,600
7-9 months	0,153	0,121	0,000	9,300	0,141	0,148	0,465	-2,100
10-12 months	0,668	0,688	0,032	-4,200	0,687	0,684	0,830	0,600
Unemployment benefit recipient in 12/2004	0,698	0,706	0,348	-1,800	0,704	0,698	0,597	1,500
ALMP participation during 02/2000-01/2005	(reference: no ALMP)							
Private employment subsidy	0,070	0,077	0,141	-2,900	0,069	0,070	0,911	-0,300
Job creation scheme	0,261	0,256	0,546	1,200	0,266	0,254	0,314	2,900
Start-up subsidy	0,013	0,014	0,521	-1,300	0,012	0,012	1,000	0,000
Practical short-term training	0,090	0,073	0,001	6,200	0,078	0,083	0,530	-1,800
Classroom short-term training	0,397	0,338	0,000	12,400	0,380	0,384	0,769	-0,800
Further vocational training	0,247	0,248	0,888	-0,300	0,246	0,237	0,424	2,300
Other ALMP	0,157	0,143	0,034	4,100	0,144	0,139	0,624	1,400
Cumulated duration out of labour force 02/2004-01/2005	(reference: 0 months)							
1-6 months	0,129	0,116	0,033	4,100	0,126	0,120	0,573	1,600
7-11 months	0,055	0,050	0,280	2,100	0,054	0,059	0,537	-1,800
12 months	0,027	0,060	0,000	-16,100	0,031	0,027	0,395	2,000
Regional labour market (district level)								
Unemployment rate 01/2005	23,734	23,019	0,000	18,500	23,589	23,638	0,658	-1,300
Percentage change local unempl. rate Jan. /2005/ Jan. 2004	8,746	8,341	0,000	10,000	8,744	8,630	0,300	2,800
Share of long-term unemployment 01/2005 (in percent)	39,678	40,141	0,000	-10,000	39,610	39,655	0,729	-1,000
Percentage change of long-term unempl. share Jan. 2005/ Jan. 2004	-4,708	-2,694	0,000	-36,000	-4,627	-4,720	0,526	1,700
Vacancy-unemployment ratio 01/2005	0,014	0,013	0,000	10,700	0,014	0,014	0,546	-1,600
Percentage change vacancy-unempl. ratio Jan. 2005/ Jan. 2004	-5,720	-10,836	0,000	12,600	-8,052	-5,814	0,054	-5,500
Missing in region	0,005	0,004	0,309	1,900	0,004	0,004	0,654	1,300
Type of regional labour market (district level)	(reference: Cities: below average LMC, high share of long-term unemployed)							
Rural areas in East Germany: severe LMC, low GDP per head	0,250	0,312	0,000	-13,700	0,246	0,245	0,921	0,300
Mainly rural areas in East Germany: very severe LMC, low GDP per head, large share of long-term unemployed	0,190	0,173	0,022	4,400	0,177	0,177	1,000	0,000
Mainly rural areas: below average LMC	0,043	0,090	0,000	-18,600	0,042	0,034	0,157	3,100

Labour Market Conditions (LMC)/ Gross Domestic Product (GDP)/ General Certificate of Secondary Education (GCSE)/ Active Labour Market Policy (ALMP)

