Should Welfare Administration be Centralized or Decentralized? Evidence from a Policy Experiment

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Non-technical summary

Germany's 2005 welfare reform introduced two competing organizational systems for the administration and activation of welfare recipients. In the majority of the 439 German districts, a centralized organization was established where local employment offices and local authorities had to form a joint venture which is subject to the central directives and guidelines of the Federal Employment Agency (FEA). Within the joint venture, the FEA is in charge of the administration of benefits, job placement and the application of the main instruments of active labor market policy. The local authorities have the task to administer payments for housing costs and special needs. Moreover, they provide counseling in case of specific contexts such as lone parent status, home care for elderly or disabled relatives, or addiction to alcohol and drugs.

In a policy experiment, 69 out of the 439 districts were allowed to opt out for a decentralized organization of welfare administration. In the decentralized agencies the local authorities autonomously organize welfare administration. They are responsible for the entire activation process, including counseling, the disbursement of benefits, job placement and the allocation of benefit recipients to active labor market policy programs. Thus, the FEA is not involved and decentralized welfare agencies can decide on their own on how to activate the welfare recipients. The decentralized welfare agencies are legally and organizationally independent from central directives and guidelines. All other components of public welfare and labor market policy – such as benefit entitlements, the tax-benefit system in general, and labor market institutions such as minimum wages and employment protection – apply equally to the centralized and the decentralized system of welfare administration.

In this paper we evaluate the relative success of both systems. Our empirical analysis is based on a unique data set compiled from in-depths surveys of welfare administration, register data of the FEA, comprehensive surveys of welfare recipients and extensive regional information. The data contain information on organizational and strategic features of welfare agencies which is usually unavailable. They contain information about a sample of individuals who received welfare benefits in October 2006 and who are followed until December 2007.

We find that decentralized welfare administration has a negative effect on the chances of male welfare recipients to take up employment providing a sufficient living income and leading to exit from welfare receipt. Given the low transition intensity from welfare receipt into employment in general, the magnitudes of the effects are substantial. Compared with centralized welfare agencies, the integration rate of decentralized welfare agencies is up to 25 percent lower during the observation period. For women, we also find negative effects, which are, however, statistically insignificant. No significant differences are found when considering employment with supplementary welfare receipt as the outcome. Based on these results, we conclude that centralized standards and routines work effectively for individuals without further obstacles to employment. Once additional problems, such as a lack of child care facilities, come into play, standardized placement loses its effectiveness. In particular, tailor-made solutions to individual needs often require the cooperation of local actors. This is why, in our opinion, the centralized model has no significant advantage over the decentralized model in case of female welfare recipients.

Das Wichtigste in Kürze

Vor der Umsetzung der so genannten Hartz IV-Reform im Januar 2005 bestand keine politische Einigkeit darüber, wer für die Betreuung und arbeitsmarktpolitische Aktivierung von erwerbsfähigen Hilfebedürftigen zuständig sein sollte. In einer Kompromisslösung wurden daher zwei verschiedene Organisationsmodelle – sogenannte Arbeitsgemeinschaften (ARGEn) und zugelassene kommunale Träger (zkT) – parallel nebeneinander eingeführt, um ihren relativen Erfolg im gegenseitigen Wettbewerb zu bestimmen und das erfolgreichere Modell später flächendeckend umzusetzen.

In der Mehrheit der 439 Kreise und kreisfreien Städte wurde eine ARGE aus Agentur für Arbeit und Kommune gegründet. Beide Institutionen betreuen in der ARGE die erwerbsfähigen Hilfebedürftigen gemeinschaftlich. Die Agenturen für Arbeit sind dabei zuständig für die Verwaltung und Auszahlung der Regelleistung des Arbeitslosengelds II, die Aktivierung der Hilfebedürftigen mit arbeitsmarktpolitischen Maßnahmen und ihrer Vermittlung in Arbeit. Die Kommunen sind verantwortlich für die Leistungen für Unterkunft und Heizung, eventuelle Mehrbedarfe beim Lebensunterhalt sowie für die Beratung bei besonderen Problemlagen. Charakteristisch für Arbeitsgemeinschaften ist, dass Weisungen der Bundesagentur für Arbeit (BA), z.B. im Hinblick auf den Einsatz von arbeitsmarktpolitischen Maßnahmen, bindend sind. Die ARGEn stehen daher unter dem direkten Einfluss der BA und können somit auch als zentralisierte Organisationseinheiten bzw. zentralisierte Jobcenter verstanden werden.

69 Kreisen und kreisfreien Städten wurde hingegen gestattet, die Betreuung von erwerbsfähigen Hilfebedürftigen dezentral zu organisieren. In diesen zugelassenen kommunalen Trägern ist allein die Kommune verantwortlich für sämtliche Aktivierungs-, Vermittlungs- und Beratungsaufgaben; die Agenturen für Arbeit und somit die BA sind nicht eingeschaltet. Die zugelassenen kommunalen Träger unterstehen keinen zentralen Vorgaben, sondern können den Wiedereingliederungsprozess von Hilfebedürftigen in den Arbeitsmarkt ihren eigenen Vorstellungen entsprechend gestalten.

Die vorliegende Studie untersucht den relativen Erfolg beider Organisationsmodelle. Dazu verwenden wir einen Datensatz, der eigens für diese Untersuchung konzipiert wurde. Dieser Datensatz setzt sich zusammen aus umfangreichen Erhebungen auf Ebene der Jobcenter, administrativen Daten der BA, einer Befragung von mehr als 20.000 Arbeitslosengeld II-Empfängern und zahlreichen regionalen Informationen. Die Daten beziehen sich auf die Jahre 2006 und 2007 und beinhalten eine Stichprobe von Personen, die im Oktober 2006 Arbeitslosengeld II bezogen haben und deren Werdegang im Anschluss bis Dezember 2007 verfolgt werden kann.

Unsere Ergebnisse zeigen, dass eine dezentralisierte Organisation bei hilfebedürftigen Männern einen substantiell negativen Effekt auf deren Chancen hat, eine bedarfsdeckende Beschäftigung aufzunehmen, also eine Beschäftigung, die ein ausreichendes Einkommen generiert, um den ALG II-Leistungsbezug zu verlassen. Zugelassene kommunale Träger erzielen in Bezug auf diesen Ergebnisindikator während des Beobachtungszeitraums eine bis zu 25% geringere Integrationsrate als Arbeitsgemeinschaften. Auch für Frauen lässt sich tendenziell ein negativer Effekt feststellen. Dieser ist jedoch nicht statistisch signifikant. Ebenso lassen sich keine signifikanten Unterschiede erkennen, wenn Beschäftigung mit anhaltendem Leistungsbezug als Ergebnisindikator verwendet wird.

Wir schlussfolgern aus diesen Ergebnissen, dass zentralisierte Jobcenter bzw. ARGEn dann erfolgreicher in der Arbeitsmarktintegration sind, wenn keine Vermittlungshemmnisse bestehen. Liegen solche vor, wie bspw. bei einem unzureichenden Angebot an Kinderbetreuung, verlieren standardisierte Vermittlungskonzepte im Rahmen der zentralisierten Aufgabenwahrnehmung ihren Effektivitätsvorsprung. Um bei Vermittlungshemmnissen eine passgenaue Lösung für jeden Einzelfall sicherzustellen, ist eine enge Abstimmung mit lokalen Kooperationspartnern notwendig. Diese kann sowohl durch Arbeitsgemeinschaften als auch zugelassene kommunale Träger in gleichem Ausmaß gewährt werden. Dies mag auch erklären, warum sich keine signifikanten Unterschiede zwischen beiden Organisationsmodellen für Frauen erkennen lassen.

Should Welfare Administration be Centralized or Decentralized?
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Abstract

The 2005 reform of the German welfare system introduced two competing organizational models for welfare administration. In most districts, a centralized organization was established where local welfare agencies are bound to central directives. At the same time, 69 districts were allowed to opt for a decentralized organization. We evaluate the relative success of both types of organizations. Compared to centralized organization, decentralized organization of welfare administration has a negative effect on the transition of male welfare recipients to self-sufficient employment, but it does not affect employment in combination with continuing welfare support. No significant effects were found for women.

JEL-Codes: I38, J64, C31

Key Words: *Welfare System, Organization, Decentralization, Labor Market Integration*

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1   Introduction

The organization of public welfare institutions differs greatly between countries. Studies from economics, management and organization theories suggest that the form of organization, particularly the centralization or decentralization of responsibilities, may have far-reaching implications (Besley and Coate, 2003; Richardson et al., 2002; Hutchcroft, 2001). Also, in the case of welfare administration, different organizational systems are likely to result in different incentives and strategies and can influence the success of bringing unemployed welfare recipients back into employment. Given that public welfare spending accounts for a significant portion of total government expenditure, and given that labor market integration of welfare recipients is the principal task of the public welfare administration for the unemployed, the improvement of organizational effectiveness is a question of foremost economic importance.

One key component in the organization of welfare administration is the degree of local autonomy versus centralization. In a decentralized setting, local authorities are responsible for the activation of welfare recipients and act independently from central directives and guidelines. Conversely, in a centralized structure, welfare administration is organized by a countrywide government agency that issues directives on how the activation of welfare recipients should be implemented at the local level.

The degree of centralization of welfare administration varies considerably between countries. In the Netherlands, local authorities form the basis of the public welfare system. In the UK, by contrast, public welfare administration is part of the central government structure. In other countries, welfare reform has changed the degree of centralization of welfare administration. The 1996 U.S. welfare reform, for instance, devolved greater program authority from the federal level to the states, and the Canadian reform that same year gave greater discretion to the provinces (Blank, 2002).

Theoretical arguments in favor of a decentralized organization are based on the idea that local authorities are better informed about the characteristics of the local labor market. They are assumed to have detailed knowledge about the specific attributes and changes that have been made, and are thought to be most effective in providing services that are tailored to local conditions. Conversely, central organizations often have an advantage in bundling resources, collecting information from various sources, and imposing best-practice strategies for its local offices.

Even though there is an increasing evaluation literature concerning the effectiveness of active labor market policy programs and certain elements of welfare reform (most of them

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from the United States[1], Germany[2] or other European[3] countries), evidence of the effects of the welfare system organization is scarce. One reason for this is that centralization or decentralization applies to countries as a whole, which makes it difficult to detangle the effects of a particular organizational setting from other aspects of the welfare system or its reform. So far, conclusions are derived from case studies only (Lindsay and McQuaid, 2008; Tergeist and Grubb, 2006).

The aim of this paper is to provide quantitative evidence on the relative performance of a centralized and decentralized organization of welfare administration. We exploit the 2005 reform of the German welfare system that introduced two competing types of organization – a centralized and a decentralized structure – in an otherwise homogenous institutional framework. According to the experimentation clause in the German Social Code, both approaches were pursued in parallel for a limited period of time, after which, the more successful model should be determined.[4] In most districts, a centralized organization was established, in which the welfare agencies are subject to the directives and guidelines of the Federal Employment Agency. However, a total of 69 out of the 439 German districts were allowed to opt out in favor of a decentralized organization that is legally and organizationally independent from central directives and guidelines. Virtually all other components of public welfare and labor market policy – such as benefit entitlements, the tax-benefit system in general, and labor market institutions such as minimum wages and employment protection – apply equally to the centralized and decentralized systems of welfare administration.

In order to evaluate the performance of the two organizational systems, we investigate the successful integration of welfare recipients into the labor market. Our empirical analysis is

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[1] For a review of U.S. welfare reforms and the related empirical literature, we refer to Blank (2002), Moffitt (2002), and Grogger and Karoly (2005). Bloom and Michalopoulos (2001) synthesize the results of 29 studies investigating the effects of various US welfare-to-work programs.

[2] Hohmeyer and Wolff (2007); Wolff and Jozwiak (2007); Bernhard et al. (2008); Boockmann et al. (2009); Aldashev et al. (2010); Huber et al. (2010); and Thomsen and Walter (2010) have evaluated the effects of various German welfare-to-work programs after 2005 and obtained mixed results on employment and welfare receipt depending on the programs and populations considered.

[3] Surveys on welfare reform in Europe (countries other than Germany) are provided by Torfing (1999); Kildal (2001); and Halvorsen and Jensen (2004) for the Nordic countries; Finn (2000); Beaudry (2002); and Dostal (2008) for the UK, and Finn (2000) and Knijn (2001) for the Netherlands. See also Martin and Grubb (2001) and Kluve (2006) for comprehensive overviews.

[4] A description of the experimentation clause in German Social Code with details of implementation, context and policy results is provided by Deutscher Bundestag (2008).

based on a unique data set that is compiled from in-depth surveys of welfare administration, FEA register data, comprehensive surveys of welfare recipients and extensive regional information. These data contain information on the organizational and strategic features of welfare agencies, which is usually unavailable.

In the next section, we describe the set-up of the German welfare system for the pre- and post-reform period. Section 3 introduces the data, while Section 4 outlines the methodological approach. Estimation results are presented in Section 5, and conclusions are drawn in the final section.

2   The German Welfare Reform of 2005

Before 2005, the same organization of welfare administration applied to all 439 districts (in German, *Kreise* and *kreisfreie Städte*) in Germany. There were two different types of benefits: unemployment and social assistance, which were administered by two different authorities. The centrally organized Federal Employment Agency (FEA)*,* represented by the local employment offices*,* was in charge of unemployment assistance, a means-tested benefit for individuals with long-term unemployment after their claims to unemployment insurance benefits had expired. Local authorities, in contrast, were responsible for social assistance, a benefit for individuals who had not accumulated sufficient benefit entitlements to be entitled to unemployment insurance benefits or who were unable to work. This organization of the welfare system, with its two distinct administrative bodies, was often judged as overly fragmented (Tergeist and Grubb, 2006; Konle-Seidl et al., 2007) and resulted in disincentives with respect to integration into the labor market.

To remove these shortcomings, welfare system reform, implemented in January 2005, merged unemployment and social assistance into a single benefit, Unemployment Benefit II (UBII). In contrast to unemployment assistance, and similar to the former social assistance, UBII does not depend on former earnings. To be eligible for UBII, persons must be between the ages of 15 to 64 and must be able to work for at least 15 hours per week. Means-testing takes into account the wealth and income of all individuals living in the household. Individuals who are employed but have insufficient household income are also eligible for the benefit. UBII recipients are obliged to actively look for work and to participate in the welfare-to-work programs that are assigned to them.

An important element of the reform was that, per district, all welfare services (benefit payments, counseling, labor market activation, etc.) were provided by one welfare agency, as

opposed to the previous division of tasks and responsibilities between two administrative entities. However, there was no political consensus on where the new welfare agencies should be established: within the system of the centralized FEA or at the local authorities.

Ultimately, the introduction of the experimentation clause of Chapter 6c of Book II of the German Social Code mandated a policy experiment and the evaluation of the relative performance of two competing models. In the majority of the 439 German districts, local employment offices and local authorities formed a joint venture[5] that was subject to the central controlling standards of the FEA. Within the joint venture, the FEA is in charge of the administration of benefits, job placement, and the application of the main instruments of active labor market policy. In particular, guidelines for the use of active labor market policies, job placement and technical standards as computer software of the FEA are binding for centralized districts. Local authorities are tasked with administering payments for housing costs and special needs. Moreover, they provide counseling in specific contexts such as lone parent families, home care for elderly or disabled relatives, or alcohol and drug addiction. [6]

Out of the 439 German districts, 69 were allowed to opt for a more decentralized organization of welfare administration.[7] Under this system, local authorities autonomously operate the entire activation process, including counseling, benefits disbursement, job placement, and the allocation of benefit recipients to active labor market programs. In particular, local welfare agencies are legally and organizationally independent from central directives and guidelines in the decentralized system.

Table 1 summarizes the key characteristics of centralized and decentralized welfare agencies. In both the centralized and the decentralized systems, the largest share of welfare payment is financed by the federal government; only a small fraction of overall expenditure – identical in all districts – is taken from local tax budgets.

Include Table 1 here.

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[5] This joint venture is called *Arbeitsgemeinschaft (ARGE)* in German.

[6] A variant of this model arose where the local employment office and local authorities could not agree on forming a joint venture. In this case, both institutions continued to work separately in the district. However, because tasks are shared in a similar way as in the case of the centralized system, we do not differentiate between these two types in the empirical analysis.

[7] The German term for a decentralized district is *zugelassener kommunaler Träger (zkT)*.

It is important to understand the selection of districts into the two regimes. The number of decentralized districts (69) is equal to the number of deputies in the *Bundesrat*, the second chamber of the German Parliament. Each federal state could have anywhere between three and six decentralized districts, corresponding to its number of deputies in the *Bundesrat*. Within each state, districts could apply to opt out of the centralized system. In cases of excess demand, the state government made a selection from the applying districts.

In several federal states, the maximum number of districts that could opt for decentralized organization was not exhausted. The vacant places could then be filled by the districts not selected from other states in the first round. Looking at the regional distribution of applications, it appears that the selection process was strongly influenced by political affiliations. In both Lower Saxony and Hesse, where the conservative governments were strongly in favor of the decentralized system, 13 districts were allowed to opt out, even though these states only had 6 and 5 seats in the *Bundesrat*, respectively. In contrast, hardly any districts were proposed from Mecklenburg-West Pomerania or Rhineland-Palatinate, both of which were run at that time by social democrats. Hence, the rules for selection resulted in a regional concentration of decentralized agencies (WZB et al., 2008).

3   Description of the Data

In order to investigate whether centralized or decentralized welfare agencies are more successful in integrating welfare recipients into employment, we use a unique data set that was specifically collected for this research question.[8] The data are confined to 154 districts, a subset of all 439 German districts; of the sample districts, 51 are decentralized. The remaining 103 districts have a centralized organization. They were selected to obtain regional units with similar characteristics as the 51 decentralized agencies. Although evidence suggests that the adoption of a decentralized system was driven by the political affiliation of the state governments (WZB et al., 2008), some association could remain between local labor market characteristics and the opt-out from centralized welfare administration. Therefore, the distribution of regional characteristics is accounted for in the sampling procedure. In addition, we control for regional characteristics in the matching estimator (see Section 4).

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[8] This data set is publicly available as a scientific use file at the Federal Employment Agency. See Oertel et al. (2009) for details on data access.

When choosing comparable districts, we built directly on the previous work of Arntz et al. (2006)[9]. These authors identify regional variables that are relevant to the transition of the long-term unemployed into the labor market. In a second step, the authors use the reduced set of relevant regional variables and apply the distance matching suggested by Zhao (2004) to identify comparable districts in a regional matching procedure. Appendix 1 illustrates the regional location of the districts in our sample.

Appendix 2 shows that the matching of regions equalizes the means of the relevant regional variables. The table shows that equality of means cannot be rejected for the majority of the variables; the only exceptions are those variables that depend on the degree of urbanization of the district such as, for example, the share of commuters. Here, the mean in centralized districts is slightly higher than it is in decentralized districts. Furthermore, the employment rate, as an indicator of local labor market conditions, is weakly significantly different between both groups.

To obtain data on the organizational structure of the welfare agencies, repeated interviews (both standardized and semi-structured) were conducted with the agencies' management and staff in the 154 sample units. These surveys provided information about the type of case management, the activation concept, the placement strategies, the mix of active labor market policies, and several other organizational issues.[10] Apart from this information, a wide range of regional variables (e.g., unemployment rates, welfare ratios, GDP, population density, share of foreigners, etc.) were collected for each agency for both before and after the 2005 reform.

The individual-level data consist of a survey of welfare recipients who were registered at the 154 agencies. Between January and April 2007, 100 to 300 telephone interviews were conducted within each agency with welfare recipients; the number of interviews depended on the size of the welfare agency. In total, nearly 24,600 interviews were conducted. Approximately 80% (20,300) of the individuals interviewed were drawn from the stock of UBII recipients who were receiving welfare benefits in October 2006 (stock sample), whereas 20% (4,300) of the interviews are from an inflow sample of people entering the welfare system between August and December 2006. Unfortunately, entries into UBII in earlier months could not be sampled due to gaps in the data (see Section 4). In this paper, our analysis focuses on

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[9] The study by Arntz et al. (2006) was conducted to prepare the evaluation of the welfare reform.

[10] We use some of these organizational strategies in Section 5.2 to provide additional insights into the black box of welfare administration.

the stock sample. Because a large share of UBII recipients depend on welfare benefits for an extended period of time, the stock sample covers those individuals for whom the organization of welfare administration matters the most.

The survey data include individual characteristics (gender, age, marital and parental status, education, health and disability status, migration background, etc.), information on members of the household (number and age of household members and respondent's relation to them), and details concerning the labor market status and labor market history (current labor market state, former spells of insured and minor employment, former spells of unemployment, receipt of welfare benefits, participation in activation programs). Moreover, the surveys contain information about basic skills (e.g. reading, writing, math, and computer skills), further qualifications (e.g. driver's license), job search activities, and the concessions that respondents would be willing to make in order to obtain a new job.