Table 6
Match quality for men in West Germany

	before matching				after matching			
	mean		p-value of		mean		p-value of	
	treated	controls	t-test	bias	treated	controls	t-test	bias
Age in years	(reference: 15-24)							
25-29	0,114	0,113	0,830	0,400	0,121	0,124	0,778	-0,800
30-34	0,110	0,124	0,019	-4,300	0,119	0,122	0,745	-0,900
35-39	0,143	0,156	0,041	-3,700	0,153	0,152	0,854	0,500
40-44	0,125	0,166	0,000	-11,700	0,138	0,133	0,588	1,400
45-49	0,160	0,147	0,052	3,400	0,169	0,163	0,499	1,800
50-57	0,118	0,195	0,000	-21,200	0,131	0,130	0,906	0,300
With migration background	0,216	0,243	0,000	-6,400	0,225	0,222	0,799	0,700
Impairmant of health or disabled	0,126	0,181	0,000	-15,300	0,137	0,129	0,391	2,100
Education	(reference: Secondary school, vocational education)							
No secondary schooling degree and no vocational education	0,158	0,217	0,000	-15,000	0,166	0,169	0,777	-0,700
Secondary school, no vocational education	0,266	0,268	0,763	-0,500	0,269	0,278	0,423	-2,100
GCSE or A-level, no vocational education	0,048	0,059	0,013	-4,700	0,051	0,055	0,554	-1,600
GCSE, vocational education	0,110	0,085	0,000	8,600	0,105	0,099	0,431	2,100
A-level, vocational training or college	0,082	0,072	0,029	3,800	0,084	0,079	0,468	2,000
Household context	(reference: no partner, no children)							
Children, no child younger than six years	0,106	0,106	0,966	0,100	0,112	0,105	0,372	2,400
Children younger than six years	0,092	0,083	0,052	3,400	0,093	0,088	0,460	2,000
Married or unmarried partner in household	0,271	0,274	0,770	-0,500	0,281	0,263	0,122	4,100
Partner participated in ALMP 01/2000-01/2005	0,076	0,089	0,010	-4,800	0,080	0,078	0,844	0,500
Unemployment benefit recipient in 12/2004	0,818	0,731	0,000	20,800	0,808	0,814	0,543	-1,500
ALMP participation during 02/2000-01/2005	(reference: no ALMP)							
Private employment subsidy	0,075	0,071	0,390	1,500	0,075	0,074	0,920	0,300
Job creation scheme	0,089	0,079	0,026	3,900	0,080	0,083	0,628	-1,300
Start-up subsidy	0,034	0,033	0,838	0,400	0,034	0,030	0,411	2,100
Practical short-term training	0,136	0,090	0,000	14,700	0,129	0,130	0,937	-0,200
Classroom short-term training	0,392	0,322	0,000	14,700	0,376	0,389	0,288	-2,900
Further vocational training	0,263	0,208	0,000	12,900	0,258	0,265	0,567	-1,600
Other ALMP	0,197	0,189	0,256	2,000	0,200	0,219	0,091	-4,600
Duration since end of last ALMP 01/2000-01/2005	(reference: 25 months and longer or no ALMP)							
1-12 months	0,364	0,284	0,000	17,000	0,336	0,358	0,075	-4,800
13-24 months	0,137	0,125	0,043	3,600	0,141	0,137	0,674	1,100
Cumulated duration out of labour force 02/2004-01/2005	(reference: 0 months)							
1-6 months	0,165	0,182	0,013	-4,600	0,162	0,162	1,000	0,000
7-11 months	0,043	0,060	0,000	-7,400	0,047	0,045	0,705	1,000
12 months	0,018	0,057	0,000	-20,700	0,020	0,022	0,580	-1,100
Cumulated duration out of labour force 02/2000-01/2004	(reference: 0 months)							
1-6 months	0,333	0,333	0,948	0,100	0,337	0,349	0,316	-2,700
7-12 months	0,129	0,107	0,000	6,800	0,116	0,117	0,869	-0,400
13-18 months	0,067	0,062	0,252	2,000	0,067	0,064	0,748	0,900
19-24 months	0,055	0,045	0,007	4,600	0,052	0,051	0,857	0,500
25-30 months	0,031	0,034	0,364	-1,700	0,030	0,029	0,754	0,800
31-36 months	0,028	0,031	0,327	-1,800	0,028	0,024	0,281	2,700
37-42 months	0,023	0,028	0,057	-3,600	0,023	0,027	0,308	-2,700
43-48 months	0,046	0,090	0,000	-17,300	0,051	0,046	0,354	2,100
Time since end of last contributory job	(reference: more than 48 months [14 years] or none contributory job)							
1-12 months	0,216	0,177	0,000	9,800	0,201	0,214	0,203	-3,400
13-24 months	0,201	0,171	0,000	7,500	0,195	0,201	0,573	-1,500
25-48 months	0,296	0,264	0,000	7,200	0,307	0,301	0,645	1,200
Last monthly real wage	(reference: None contributory job for at least 14 years)							
1-400 Euro	0,036	0,033	0,425	1,400	0,036	0,038	0,726	-1,000
401-800 Euro	0,071	0,073	0,654	-0,800	0,067	0,071	0,530	-1,600
801-1200 Euro	0,171	0,142	0,000	8,100	0,162	0,164	0,858	-0,500
1201-1600 Euro	0,188	0,202	0,054	-3,500	0,189	0,190	0,946	-0,200
1601-2000 Euro	0,179	0,169	0,151	2,600	0,182	0,184	0,811	-0,600
2001 Euro and more	0,227	0,199	0,000	6,800	0,238	0,236	0,828	0,600
missing in real wage	0,027	0,048	0,000	-10,800	0,030	0,027	0,524	1,500
Regional labour market (district level)								
Unemployment rate 01/2005	11,396	13,206	0,000	-51,100	11,428	11,303	0,131	3,500
Percentage change local unempl. rate Jan. /2005/ Jan. 2004	12,808	15,364	0,000	-20,500	12,709	12,735	0,934	-0,200
Share of long-term unemployment 01/2005 (in percent)	30,783	33,552	0,000	-37,100	30,918	30,753	0,384	2,200
Percentage change of long-term unempl. share Jan. 2005/ Jan. 2004	2,000	-0,449	0,000	27,200	1,889	1,905	0,947	-0,200
Vacancy-unemployment ratio 01/2005	0,044	0,036	0,000	34,000	0,043	0,044	0,406	-2,400
Percentage change vacancy-unempl. ratio Jan. 2005/ Jan. 2004	2,288	-8,646	0,000	27,800	0,156	-0,141	0,772	0,800
Missing in region	0,008	0,010	0,262	-2,100	0,009	0,013	0,157	-4,100