The survey data were linked with administrative data from the FEA at the individual level. The administrative data include daily information about periods of employment and unemployment, job seeking, participation in active labor market programs, and benefit receipt. This information allows for the construction of comprehensive labor market histories of the sampled individuals. Descriptive information on these variables is presented in Section 4.3.

The outcome variables of interest are also provided by the FEA and indicate for each month between January and December 2007, the employment status of individuals under two definitions: employment without welfare receipt and employment combined with welfare receipt. In the first case, gross labor earnings (plus any income from other sources such as capital earnings) exceed the income threshold below which the individual is eligible for welfare benefits. In the second case, welfare benefits are paid in addition to labor earnings (and other non-benefit income) because employment does not provide a sufficient living income. In this case, integration into employment may be considered as only partially successful (partial integration).[11]

Because our analysis focuses on integration into employment, we restrict the sample to individuals who were unemployed at the time they entered the welfare system and at the time

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[11] The administrative data only contains information regarding employment that is subject to social insurance contribution. Therefore, our two outcome variables do not include spells of minor employment or self-employment. Both outcome variables are measured as binary variables.

of sampling. Furthermore, we restrict the data to persons aged between 18 and 57 years;[12] due to these restrictions, we have 13,286 observations (4,489 persons from districts with decentralized welfare organization and 8,797 from districts with centralized organization).

4   Estimation Approach

4.1   Individual Selection into Treatment

In the following, we consider decentralized organization of the local welfare administration as our treatment variable. To identify the causal effect, we must rule out selective participation in treatment. The most common types of selectivity encountered in the evaluation of labor market policies are self-selection and selection by a caseworker into the program. In our case, these types of selectivity were very unlikely. From the point of view of a welfare recipient or the caseworker, the 2005 reform of welfare administration and organization is an exogenous event that cannot be easily influenced. The only way to select into treatment would be to move to another district. However, welfare recipients usually cannot afford to relocate and are not encouraged to move as long as they remain on welfare.

A more serious problem could be that our sample was not drawn in January 2005 (when the reform was introduced) but in 2006, i.e. more than one year after the implementation of the reform. The reason for this delay is that the disruptions caused by the reform created considerable problems for the quality of administrative data during several months after the introduction of the reform. This particularly applied to decentralized welfare agencies, which continued to use their local computer systems. In principle, an interface for data collection was provided by the FEA, allowing these welfare agencies to feed their data directly into the FEA's statistics. In practice, however, the use of the interface was incomplete until the second half of 2006. Centralized agencies, on the other hand, had issues with a newly introduced software system. For these reasons, the quality of the data during the early periods after the reform is insufficient for our analysis. Therefore, we exclusively rely on data from 2006 and 2007. At this point in time, however, the composition of welfare recipients in the districts could itself be an outcome of decentralized or centralized organization. Thus, for example, if the centralized system were faster in integrating welfare recipients with good employment prospects in the early periods after the reform, the stock of welfare recipients in 2006 might

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[12] Persons aged 58 or older are no longer required to actively search for employment but may remain on welfare benefits until they reach the official retirement age of 65. Individuals aged 15 to 17 years are subject to compulsory schooling and cannot be expected to take up employment.

contain fewer welfare recipients with favorable characteristics than in decentralized districts.[13]

Another potential kind of selection concerns the inflow into welfare receipt. As mentioned in Section 2, UBII recipients must be able to work for at least 15 hours a week. In determining whether claimants to UBII meet this requirement, welfare agencies possess a considerable degree of leeway. If ability criteria differ systematically between centralized and decentralized welfare agencies, this may result in a different composition of welfare recipients with regard to characteristics such as illness or disability.

In order to solve these potential problems, we use a matching estimator that controls for individual-level selection. Because our data set combines administrative and survey data and captures all conceivable aspects of determining success in the labor market, we are confident that we are able to actually identify the causal effect of treatment. In addition, we check whether regional variables should be included, in addition to restricting the sample to comparable welfare agencies as described in Section 3.

4.2 Controlling for Selection by Statistical Matching

We define two possible treatment states for individual i: $D = 1$ for being registered at a decentralized welfare agency. or $D = 0$ for being registered at a centralized welfare agency. The potential binary employment outcomes corresponding to each of the states are denoted Y^1_i and Y^0_i. The individual treatment effect is defined as the difference between the two potential outcomes. Since the individual cannot be in both states at the same time, the observable outcome for i is given by $Y_i = Y^1_i \cdot D_i + (1 - D_i) \cdot Y^0_i$. We estimate the average effect of treatment on the treated (ATT), defined as

$$ATT = E(Y^1 - Y^0 | D=1) = E(Y^1 | D=1) - E(Y^0 | D=1). \tag{1}$$

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[13] This example is purely hypothetical. In fact, the extensive implementation studies (WZB et al., 2008) that were conducted as part of the evaluation do not suggest that either of the two models of organization had an advantage in integrating easy-to-place workers in 2005-06. In addition to controlling for selection by matching, estimations with a smaller sample of inflows into welfare receipt after October 2006 yielded even more pronounced results than the ones reported here. The estimated treatment effect of decentralized organization on leaving welfare receipt is -7.63% and is significant at the 1% level. The effect on employment is -4.01% and is significant at 10% level (ZEW et al., 2008, p. 184). Focusing exclusively on the inflows, however, would have provided only a partial view of the activation and integration process given the high proportion of long-term welfare recipients.

The second term on the right-hand side of (1) is not identified from the data without additional assumptions. Simply comparing the observable average outcomes of persons living in districts with centralized welfare agencies to approximate the unobservable outcomes for persons registered at decentralized agencies leads to biased estimates if individuals in the two types of agencies differ in characteristics that affect the expected outcomes, i.e. $E(Y^0|D = 1) \neq E(Y^1|D = 1)$.

To overcome this potential bias, we apply a matching estimator, using persons living in centralized districts who are similar in all relevant characteristics to the treatment group as a control group. The method is based on the intuitive principle that it is possible to "adjust away" differences between treated and non-treated outcomes by finding appropriate matches (Heckman et al., 1999). If this is true, the matching approach makes it possible to compare the treated and non-treated outcomes directly, without imposing further structure on the estimation problem.

The method of matching is a non-parametric approach and, therefore, no structural or parametric assumptions are required. However, it puts strong requirements on the data. In order for the ATT to be identified, the so-called Conditional Independence Assumption (CIA) must be fulfilled (Lechner, 2001). This means that, conditional on the set of relevant observable covariates X, the potential outcome Y^0 is independent of the organizational model: $Y^0 \amalg D|X$. In addition, it must be ensured that people who resemble the welfare recipients' characteristics distribution in districts with decentralized organization are available in districts with centralized welfare administration (common support condition), i.e., $Pr(D = 1|X) < 1$ (Smith and Todd, 2005a).

Direct matching on X is difficult if X is of high dimension, as many empty cells for particular combinations of covariate values occur. Therefore, Rosenbaum and Rubin (1983) suggest the use of balancing scores. One possible balancing score is the probability of being subject to treatment, the propensity score $p(X) = E(D = 1|X)$. This statistic summarizes the relevant covariates X in a single index function. All biases due to observable covariates are removed by conditioning solely on the propensity score.

The literature provides a number of different matching estimators (Heckman et al., 1999). These estimators differ with respect to the weights given to individuals in the control group that are considered to form the counterfactual outcome. We use a kernel matching estimator, which weighs the control observations according to their "distance" (in terms of the propensity score) to the treated individuals by means of an Epanechnikov kernel function and

a bandwidth of 0.06. According to Abadie and Imbens (2008), bootstrapped standard errors are unbiased for kernel matching (due to the smoothness of the objective function). Therefore, we estimate the standard errors using a bootstrap procedure with 250 replications. Persons residing in the same district may be affected by common shocks; this could affect the statistical inference, although it would not affect the consistency of the estimator. We account for this inference problem by estimating clustered standard errors at the agency level (using the non-overlapping block bootstrap), i.e. by re-sampling persons on the agency level, but not on the individual level.

Lastly, we need to invoke the Stable Unit Treatment Value Assumption (SUTVA) (Rubin, 1986) to render the model useful for causal analysis. The SUTVA rules out any cross-effects, meaning that the outcome for any individual must not depend on whether any other individual is in a centralized or decentralized district. In particular, substitution and displacement effects must not be present. This requires the regional labor markets to be sufficiently separated so that the success of one welfare agency with respect to job placement does not come at the cost of another welfare agency. Moreover, there should not be any general equilibrium effects. These requirements are addressed by a study at the aggregate level of all 439 welfare agencies (see IFO and IAW, 2008). From the findings of this study, there is robust evidence that the SUTVA holds.

4.3   Specification of the Propensity Score and Balancing Tests

As noted above, identification of the estimated treatment effects depends on the plausibility of the CIA, i.e. whether conditioning on the variables included in the propensity score removes any correlation between the treatment and the outcome variables. The availability of data for all relevant characteristics and their inclusion in the propensity score are, therefore, crucial requirements. At the individual level, we have access to a wide range of socio-demographic characteristics beyond the standard set of controls, such as migration background, household size and members, health impairments, basic mathematics, literacy and computer skills, self-assessed working capacity (measured in hours per day) and obstacles to employment such as provision of long-term care of relatives. In addition, we have detailed information on the labor market history of each individual, including frequency and duration of employment, unemployment, job seeking activity, active labor market policy program participation, and benefit receipt between 2001 and 2004 as well as information on more recent labor market history.

Our data lacks direct measures of individual motivation, attitudes, and aptitude. It is, however, likely that these characteristics are relatively persistent over time such that they have impacted labor market success before the treatment. For this reason, it is crucial that we are able to condition on individual employment histories in a detailed manner. This is also emphasized by Card and Sullivan (1988) and Heckman et al. (1998). Thus, making use of our unusually rich data set, we are confident that we capture all relevant factors that affect both participation in treatment and our outcome variables of interest.

Since we have a large number of potential control variables at our disposal for the specification of the propensity score, and because including irrelevant covariates may introduce noise into the calculation of the propensity score, we choose different specifications in order to check the robustness of the estimated treatment effects. The first specification contains the most important individual characteristics –gender, age, education, household composition, and several indicators for labor market history – as well as limited regional information. Based on the results of balancing tests, this parsimonious specification is our preferred specification. To these variables, we add further regional information in the second specification. The third specification contains the full set of covariates. Descriptive statistics for all variables are contained in Appendix 3, and the estimation results for the propensity score are illustrated in Appendix 4 for our preferred specification. All estimations are done separately for men and women.

Include Table 2 here.

To assess the quality of matching, we apply the following four balancing tests. First, we compare the means of the variables included in the propensity score between treatment and the control group and test for differences by applying t-tests. After successful matching, there should be no remaining differences in the distribution of the covariates. Second, we follow Rosenbaum and Rubin (1985), who suggest the use of the so-called standardized bias. Differences in means of single covariates between the treatment and control group are compared before and after matching, standardized by the mean standard deviation across groups before matching. A third test relates to the explanatory power of the propensity score model after matching. Re-running the same probit regression on the matched sample should result in an explained treatment variation of almost zero, as measured by the McFadden-R^2 (Sianesi, 2004). Fourth, we apply the quality indicator as suggested by Smith and Todd (2005b):

$$Z_k = \beta_0 + \beta_1 \hat{P}(Z) + \beta_2 \hat{P}(Z)^2 + \beta_3 \hat{P}(Z)^3 + \beta_4 \hat{P}(Z)^4$$
$$+ \beta_5 D + \beta_6 D\hat{P}(Z) + \beta_7 D\hat{P}(Z)^2 + \beta_8 D\hat{P}(Z)^3 + \beta_9 D\hat{P}(Z)^4 + \eta$$

Each variable included in the propensity score is regressed on a higher-order polynomial of the propensity score, the treatment indicator, and the interaction between both. In the ideal case, coefficients β_5 to β_9 should be jointly zero, indicating that there is no further observable selection into the treatment conditional on the propensity score.

As can be seen from the results of the balancing tests depicted in Table 2 and Appendix 3, matching quality is very satisfactory.[14] Appendix 3 shows that the equality of means of the variables included in the propensity score specification between treatment and control group cannot be rejected in just about any case. According to Table 2, the mean standardized bias is severely reduced after matching. The McFadden-R^2 estimates of the third test are almost zero after matching; thus, as intended, re-running the propensity score specification on the matched sample does not result in any explanatory power of the included covariates. In addition, almost all of the variables included in the propensity score model pass the test suggested by Smith and Todd (2005b).

5 Empirical results

For the evaluation of the relative effectiveness of decentralized vs. centralized welfare administration, we distinguish two different outcomes: employment without welfare receipt and employment with welfare receipt. Employment without welfare receipt means that the individual takes up employment and generates enough living income so that the individual does not receive welfare benefits. Employment with welfare receipt means that the individual is employed but still receives welfare benefits because employment does not provide a sufficient living income. Employment with welfare receipt could provide a stepping stone into employment without welfare receipt. From a policy point of view, we consider employment without welfare receipt as the more relevant measure to be used to assess the relative effectiveness of the two administrative models.

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[14] The table contains results for our preferred specification. A complete set of results is provided by the authors on request.

Before presenting the estimation results, we briefly describe the means of our individual outcome variables and compare them across individuals who are registered at centralized and decentralized welfare agencies (see Figures 1 and 2).

Include Figures 1 and 2 here.

For men and employment without welfare receipt, employment rates in districts with centralized welfare agencies are larger than they are in districts with decentralized organization (Figure 1). By December 2007, we observe a difference of about one and a half percentage points between decentralized and centralized welfare agencies (16.8% for centralized and 15.2% for decentralized welfare agencies). There is no difference between the two organizational models for women and for employment with welfare receipt for both genders.

Our econometric analysis is consistent with these descriptive findings. As discussed in Section 4, we use three different specifications for the propensity score. The estimated treatment effects of decentralized welfare agencies on the integration into employment without welfare receipt are presented in Figures 3 and 4 for both men and women. Rather than showing treatment effects at a single observation date, we display their evolution over the course of 2007, the year after sampling.

Include Figures 3 and 4 here.

For men, we observe a negative treatment effect, i.e. decentralized welfare agencies are less successful than centralized agencies in placing welfare recipients in jobs that provide a sufficient living income. The absolute effect rises from one to over three percentage points from January to August 2007, and declines moderately thereafter. These magnitudes are slightly larger than the descriptive evidence presented in Figure 1. The effects for May to November are significant at 5%, with t-statistics ranging from 1.96 to 2.91. With the exception of April, the effects for the other months are significant at 10%. The inclusion of further covariates leaves the estimated effects virtually unaffected. For women, we also find negative treatment effects, which are, however, smaller in magnitude than for men and are not statistically significant.

Given the relatively small fraction of people taking up employment without welfare receipt (Figure 1), the effect for men is substantial. The largest estimated effect of 3.5 percentage points, estimated for August 2007, implies that decentralized agencies have a 24% lower integration quota than do centralized agencies. The differences in the treatment effects

between men and women are conspicuous; in principle, the gender differences could result from a different treatment of men and women in each type of welfare agency. As of December, 2007, 44% of centralized agencies, compared to only 14% of decentralized agencies, were lacking a staff member specifically assigned to the task of ensuring equal opportunities and gender mainstreaming (IAW and ZEW, 2008, Table A1). This may provide some explanation as to why decentralized agencies perform relatively better in placing women into self-sufficient employment than men. In our interpretation, however, the differences between men and women can also be explained by the fact that it is often more difficult for women than for men to leave benefit receipt (Figure 1). This is primarily due to childcare obligations, which are still borne to a large extent by women, and insufficient child care facilities. Indeed, nearly 30% of female welfare recipients in the sample are single mothers. Also, while 72% of male welfare recipients state that they are capable of fulltime work, this is true for only 52% of the women in the sample (see Appendix 3).

Therefore, the treatment effect for men would suggest that centralized agencies do relatively well in placing welfare recipients into jobs unless further obstacles to employment such as child care obligations are present. In the absence of these obstacles, the centralized structure, with its highly standardized approaches to job placement, proves effective. Once individual obstacles are present, both types of welfare agencies perform equally because standardized procedures do not help in these cases.

Regarding employment with welfare receipt, the estimated treatment effects of decentralized welfare administration tend to be positive (Figures 5 and 6). However, the estimated effects are relatively small in magnitude (up to 1.4 percentage points for women, and up to 1 percentage point for men) and are not statistically significant. We tend to find a more pronounced effect for women, with the treatment effect reaching 10% significance in September 2007 in one out of three specifications of the propensity score. However, given the low significance overall, these differences should not be over-emphasized. We also note again that all of our estimates are robust to the inclusion of additional control variables at the regional and individual level.

Include Figures 5 and 6 here.

15

6   Looking Deeper into the Black Box of Welfare Administration

The significant treatment effect for men on employment without welfare receipt raises the question of whether centralized agencies are inherently better in placing welfare recipients into jobs or whether they use more successful approaches and strategies than could also be adopted by decentralized agencies. All centralized welfare agencies are subject to central FEA guidelines, central controlling, and certain directives regarding the use of activation strategies. Nevertheless, welfare agencies have leeway in the way they internally organize their services for welfare recipients. The implementation of organizational approaches is not specific to either administrative model, and we observe variations within both agencies with different organizational features. The question then arises: does the relative success of centralized agencies hinge on centralization itself?

To answer this question, we exploit in-depth data on the organizational strategies applied in the welfare agencies. According to the implementation studies (IAW and ZEW, 2008; WZB et al., 2008), the following features are the most important elements in the internal organization of tasks and the cooperation with external partners:[15]

1) Generalized case management for all clients as opposed to case management by specialized staff for clients with multiple obstacles to employment
2) Integration of activation and placement as opposed to the separation of these functions
3) Use of customer segmentation procedures
4) Establishment of an employer service, i.e. specialized staff maintaining contact with employers
5) Subcontracting of placement services to private providers

Table 3 provides a more detailed description of the organizational features, and outlines some arguments as to why they could affect the integration success of welfare recipients. As can also be seen from the table, customer segmentation and particularly, generalized case management tend to be used much more frequently by decentralized agencies; integration of activation and placement is slightly more common among centralized agencies, while the other two strategies are not related to agency type.

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[15] The effects of further characteristics and strategies of the welfare agencies are considered in ZEW et al. (2008).

Include Table 3 here.

To check whether the effect of decentralized agencies can be attributed to one of these strategies, we require a multivariate framework using agency type and strategies. For this purpose, we use binary probit models; the probit estimations contain all covariates used in the preferred specification of the propensity score. In addition, dummy variables for decentralized welfare agencies and for the organizational features are included. We then test whether a significant effect of decentralized agencies remains, despite controlling for organization.

We focus on integration without welfare receipt as the outcome variable. Complete results for the probit estimations are available on request. Table 4 contains a subset of the estimation results for April, August and December, 2007. The entries in the table are marginal effects of the dummy variables on the outcome variable and their magnitudes and treatment effects from matching are, therefore, comparable.

Include Table 4 here.

Similar to the matching results, we find a negative effect of decentralization for men. However, the effect is smaller (up to 2.5 percentage points) and significant only in the middle of the observation period. For women, the effect of decentralized agencies is again insignificant. The organizational variables themselves are mostly insignificant, the effect of an employer service in the subsample of women being the only exception. The complete set of results shows that this effect is negative and significant at 10% in the last four months of the observation period. This could be interpreted as evidence that the presence of a specific organizational unit of the agency specializing in employer contacts is a disadvantage for women. Unfortunately, there is no direct evidence with which this result can be validated.

The significant negative effect of decentralized welfare agencies on employment without welfare receipt for men is largely robust to the inclusion of further organizational strategies despite a slight decline in magnitude. We conclude that this effect is due to the inherent differences between centralized and decentralized welfare agencies, not to the adoption of particular forms of internal organization.

7   Conclusions

The 2005 reform of the German welfare system introduced two competing organizational systems in an otherwise homogenous institutional setting: decentralized and centralized wel-

fare agencies. In order to evaluate their relative performance, we estimate their effect on the integration of welfare recipients into the labor market. Our analysis takes regional differences as well as individual selection into account. Estimation is based on exceptionally rich data from various sources. We combine a detailed survey of welfare recipients with administrative records from the Federal Employment Agency. In addition, we use a large set of variables when describing the local labor market. Finally, we consider qualitative information on organizational details for each welfare agency in our sample.

We find that decentralized welfare agencies have a negative effect on male welfare recipients with respect to integration into self-sufficient employment, i.e. employment without welfare receipt. We find insignificant effects for women and for employment with supplementary welfare receipt. Based on these results, we conclude that centralized welfare administration performs better in integrating male welfare recipients into employment as opposed to female welfare recipients. Given the low transition intensity from welfare receipt into employment, the magnitudes of the effects for men are substantial.

Why are there gender differences with respect to the relative performance of the two types of welfare agencies? In our interpretation, centralized standards and routines work effectively for welfare recipients without additional obstacles to employment. Once additional obstacles come into play, such as a lack of child care facilities, standardized placement loses its effectiveness. In particular, tailored solutions to individual needs often require the cooperation of local participants. This is why, in our opinion, the centralized model has no advantage over the decentralized model in the case of female welfare recipients.