Table 6 continued
Match quality for men in West Germany

	before matching				after matching			
	mean		p-value of		mean		p-value of	
	treated	controls	t-test	bias	treated	controls	t-test	bias
Type of regional labour market (district level)	(reference: Cities: below average LMC, high share of long-term unemployed)							
Cities in West Germany: average labour market condition (LMC), high GDP, large share of long-term unemployed	0,233	0,174	0,000	14,800	0,240	0,244	0,757	-0,900
Rural areas in West Germany: very good LMC, low share of long-term	0,121	0,081	0,000	13,300	0,116	0,128	0,157	-4,100
Cities in West Germany: above-average LMC, high GDP per head	0,140	0,050	0,000	31,200	0,123	0,111	0,175	4,000
Mainly urban areas in West Germany: average LMC, high share of long-term unemployed	0,160	0,173	0,069	-3,300	0,170	0,166	0,723	0,900
Rural areas in West Germany: average LMC	0,151	0,189	0,000	-9,900	0,155	0,154	0,913	0,300
Mainly rural areas: below average LMC	0,024	0,037	0,000	-7,700	0,026	0,025	0,736	0,800
Rural areas in West Germany: average LMC, high seasonal dynamics	0,061	0,050	0,007	4,700	0,056	0,063	0,265	-3,100
Rural areas in West Germany: very good LMC, seasonal dynamics, very low share of long-term unemployed	0,073	0,043	0,000	13,100	0,073	0,074	0,879	-0,400
Interaction terms with age of 25 and older and …								
...Private employment subsidy 2/2000-01/2005	0,058	0,067	0,064	-3,400	0,064	0,063	0,914	0,300
...Job creation schemes 2/2000-01/2005	0,055	0,067	0,011	-4,700	0,059	0,060	0,955	-0,100
...Start-up subsidy 2/2000-01/2005	0,030	0,033	0,366	-1,700	0,033	0,030	0,494	1,800
...Practical short-term training 2/2000-01/2005	0,097	0,078	0,000	6,800	0,101	0,102	0,930	-0,200
...Classroom short-term training 2/2000-01/2005	0,285	0,291	0,420	-1,500	0,310	0,315	0,648	-1,200
...Further vocational training 2/2000-01/2005	0,216	0,196	0,004	5,100	0,228	0,234	0,616	-1,400
…Other ALMP 2/2000-01/2005	0,159	0,172	0,059	-3,400	0,170	0,181	0,281	-2,900
…1-12 months since end of last ALMP up to 01/2005	0,239	0,246	0,368	-1,600	0,258	0,268	0,383	-2,400
...13-24 months since end of last ALMP up to 01/2005	0,113	0,115	0,674	-0,800	0,122	0,118	0,684	1,100
…1-12 months minor employment 01/2000-12/2004	0,168	0,196	0,000	-7,300	0,181	0,177	0,629	1,300
...13-24 months minor employment 01/2000-12/2004	0,043	0,060	0,000	-7,400	0,048	0,046	0,755	0,800
...25-60 months minor employment 01/2000-12/2004	0,032	0,040	0,034	-4,000	0,036	0,033	0,561	1,500
...Vocational training between 01/2000-12/2004	0,027	0,024	0,290	1,900	0,028	0,024	0,321	2,700