We explore further channels through which our results may have emerged. Because welfare agencies have significant discretionary power with respect to internal organization, we check whether the organization of tasks at individual welfare agencies is responsible for the result of decentralization. Although the effects are slightly weakened by the inclusion of the additional organizational strategies, the overall result is not affected. We conclude that the negative effect of decentralization is due to inherent differences between centralized and decentralized welfare agencies and is not subject to their choices regarding the internal organization of tasks. Examples of these inherent differences are the application of central guidelines of the Federal Employment Agency concerning the instruments of placement, activation and active labor market policy, as well as the (de)centralized controlling system. Because all centralized agencies are obligated to use the policies and standards mandated by the FEA, there is, unfortunately, no variation that could be used to distinguish these different elements.

18

This paper provides quantitative evidence on the effects of and decentralization of public welfare on employment transitions. The results point to the importance of the organizational aspects of welfare administration to the integration of welfare recipients into employment. In particular, they suggest that the impact of organization differs between labor market groups. Given the high complexity of the public welfare system, identifying successful and less successful strategies for the organization of welfare administration remains a difficult yet highly relevant task.

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Tables and Figures

Table 1: Organizational Features of Decentralized and Centralized Welfare Agencies

	Decentralized Agencies	**Centralized Agencies**
Number of Entities	69	370
Legal Form	Part of local administration	Part of FEA, but is a separate legal entity
Organizational Affiliation	Local authorities	Joint venture between local employment office of the FEA and local authorities
Main Source of Financing	Federal government	Federal government
Centralized Standards of FEA	Not binding, although legal restrictions exist	Binding for job placement, provision of active labor market programs, monitoring of efforts
Software	Specific solutions for each local authority	Standard system of FEA

Remarks: The 370 centralized agencies include 19 agencies with separate task performance (see footnote 9). The numbers presented here refer to October 2006 and are based on the 439 German districts at this time.

Table 2: Indicators for Matching Quality

	Men	**Women**
Before Matching		
McFadden-R^2	0.012	0.009
LR-Test	92.730	77.630
p-value	0.000	0.000
Mean standardized bias	4.686	4.977
After Matching		
McFadden-R^2	0.000	0.001
LR-Test	2.740	9.050
p-value	1.000	0.999
Mean standardized bias	0.829	1.440
Smith and Todd (2005b) balancing test		
p-values > 0.05	25	19
p-values > 0.01	25	24

Remarks: McFadden-R^2 derives from a probit estimation of the propensity score on all covariates considered. The LR-statistic and the corresponding p-value derive from a likelihood-ratio test of the joint insignificance of all covariates. The mean standardized bias has been calculated as an unweighted average of all covariates. The Smith-Todd test displays the number of covariates passing the test at the indicated significance level. There are 26 total covariates.

Table 3: Definition of Organizational Variables

Definition	Possible Impact on Integration	Frequency in Sample
Generalized Case Management		
Case managers counsel all types of clients. There is no assignment of welfare recipients with multiple obstacles to employment to specialist caseworkers.	Better placement under specialized case management if clients with specific problems require specialized expertise. Generalized case management facilitates individual counseling as clients have fewer contact persons.	0.69 (decentralized agencies) 0.24 (centralized agencies)
Integration of Activation and Placement		
Clients are counseled (activated) and placed into employment by the same staff members. There is no assignment of specialized staff to the two tasks.	Integration reduces the number of contact persons for each welfare recipient, and facilitates a holistic approach. In contrast, separation leads to gains from specialization but may create coordination problems at the interface of both tasks.	0.51 (decentralized) 0.59 (centralized)
Customer Segmentation		
Classification of clients into different groups receiving different treatment during activation	Segmentation may increase employment rates among groups that are activated more intensely but reduces integration into employment in other groups.	0.84 (decentralized) 0.66 (centralized)
Employer Service		
A team of agency staff members maintains a network with employers and serves as contact persons for them	Networking may result in better placement. However, internal coordination problems between the employer service and caseworkers may arise.	0.86 (decentralized) 0.83 (centralized)
Subcontracting of Placement Services		
The welfare agency uses private employment services to place some of their clients into employment.	Specialization gains may occur. However, private agencies may work more or less effectively compared to the public employment service. Requires proper assignment of welfare recipients to service providers.	0.41 (decentralized) 0.40 (centralized)

Table 4: Estimated Profit Effects of Organizational Features

	Men			Women		
	April	August	December	April	August	December
Decentralized welfare agency	-0.011	-0.026	-0.016	-0.005	-0.003	-0.004
	0.007	0.012	0.014	0.006	0.007	0.011
Generalized case management	0.004	0.001	-0.009	-0.006	0.000	0.003
	0.007	0.012	0.014	0.006	0.007	0.010
Integration of activation and placement	-0.001	-0.006	-0.004	0.004	0.009	-0.001
	0.007	0.010	0.013	0.006	0.007	0.009
Customer segmentation	0.001	-0.009	0.007	0.001	-0.004	0.002
	0.007	0.010	0.012	0.006	0.007	0.009
Employer service	-0.009	0.003	-0.019	-0.013	-0.013	-0.025 *
	0.008	0.013	0.017	0.009	0.011	0.014
Subcontracting of placement services	-0.001	0.001	0.000	-0.005	-0.003	-0.008
	0.006	0.010	0.012	0.006	0.007	0.009
McFadden-R^2	0.069	0.067	0.069	0.081	0.078	0.072
Log-Likelihood	-1559.59	-2368.69	-2571.75	-1358.90	-1838.24	-2141.99

Remarks: Marginal effects (first row) and standard errors (second row) are displayed *** denotes $p<0.01$, ** denotes $p<0.05$, and * denotes $p<0.1$. The dependent variable in each model and for each month is defined as 1 if an individual is employed and does not receive welfare benefits anymore. Otherwise, the variable is 0. The number of observations in each model is 6217. Standard errors take into account clustering at the agency level. All models include the covariates used in the preferred propensity score specification of the matching analysis as further regressors. The detailed results are not displayed here but are available from the authors upon request.

Figure 1: Means of the outcome variable "employment *without* welfare receipt"
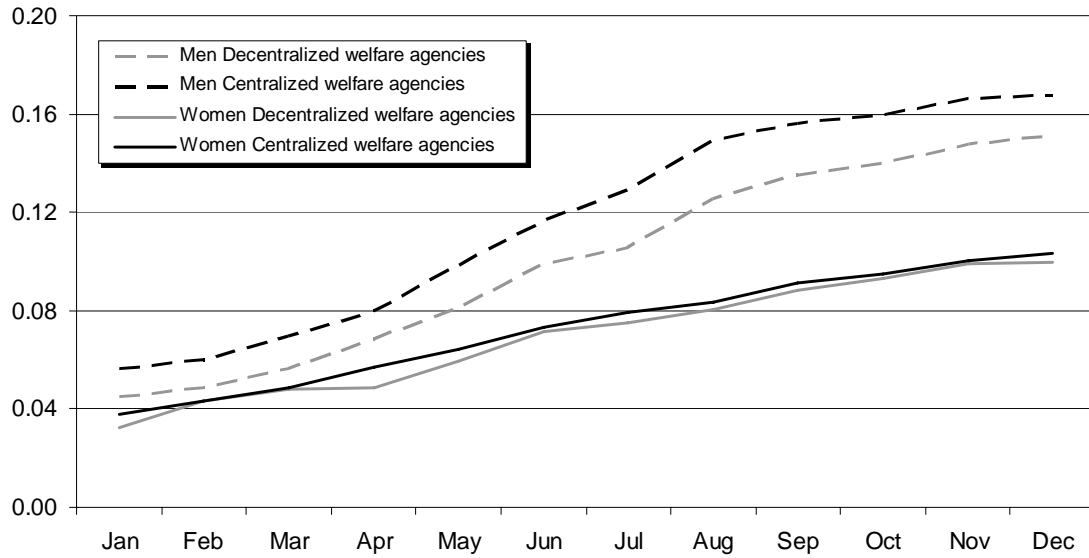
Figure 2: Means of the outcome variable "employment *with* welfare receipt"
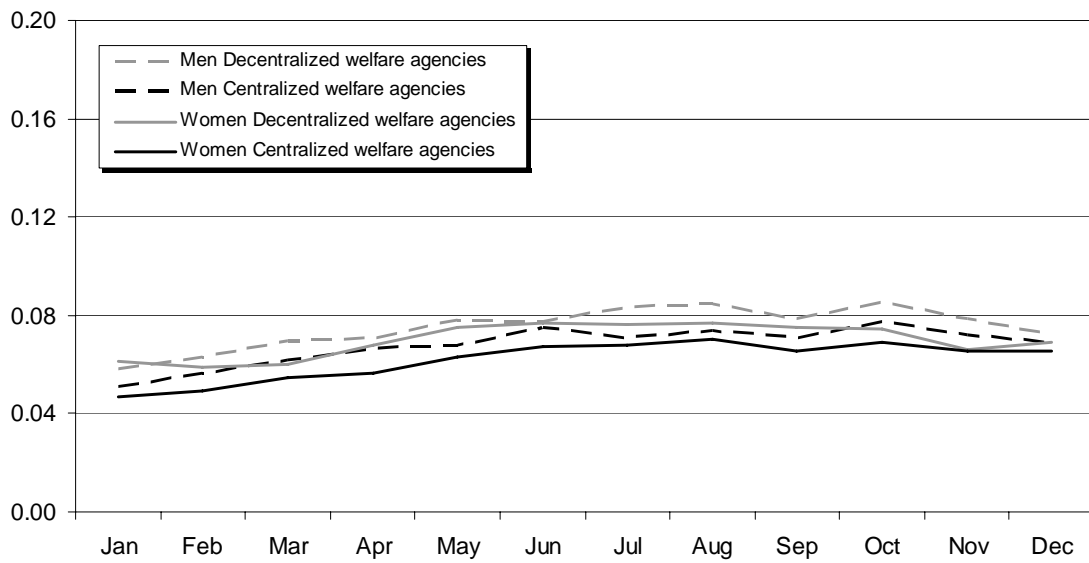
Figure 3: Estimated treatment effects on employment *without* welfare receipt, men
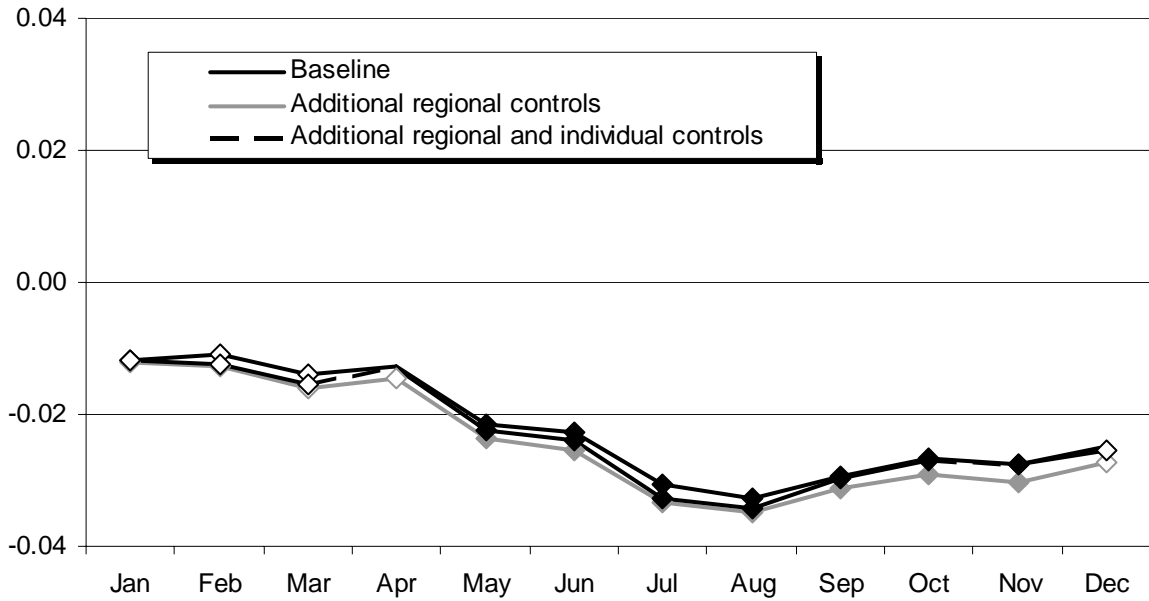
Notes: ♦ indicates significance at the 5% level, ◊ significance at the 10% level

Figure 4: Estimated treatment effects on employment *without* welfare receipt, women
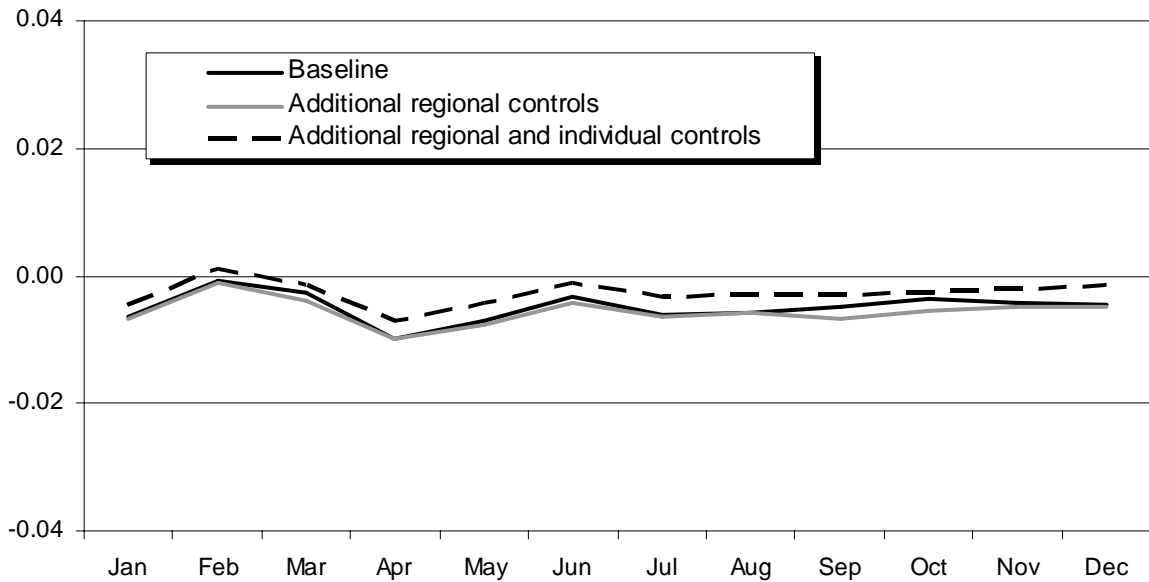
Notes: ♦ indicates significance at the 5% level, ◊ significance at the 10% level

Figure 5: Estimated treatment effects on employment *with* welfare receipt, men
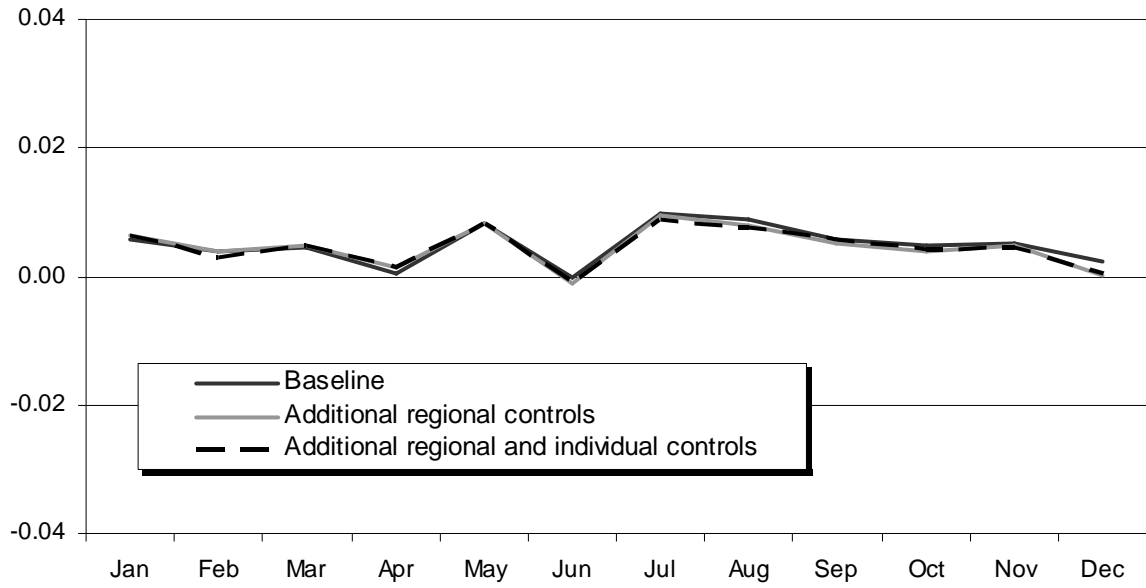
Notes: ♦ indicates significance at the 5% level, ◊ significance at the 10% level

Figure 6: Estimated treatment effects on employment *with* welfare receipt, women
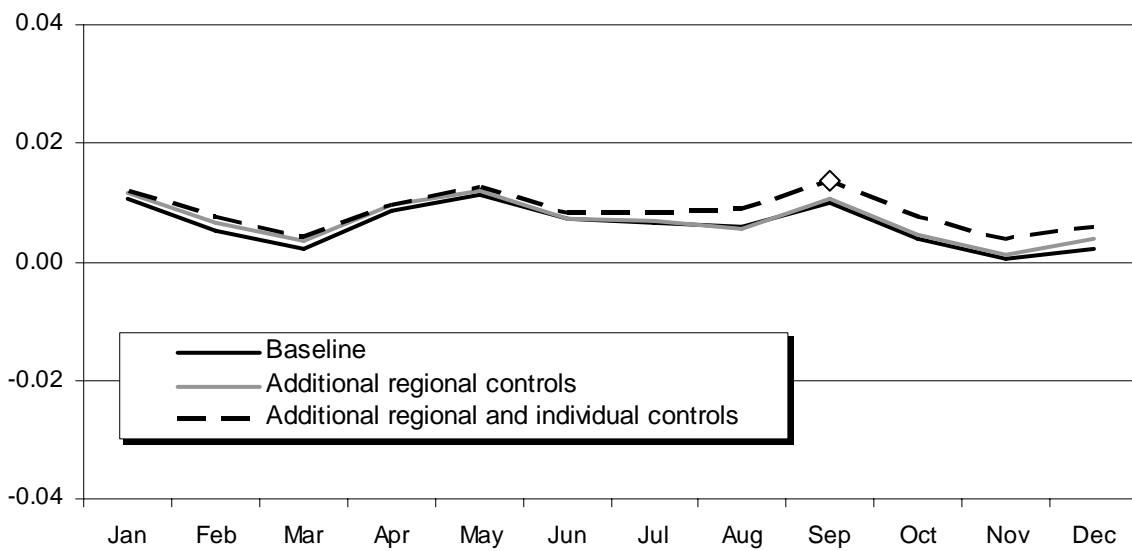
Notes: ♦ indicates significance at the 5% level, ◊ significance at the 10% level