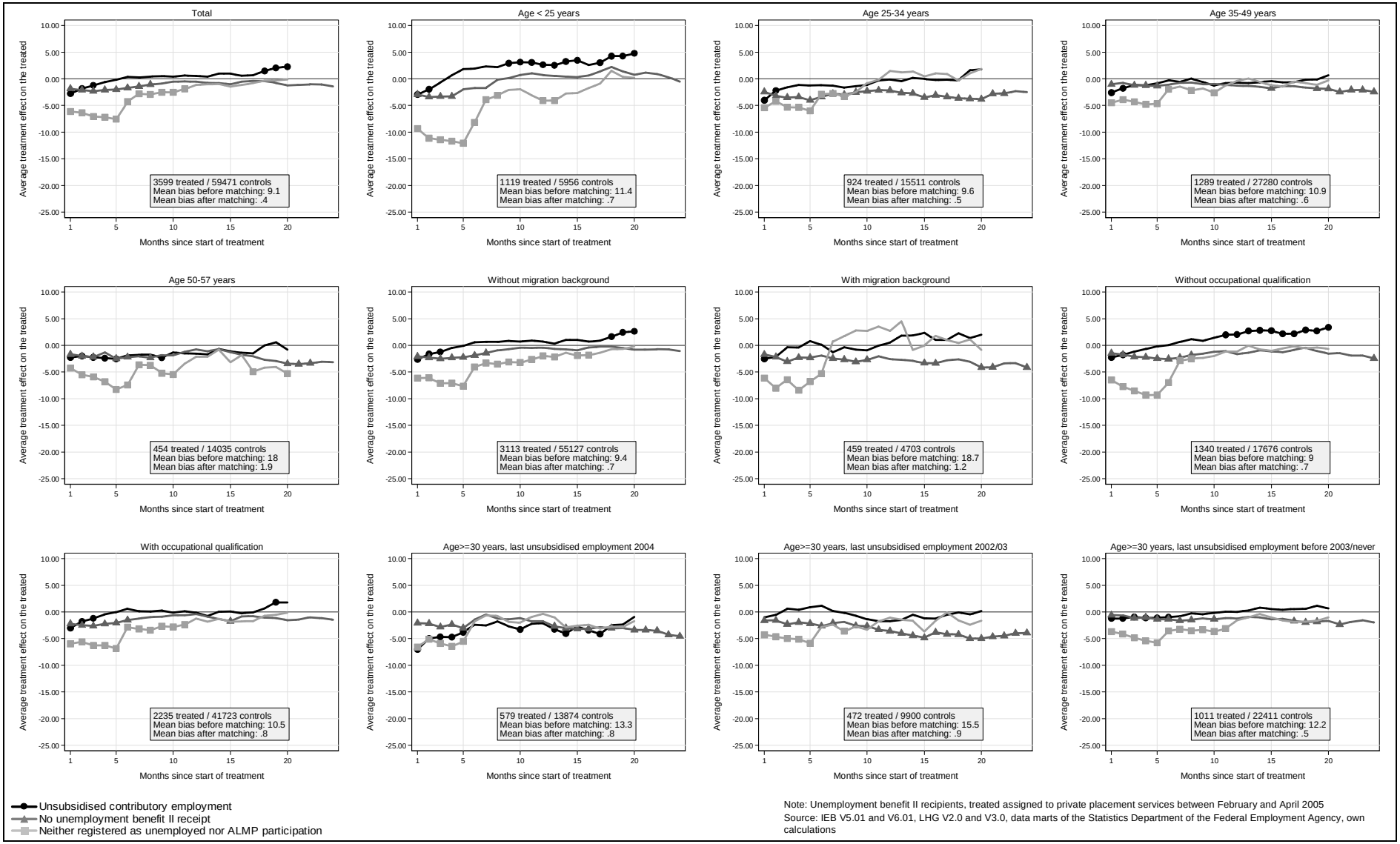
Labour Market Conditions (LMC)/ Gross Domestic Product (GDP)/ General Certificate of Secondary Education (GCSE)/ Active Labour Market Policy (ALMP)