31

Appendix 1: Map of the 154 welfare agencies in the sample
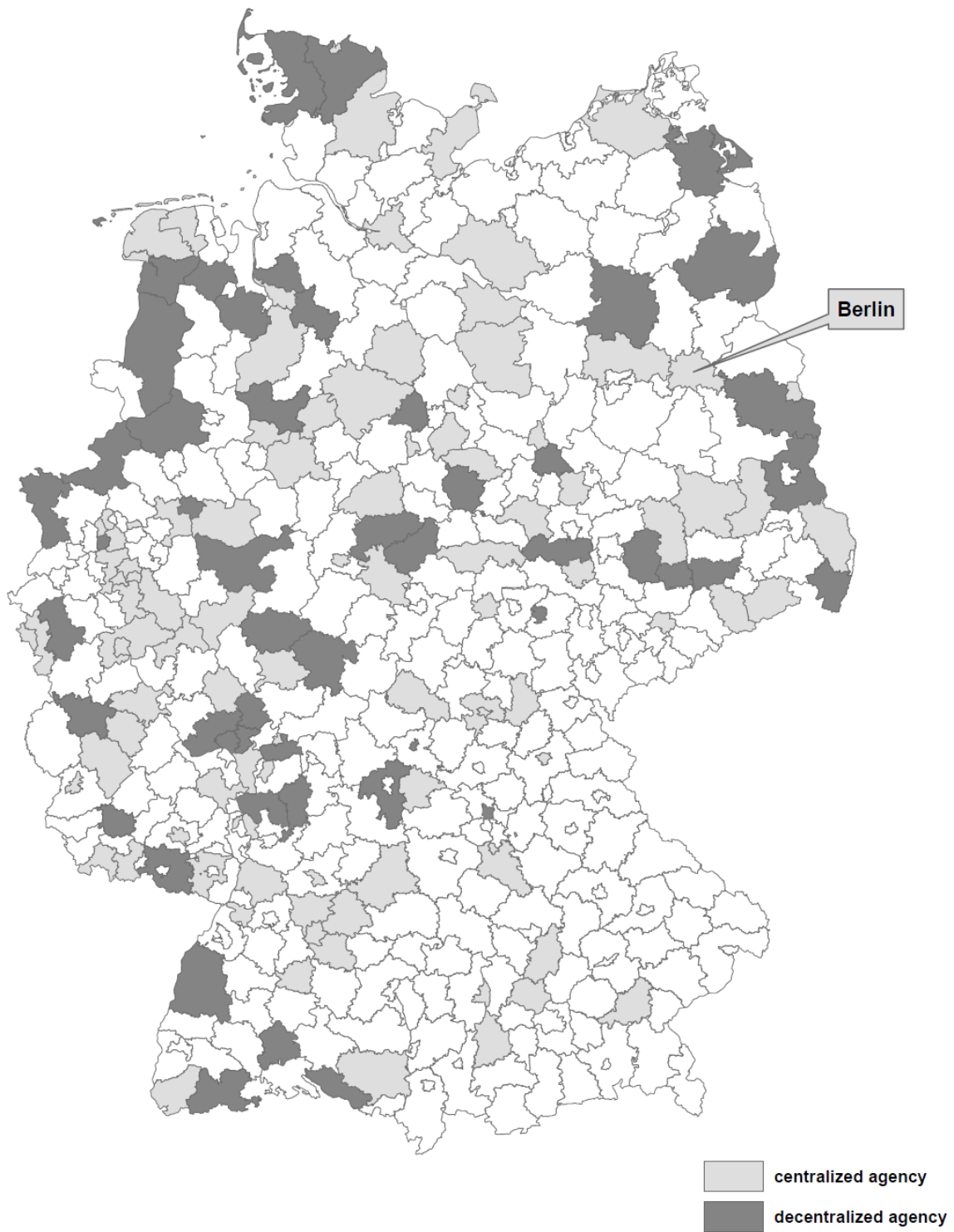
Berlin

| | centralized agency |
| | decentralized agency |

Appendix 2: Balancing of regional variables among the sampled welfare agencies

	Centralized agencies	Decentralized agencies	p-value
Unemployment rate (Source: FEA)	11.309	11.412	0.906
Unemployment rate of the young (age < 25) (Source: FEA)	10.628	10.505	0.860
Unemployment rate of foreigners (Source: FEA)	23.285	24.340	0.567
Personnel expenditure per unemployed in the stock (classified)	373.435	375.562	0.867
Personnel expenditure per unemployed (inflow)	2442.675	2440.875	0.969
Material expenses per unemployed (classified)	45.188	48.830	0.100
Placement expenditure as a share of total expenditure (classified)	0.024	0.028	0.315
Ratio of caseworkers to unemployed (classified)	0.016	0.016	0.837
Ratio of placement officers with fixed-term contract to unemployed	0.002	0.002	0.895
Ratio of unemployed to applicants	0.804	0.802	0.570
Ratio of male to female unemployed	1.300	1.296	0.892
Ratio of young (< 25) to old (> 50) unemployed (in percent)	49.478	50.966	0.339
Share of unemployed under age 25 (in percent)	12.142	12.211	0.802
Share of unemployed over age 50	0.123	0.116	0.067
Unemployment-Vacancy (UV) relation in textile industry	73.592	84.213	0.301
UV relation in construction sector	37.124	35.640	0.702
UV relation in engineering	16.267	17.857	0.567
UV relation in commerce sector	24.820	27.332	0.462
UV relation in service sector	20.753	24.232	0.212
UV relation in metal industry	15.261	14.610	0.661
UV relation in healthcare	6.346	6.356	0.983
UV relation in social sector	11.433	11.121	0.728
UV relation overall	30.208	32.386	0.471
Share of employees with fixed-term contract	0.811	0.780	0.788
Share of long-term unemployed	0.332	0.333	0.896
Share of severely disabled unemployed	0.040	0.039	0.809
Ratio of welfare recipients receiving no unemployment benefits to all unemployed	0.163	0.101	0.198
Ratio of welfare recipients receiving no unemployment benefits to all unemployed welfare recipients	0.347	0.374	0.057
Rate of long-term unemployed	0.332	0.333	0.893
Rate of long-term unemployed under age 25	0.072	0.069	0.492
Rate of long-term unemployed over age 50	0.508	0.505	0.769
FF per unemployed	0.007	0.009	0.408
FF per male unemployed	0.008	0.010	0.479
FF per female unemployed	0.006	0.008	0.337
FF per unemployed over age 50	0.004	0.005	0.405
FF per unemployed under age 25	0.014	0.019	0.253
Wage subsidies per unemployed	0.032	0.033	0.753
Wage subsidies per unemployed over age 50	0.062	0.065	0.763
Total transitional allowance per unemployed	0.018	0.017	0.787
Bridging allowance per unemployed over age 50	0.008	0.009	0.638
Bridging allowance per unemployed under age 25	0.008	0.007	0.735
Wage subsidies for long-term unemployed per unemployed	0.002	0.003	0.168
Wage subsidies for long-term unemployed per male unemployed	0.002	0.003	0.149
Wage subsidies for long-term unemployed per female unemployed	0.002	0.003	0.131
ABM+SAM/unemployed+ABM+SAM	0.025	0.029	0.444
ABM+SAM/unemployed+ABM+SAM (men)	0.027	0.031	0.407

Appendix 2: Balancing of regional variables among the sampled welfare agencies

	Centralized agencies	Decentralized agencies	p-value
ABM+SAM/unemployed+ABM+SAM (women)	0.023	0.026	0.508
ABM/unemployed+ABM	0.017	0.019	0.430
ABM/unemployed+ABM (women)	0.016	0.018	0.488
ABM/unemployed+ABM (men)	0.017	0.020	0.389
FbW/(unemployed+FbW)	0.058	0.060	0.205
FbW/(unemployed+FbW) (men)	0.049	0.052	0.310
FbW/(unemployed+FbW) (women)	0.069	0.071	0.264
FbW/(unemployed+FbW) (age > 50)	0.014	0.015	0.360
FbW/(unemployed+FbW) (age < 25)	0.054	0.055	0.741
TM/(unemployed+TM)	0.022	0.022	0.637
TM/(unemployed+TM) (women)	0.023	0.023	0.763
TM/(unemployed+TM) (men)	0.022	0.021	0.539
TM/(unemployed+TM) (age > 50)	0.010	0.010	0.883
TM/(unemployed+TM) (age < 25)	0.036	0.035	0.828
Share of ESF-assisted unemployed	0.005	0.006	0.720
Share of persons in minor employment	0.164	0.193	0.084
JUMP per unemployed (age <25)	0.121	0.136	0.209
Total unemployment rate (Source: Statistical Office)	12.435	12.520	0.927
Female unemployment rate (Source: Statistical Office)	11.601	11.839	0.808
Male unemployment rate (Source: Statistical Office)	13.161	13.120	0.964
Export turnover in manufacturing per employee	52.876	55.487	0.672
Commuter balance per 1000 employees	-64.233	-172.431	0.034
Migration balance/ gross population	0.001	0.001	0.571
Rate of social assistance recipients	0.036	0.028	0.004
Rate of social assistance recipients (men)	0.033	0.025	0.004
Rate of social assistance recipients (women)	0.039	0.031	0.004
Rate of social assistance recipients (natives)	0.032	0.025	0.006
Rate of social assistance recipients (foreigners)	0.083	0.068	0.035
Total business founding intensity per 10000 employable persons	45.947	43.676	0.268
Business foundations per 10000 inhabitants aged 15 to 64	149.643	146.700	0.517
Population density (inhabitants per square meter)	833.656	339.509	0.001
GDP per economically active person	51.657	51.343	0.826
Employment rate	0.465	0.424	0.075
Share of foreigners in total population	0.084	0.065	0.032
Rate of economically active men	0.357	0.361	0.450
Rate of economically active women	0.284	0.285	0.823
Rate of economically active population	0.320	0.322	0.535
Average number of years in apprenticeship per employee (subject to social insurance contribution)	14.707	14.651	0.019
Available infant care places per infant	0.637	0.655	0.339
Available child care places per child	0.281	0.285	0.777
Universities per inhabitant (classified)	0.563	0.373	0.121

Remarks: All variables measured in December 2003. FF is the discretionary budget of a local employment office. ABM denotes the number of participants in job creation schemes, SAM participants in structural adjustment measures. FbW persons participating in long-term training, TM persons participating in short-term training, JUMP the number of participants in a program for the activation of young unemployed persons. FEA = Federal Employment Agency. ESF = European Social Fund.

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
Gender								
Male							Survey	1
Age								
18 to 24 years	0.185	0.194	0.423	0.229	0.250	0.056	Survey	1
	0.186	0.188	0.841	0.229	0.234	0.684		
25 to 34 years	0.166	0.208	0.000	0.218	0.233	0.173	Survey	1
	0.166	0.170	0.770	0.218	0.224	0.662		
35 to 44 years	0.222	0.201	0.052	0.220	0.212	0.394	Survey	1
	0.221	0.216	0.689	0.220	0.217	0.745		
45 to 57 years	0.427	0.397	0.026	0.332	0.306	0.025	Survey	1
	0.427	0.427	0.965	0.332	0.326	0.641		
Schooling								
Secondary general school	0.465	0.500	0.008	0.421	0.449	0.023	Survey	1
	0.465	0.475	0.513	0.421	0.437	0.273		
Intermediate secondary school	0.303	0.264	0.002	0.386	0.350	0.003	Survey	1
	0.302	0.294	0.588	0.386	0.375	0.422		
University entrance diploma	0.167	0.151	0.100	0.144	0.133	0.182	Survey	1
	0.167	0.164	0.806	0.144	0.143	0.906		
Other or missing	0.066	0.084	0.010	0.049	0.068	0.002	Survey	1
	0.066	0.066	0.962	0.049	0.045	0.598		
Migration background								
Migrant	0.244	0.260	0.174	0.248	0.258	0.379	Survey	1
	0.245	0.247	0.886	0.248	0.256	0.512		
Household size								
1 person	0.418	0.464	0.001	0.234	0.244	0.323	Survey	1
	0.418	0.426	0.602	0.234	0.242	0.515		
2 persons	0.203	0.182	0.045	0.353	0.342	0.351	Survey	1
	0.203	0.199	0.736	0.353	0.349	0.774		
3 or more persons	0.379	0.354	0.049	0.414	0.414	0.965	Survey	1
	0.379	0.375	0.800	0.414	0.410	0.776		
Number of children								