Table 7
Match quality for women in West Germany

	before matching				after matching			
	mean		p-value of		mean		p-value of	
	treated	controls	t-test	bias	treated	controls	t-test	bias
Age in years	(reference: 15-24)							
25-29	0,098	0,114	0,046	-5,000	0,103	0,110	0,557	-2,100
30-34	0,118	0,134	0,050	-4,900	0,127	0,124	0,827	0,800
35-39	0,140	0,161	0,023	-5,700	0,149	0,150	0,919	-0,400
40-44	0,132	0,165	0,000	-9,400	0,144	0,157	0,311	-3,700
45-49	0,144	0,133	0,164	3,300	0,155	0,159	0,804	-0,900
50-57	0,123	0,178	0,000	-15,300	0,138	0,130	0,559	2,000
With migration background	0,179	0,252	0,000	-17,600	0,193	0,182	0,404	2,900
Impairmant of health or disabled	0,082	0,116	0,000	-11,500	0,086	0,084	0,846	0,700
Education	(reference: Secondary school, vocational education)							
No secondary schooling degree and no vocational education	0,144	0,272	0,000	-31,700	0,153	0,153	0,960	-0,200
Secondary school, no vocational education	0,255	0,272	0,103	-4,000	0,264	0,279	0,371	-3,300
GCSE or A-level, no vocational education	0,089	0,073	0,017	5,600	0,086	0,092	0,525	-2,400
GCSE, vocational education	0,177	0,112	0,000	18,500	0,166	0,150	0,214	4,700
A-level, vocational training or college	0,075	0,074	0,890	0,300	0,079	0,075	0,635	1,700
Household context	(reference: no partner, no children)							
Children, no child younger than six years	0,243	0,291	0,000	-10,900	0,264	0,268	0,838	-0,700
Children younger than six years	0,099	0,178	0,000	-23,000	0,107	0,109	0,861	-0,600
Married or unmarried partner in household	0,222	0,311	0,000	-20,200	0,231	0,224	0,635	1,600
Partner participated in ALMP 01/2000-01/2005	0,124	0,188	0,000	-17,600	0,130	0,121	0,413	2,700
Partners more than 12 months out of labour force 01/2000-12/2004	0,075	0,112	0,000	-12,600	0,080	0,070	0,303	3,400
Cumulated duration of unemployment 02/2004-01/2005	(reference: 1-3 months)							
4-6 months	0,102	0,088	0,043	4,800	0,098	0,092	0,578	2,000
7-9 months	0,137	0,102	0,000	10,900	0,125	0,123	0,826	0,800
10-12 months	0,630	0,491	0,000	28,400	0,632	0,649	0,327	-3,500
Unemployment benefit recipient in 12/2004	0,681	0,468	0,000	44,100	0,662	0,681	0,264	-3,900
Duration since end of last ALMP 01/2000-01/2005	(reference: 25 months and longer or no ALMP)							
1-12 months	0,331	0,222	0,000	24,600	0,300	0,306	0,694	-1,500
13-24 months	0,140	0,094	0,000	14,400	0,138	0,144	0,677	-1,600
Cumulated duration out of labour force 02/2004-01/2005	(reference: 0 months)							
1-6 months	0,145	0,158	0,158	-3,500	0,150	0,153	0,801	-0,900
7-11 months	0,070	0,094	0,001	-8,500	0,074	0,060	0,129	5,000
12 months	0,050	0,190	0,000	-44,200	0,056	0,060	0,643	-1,200
Time since end of last contributory job	(reference: more than 48 months [14 years] or none contributory job)							
1-12 months	0,189	0,155	0,000	8,900	0,178	0,176	0,850	0,700
13-24 months	0,201	0,137	0,000	17,100	0,197	0,204	0,651	-1,800
25-48 months	0,253	0,191	0,000	14,800	0,258	0,260	0,934	-0,300
49 months - 14 years	0,171	0,207	0,000	-9,200	0,186	0,186	1,000	0,000
Regional labour market (district level)								
Unemployment rate 01/2005	11,280	13,226	0,000	-53,200	11,351	11,355	0,972	-0,100
Share of long-term unemployment 01/2005 (in percent)	30,658	32,654	0,000	-26,000	30,754	30,842	0,745	-1,100
Percentage change of long-term unempl. share Jan. 2005/ Jan. 2004	2,336	-1,337	0,000	39,700	2,075	2,131	0,859	-0,600
Vacancy-unemployment ratio 01/2005	0,044	0,036	0,000	29,600	0,043	0,043	0,482	-2,600
Percentage change vacancy-unempl. ratio Jan. 2005/ Jan. 2004	0,773	-10,074	0,000	29,200	-1,822	-0,074	0,176	-4,700
Missing in region	0,012	0,009	0,341	2,200	0,013	0,013	1,000	0,000
Type of regional labour market (district level)	(reference: Cities: below average LMC, high share of long-term unemployed)							
Cities in West Germany: average labour market condition (LMC), high GDP, large share of long-term unemployed	0,198	0,178	0,029	5,200	0,207	0,233	0,080	-6,700
Rural areas in West Germany: very good LMC, low share of long-term unemployed	0,147	0,090	0,000	17,700	0,144	0,142	0,918	0,400
Cities in West Germany: above-average LMC, high GDP per head	0,135	0,051	0,000	29,100	0,117	0,111	0,649	1,800
Mainly urban areas in West Germany: average LMC, high share of long-term unemployed	0,154	0,172	0,056	-4,800	0,165	0,153	0,373	3,200
Rural areas in West Germany: average LMC	0,152	0,171	0,041	-5,100	0,153	0,156	0,841	-0,700
Mainly rural areas: below average LMC	0,025	0,037	0,010	-6,900	0,024	0,024	0,906	0,400
Rural areas in West Germany: average LMC, high seasonal dynamics	0,073	0,058	0,011	5,900	0,073	0,067	0,479	2,700
Rural areas in West Germany: very good LMC, seasonal dynamics, very low share of long-term unemployed	0,077	0,052	0,000	10,200	0,073	0,075	0,890	-0,500

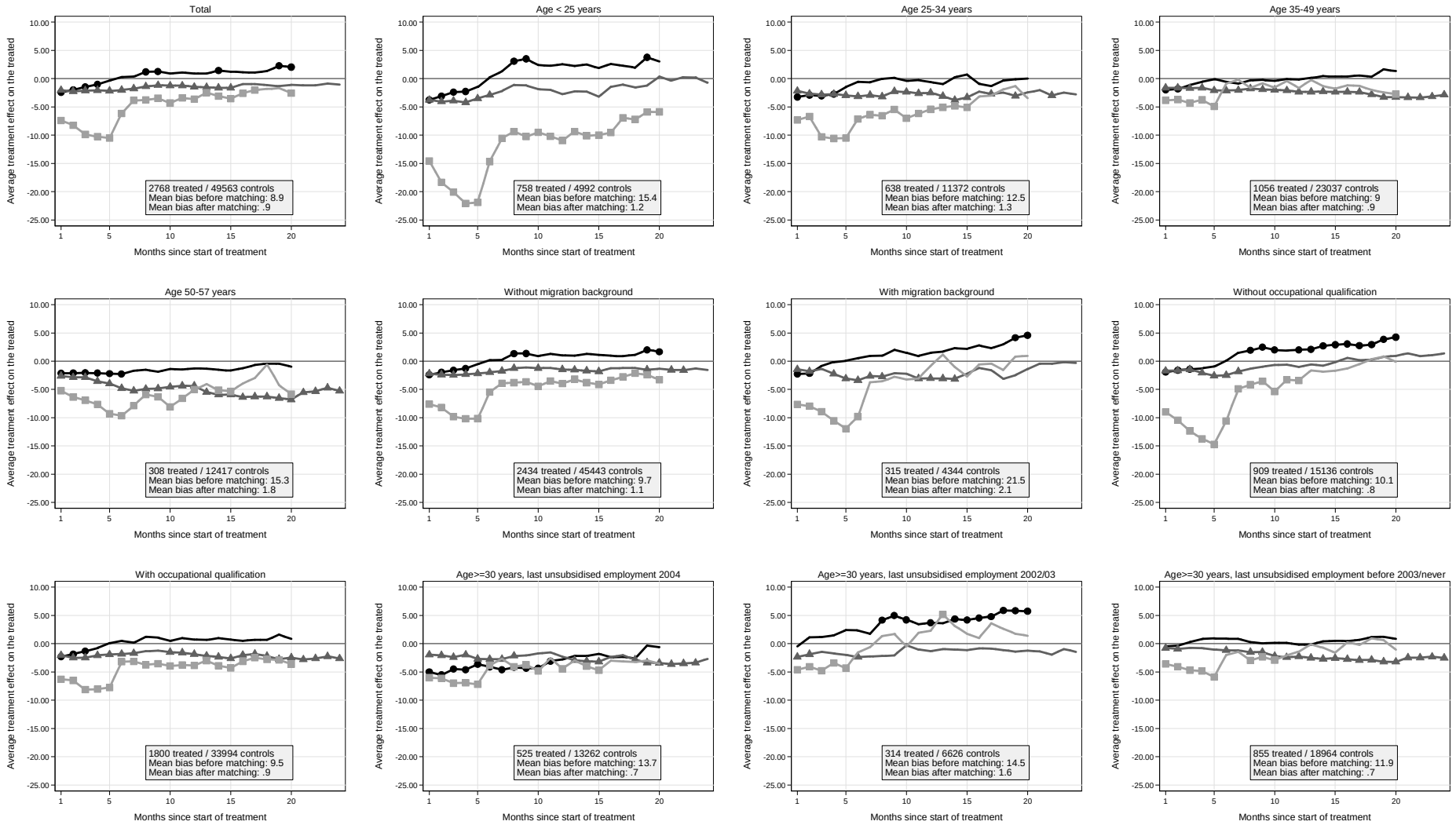
Labour Market Conditions (LMC)/ Gross Domestic Product (GDP)/ General Certificate of Secondary Education (GCSE)/ Active Labour Market Policy (ALMP)

Figure 1
Men in East Germany: average treatment effects on the treated (in percentage points), radius matching with caliper 0.001



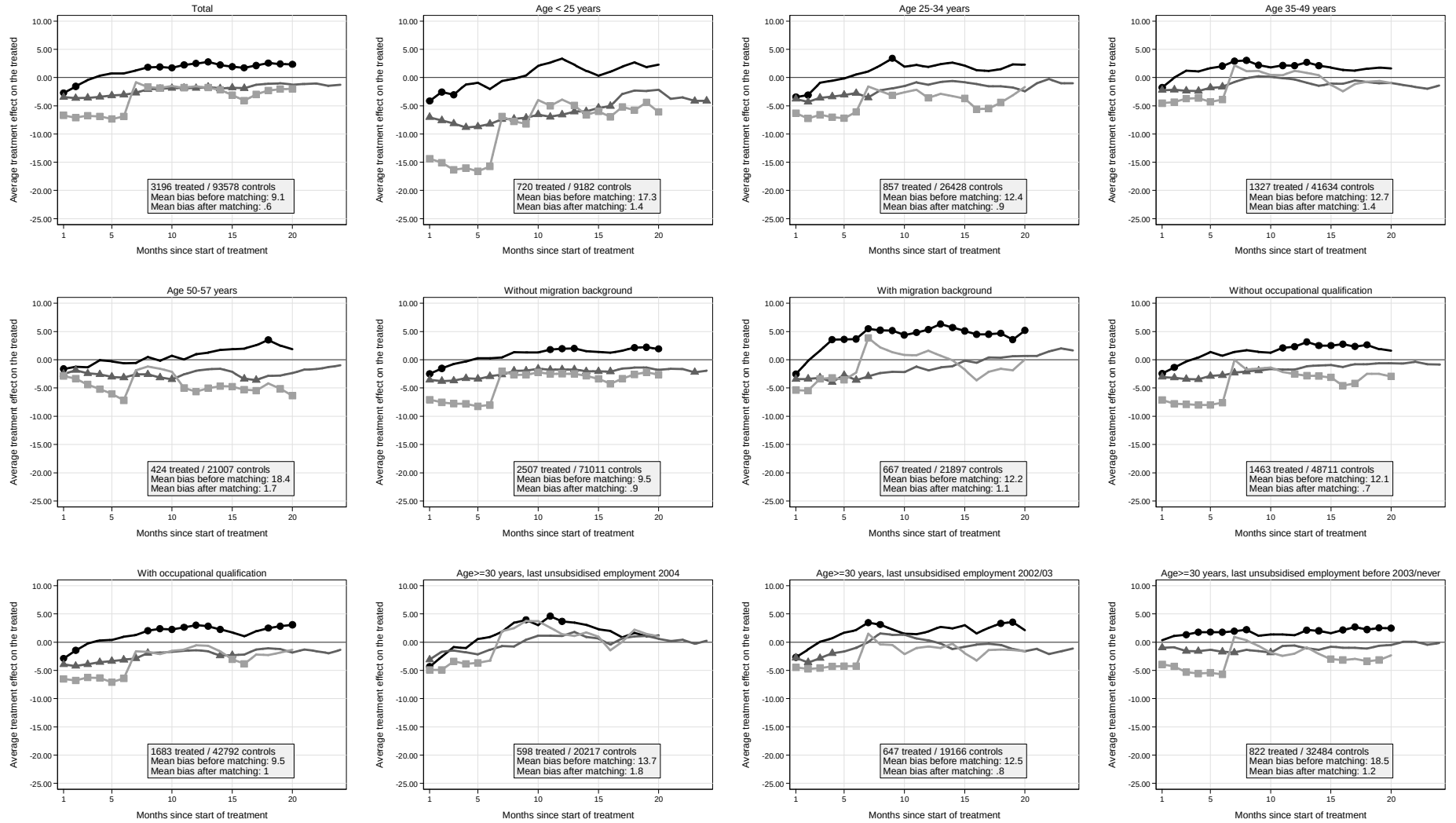
Note: Unemployment benefit II recipients, treated assigned to private placement services between February and April 2005
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

Figure 2
Women in East Germany: average treatment effects on the treated (in percentage points), radius matching with caliper 0.001



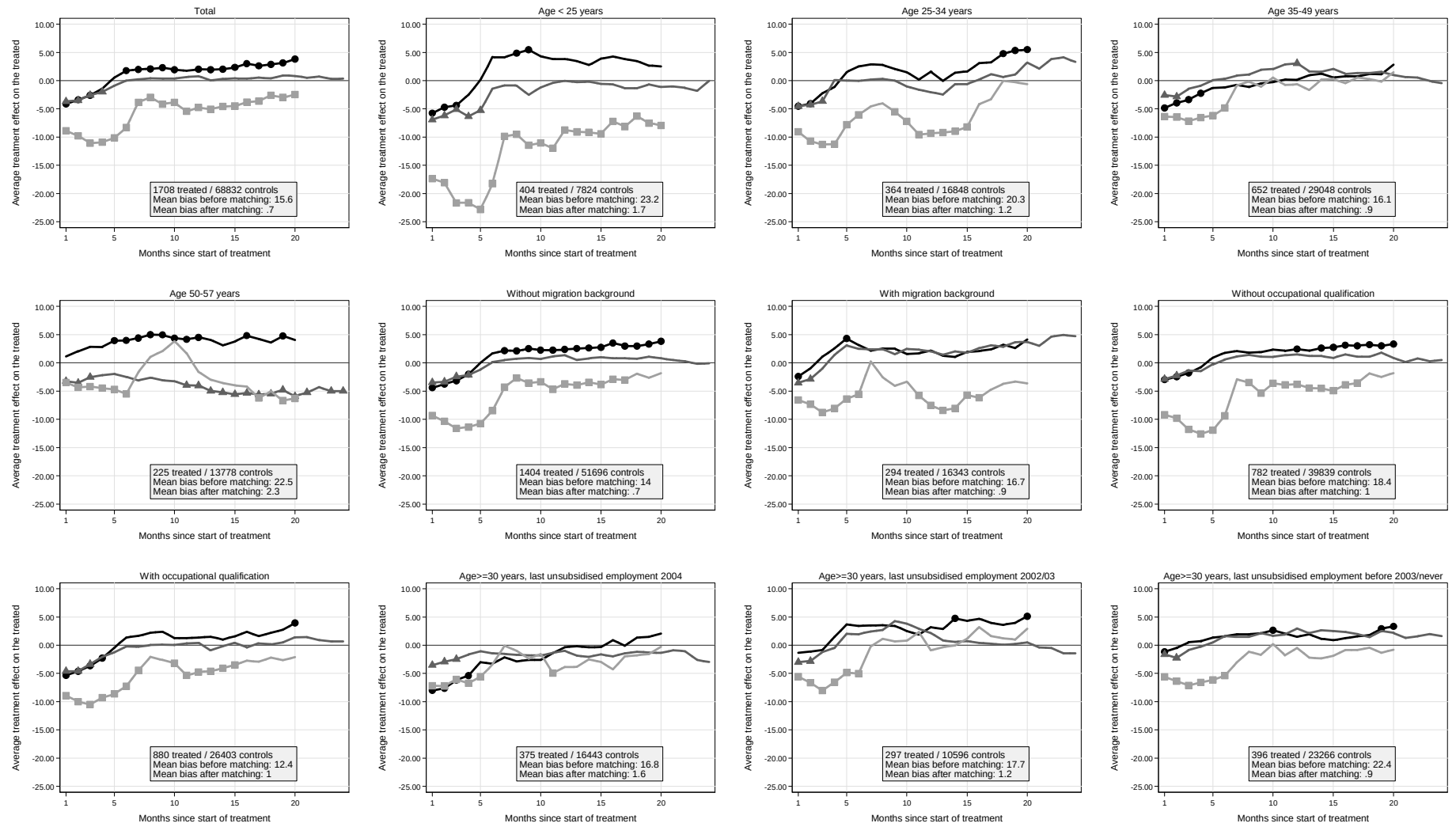
Note: Unemployment benefit II recipients, treated assigned to private placement services between February and April 2005
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

Figure 3
Men in West Germany: average treatment effects on the treated (in percentage points), radius matching with caliper 0.001



Note: Unemployment benefit II recipients, treated assigned to private placement services between February and April 2005
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

Figure 4
Women in West Germany: average treatment effects on the treated (in percentage points), radius matching with caliper 0.001



Note: Unemployment benefit II recipients, treated assigned to private placement services between February and April 2005
Source: IEB V5.01 and V6.01, LHG V2.0 and V3.0, data marts of the Statistics Department of the Federal Employment Agency, own calculations

Recently published

No.	Author(s)	Title	Date
17/2007	Fuchs, J. Weber, B.	Vollbeschäftigungsannahme und Stille Reserve: Eine Sensitivitätsanalyse für Westdeutschland	6/07
18/2007	Haas, A. Damelang, A.	Labour market entry of migrants in Germany: Does cultural diversity matter?	6/07
19/2007	Wachter, T. von Bender, S.	Do initial conditions persist between firms? : An analysis of firm-entry cohort effects and job losers using matched employer-employee data	6/07
20/2007	Reiter, J.P. Drechsler, J.	Releasing multiply-imputed synthetic data generated in two stages to protect confidentiality	6/07
21/2007	Damelang, A.	Räumliche Mobilität von türkischen Arbeitnehmern: Eine Analyse mit der IAB-Beschäftigtenstichprobe 2001	7/07
22/2007	Pfeifer, C.	Homogene und heterogene Teilnahmeeffekte des Hamburger Kombilohnmodells: Ein Verfahrensvergleich von Propensity Score Matching und OLS-Regression	7/07
23/2007	Bender, S. Koch, S. Meßmann, S. Walwei, U.	Was muten sich Arbeitslose zu? : Lohnkonzessionen von ALG-II-Empfängern published in: Sozialer Fortschritt, Jg. 57, H. 3 (2008), S. 75-85	7/07
24/2007	Bruckmeier, K. Schnitzlein, D.	Was wurde aus den Arbeitslosenhilfeempfängern? : Eine empirische Analyse des Übergangs und Verbleibs von Arbeitslosenhilfeempfängern nach der Hartz-IV-Reform	9/07
25/2007	Büttner, T.	Ankündigungseffekt oder Maßnahmewirkung? : Eine Evaluation von Trainingsmaßnahmen zur Überprüfung der Verfügbarkeit	10/07
26/2007	Brücker, H. Defoort, C.	Inequality and the (self-)selection of international migrants: Theory and novel evidence	10/07
27/2007	Brücker, H. Schröder, P.J.H.	International migration with heterogeneous agents: Theory and evidence	10/07
28/2007	Krug, G.	In-work benefits for low wage jobs: Can additional income hinder labor market integration?	11/07
29/2007	Wolff, J. Jozwiak, E.	Does short-term training activate means-tested unemployment benefit recipients in Germany?	11/07
30/2007	König, M. Möller, J.	Mindestlohneffekte des Entsendegesetzes? : Eine Mikrodatenanalyse für die deutsche Bauwirtschaft	11/07
32/2007	Hohmeyer, K. Wolff, J.	A fistful of Euros: Does One-Euro-Job participation lead means-tested benefit recipients into regular jobs and out of unemployment benefit II receipt?	12/07
1/2008	Schnitzlein, D.	Verbunden über Generationen: Struktur und Ausmaß der intergenerationalen Einkommensmobilität in Deutschland	1/08
2/2008	Bauer, T. K. Schmucker, A. Vorell, M.	KMU und Arbeitsplatzdynamik: Eine Analyse auf Basis der Beschäftigten-Historik-Datei	1/08
3/2008	Baas, T. Brücker, H.	Macroeconomic consequences of migration diversion: A CGE simulation for Germany and the UK	1/08
4/2008	Amend, E. Herbst, P.	Labor market pooling and human capital investment decisions	1/08

As per: 1.2.2008

For a full list, consult the IAB website
http://www.iab.de/de/publikationen/discussionpaper.aspx

Imprint

IAB-Discussion Paper 5/2008

Editorial address
Institute for Employment Research
of the Federal Employment Agency
Regensburger Str. 104
D-90478 Nuremberg

Editorial staff
Regina Stoll, Jutta Palm-Nowak

Technical completion
Jutta Sebald

Website
http://www.iab.de

Download of this Discussion Paper
http://doku.iab.de/discussionpapers/2008/dp0508.pdf

For further inquiries contact the authors:

Sarah Bernhard
Phone +49.911.179 3079
E-mail sarah.bernhard@iab.de

Joachim Wolff
Phone +49.911.179 1248
E-mail joachim.wolff@iab.de