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
No children	0.708	0.736	0.020	0.487	0.486	0.990	Survey	1
	0.709	0.714	0.714	0.487	0.490	0.839		
1 child	0.129	0.125	0.631	0.307	0.294	0.269	Survey	1
	0.129	0.129	0.995	0.307	0.301	0.684		
2 or more children	0.163	0.139	0.013	0.207	0.220	0.212	Survey	1
	0.162	0.157	0.646	0.207	0.209	0.833		
Obstacles to employment								
Disabled	0.162	0.127	0.000	0.076	0.067	0.169	Survey	1
	0.161	0.151	0.367	0.076	0.073	0.687		
Care obligation	0.024	0.020	0.229	0.043	0.042	0.748	Survey	1
	0.024	0.023	0.813	0.043	0.043	0.945		
Status before welfare receipt								
(Minor) employment	0.294	0.323	0.020	0.316	0.305	0.347	Survey	1
	0.294	0.298	0.796	0.316	0.313	0.818		
Labor market history from 2001 to 2004								
Number of half-months unemployed in 2004	12.264	12.300	0.888	9.582	8.871	0.004	Admin	1
	12.272	12.372	0.738	9.582	9.472	0.696		
Number of half-months unemployed in 2003	10.215	10.307	0.728	7.973	7.118	0.000	Admin	1
	10.225	10.324	0.746	7.973	7.723	0.364		
Number of half-months unemployed in 2002	8.105	8.059	0.856	6.093	5.532	0.009	Admin	1
	8.102	8.150	0.870	6.093	5.904	0.451		
Number of half-months unemployed in 2001	6.346	6.275	0.757	5.171	4.556	0.002	Admin	1
	6.345	6.366	0.937	5.171	4.868	0.196		
Number of half-months out of labor force from 2001 to 2004	17.056	19.778	0.000	23.952	28.477	0.000	Admin	1
	17.072	17.416	0.672	23.952	24.104	0.861		
Mean duration out of labor force from 2003 to 2004 in half-months	4.393	5.208	0.006	7.117	9.048	0.000	Admin	1
	4.397	4.450	0.870	7.117	6.948	0.672		
Number of programs from 2003 to 2004	0.351	0.384	0.060	0.278	0.262	0.259	Admin	1
	0.351	0.352	0.954	0.278	0.275	0.867		
Mean duration of programs from 2003 to 2004 in half-months	2.351	2.322	0.845	1.973	1.730	0.075	Admin	1
	2.347	2.349	0.993	1.973	1.855	0.459		
Current welfare spell								

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
Months in welfare before 10/2006	13.862	13.757	0.659	14.532	14.595	0.770	Survey	1
	13.875	13.895	0.941	14.532	14.489	0.864		
Start after 10/2006 or missing	0.158	0.157	0.965	0.129	0.126	0.721	Survey	1
	0.157	0.158	0.996	0.129	0.128	0.960		
Regional information								
Unemployment ratio (high)	0.250	0.223	0.017	0.282	0.231	0.000	Regional	1
	0.250	0.245	0.724	0.282	0.256	0.037		
Urban district	0.167	0.369	0.000	0.163	0.371	0.000	Regional	1
	0.167	0.164	0.849	0.165	0.165	0.962		
Further regional variables								
GDP per employed person (high)	0.265	0.308	0.001	0.262	0.320	0.000	Regional	2
	0.266	0.300	0.013	0.263	0.299	0.005		
Population density (high)	0.210	0.393	0.000	0.205	0.392	0.000	Regional	2
	0.210	0.209	0.972	0.207	0.211	0.704		
Labor market conditions above average	0.358	0.284	0.000	0.346	0.304	0.000	Regional	2
	0.358	0.373	0.309	0.347	0.367	0.141		
Labor market conditions below average	0.331	0.388	0.000	0.336	0.382	0.000	Regional	2
	0.331	0.338	0.612	0.339	0.350	0.395		
East Germany	0.262	0.212	0.000	0.294	0.223	0.000	Regional	2
	0.262	0.247	0.283	0.290	0.277	0.312		
Further socio-demographic variables								
At least one child aged below 3 in the household	0.115	0.108	0.460	0.180	0.165	0.101	Survey	3
	0.114	0.113	0.869	0.180	0.164	0.139		
Lone parent status	0.023	0.019	0.300	0.295	0.299	0.752	Survey	3
	0.023	0.021	0.753	0.295	0.296	0.947		
Born abroad	0.227	0.225	0.847	0.229	0.226	0.797	Survey	3
	0.227	0.217	0.444	0.229	0.227	0.897		
Foreign language spoken in the household	0.150	0.169	0.055	0.144	0.146	0.770	Survey	3
	0.150	0.160	0.380	0.144	0.145	0.873		
Professional qualification								
None	0.229	0.272	0.000	0.272	0.327	0.000	Survey	3
	0.230	0.249	0.138	0.272	0.300	0.027		

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
In-firm training	0.464	0.456	0.548	0.425	0.387	0.002	Survey	3
	0.464	0.469	0.776	0.425	0.404	0.135		
Off-the-job training	0.174	0.153	0.032	0.208	0.185	0.018	Survey	3
	0.174	0.161	0.275	0.208	0.193	0.180		
University degree	0.071	0.067	0.613	0.053	0.061	0.197	Survey	3
	0.071	0.073	0.788	0.053	0.065	0.095		
Other or missing	0.061	0.052	0.103	0.042	0.041	0.870	Survey	3
	0.062	0.048	0.055	0.042	0.039	0.548		
Self-assessment of overall state of health								
Good	0.556	0.576	0.130	0.593	0.620	0.029	Survey	3
	0.556	0.564	0.631	0.593	0.622	0.045		
Satisfactory	0.245	0.235	0.346	0.230	0.210	0.048	Survey	3
	0.245	0.240	0.704	0.230	0.211	0.098		
Poor	0.194	0.186	0.440	0.175	0.168	0.511	Survey	3
	0.194	0.193	0.921	0.175	0.166	0.444		
Missing	0.004	0.003	0.430	0.002	0.002	0.896	Survey	3
	0.004	0.003	0.551	0.002	0.002	0.892		
Impairments to health								
Gastro-intestinal diseases	0.152	0.155	0.701	0.152	0.176	0.010	Survey	3
	0.151	0.157	0.613	0.152	0.175	0.029		
Cardiovascular diseases	0.175	0.190	0.150	0.217	0.224	0.495	Survey	3
	0.175	0.199	0.054	0.217	0.222	0.699		
Rheumatism and other articular trouble	0.288	0.288	0.971	0.261	0.247	0.198	Survey	3
	0.289	0.298	0.493	0.261	0.251	0.429		
Sleep disorders	0.230	0.244	0.222	0.260	0.280	0.062	Survey	3
	0.230	0.246	0.236	0.260	0.279	0.130		
Nervous disorders	0.171	0.177	0.585	0.224	0.232	0.454	Survey	3
	0.172	0.178	0.607	0.224	0.229	0.680		
Allergies	0.173	0.168	0.608	0.252	0.272	0.077	Survey	3
	0.173	0.168	0.665	0.252	0.270	0.151		
Back complaint	0.418	0.405	0.340	0.423	0.414	0.468	Survey	3
	0.417	0.413	0.806	0.423	0.417	0.702		

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
Other complaints	0.048	0.045	0.583	0.040	0.037	0.437	Survey	3
	0.048	0.047	0.810	0.040	0.037	0.508		
No health problems	0.282	0.289	0.550	0.273	0.257	0.158	Survey	3
	0.282	0.281	0.931	0.273	0.259	0.263		
Self-assessment of daily working capacity								
Less than 3 hours	0.042	0.041	0.908	0.039	0.044	0.377	Survey	3
	0.042	0.045	0.643	0.039	0.043	0.460		
3 to 6 hours	0.077	0.076	0.794	0.183	0.178	0.643	Survey	3
	0.078	0.079	0.900	0.183	0.177	0.600		
6 to 8 hours	0.131	0.124	0.437	0.235	0.223	0.232	Survey	3
	0.131	0.127	0.724	0.235	0.223	0.329		
8 or more hours	0.706	0.726	0.105	0.514	0.528	0.269	Survey	3
	0.706	0.714	0.582	0.514	0.528	0.314		
Missing	0.044	0.034	0.045	0.029	0.028	0.754	Survey	3
	0.044	0.036	0.186	0.029	0.028	0.818		
Self-assessment of basic skills measured from 1 (= very good) to 6 (= fail); Missings are set to 3,5								
Reading and Writing (in mother tongue)	2.121	2.080	0.138	1.920	1.885	0.155	Survey	3
	2.122	2.062	0.058	1.920	1.870	0.075		
Mathematics	2.370	2.326	0.108	2.549	2.595	0.090	Survey	3
	2.369	2.301	0.026	2.549	2.560	0.737		
Emails and Internet	2.993	2.984	0.845	3.113	3.079	0.415	Survey	3
	2.993	2.995	0.960	3.113	3.080	0.485		
Number of unemployment spells since entrance into working life								
1	0.333	0.311	0.075	0.449	0.456	0.578	Survey	3
	0.334	0.320	0.345	0.449	0.453	0.782		
2 or 3	0.374	0.379	0.717	0.357	0.344	0.259	Survey	3
	0.374	0.376	0.894	0.357	0.346	0.423		
4 or more	0.240	0.249	0.397	0.134	0.134	0.951	Survey	3
	0.239	0.245	0.683	0.134	0.134	0.994		
Missing	0.053	0.061	0.214	0.060	0.067	0.251	Survey	3
	0.053	0.059	0.375	0.060	0.067	0.319		

Further information on the labor market history from 2001 to 2004

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
Number of employment spells in 2004	0.306	0.310	0.779	0.298	0.316	0.168	Admin	3
	0.305	0.302	0.827	0.298	0.324	0.089		
Number of employment spells in 2003	0.216	0.240	0.075	0.168	0.199	0.007	Admin	3
	0.216	0.229	0.417	0.168	0.200	0.014		
Number of employment spells in 2002	0.232	0.244	0.389	0.219	0.234	0.222	Admin	3
	0.232	0.237	0.754	0.219	0.232	0.351		
Number of employment spells in 2001	0.282	0.296	0.366	0.225	0.258	0.011	Admin	3
	0.282	0.287	0.779	0.225	0.256	0.033		
Number of half-months seeking for a job while employed in 2004	0.467	0.479	0.831	0.442	0.517	0.182	Admin	3
	0.467	0.451	0.809	0.442	0.490	0.438		
Number of half-months seeking for a job while employed in 2003	0.263	0.268	0.895	0.260	0.310	0.222	Admin	3
	0.263	0.254	0.845	0.260	0.303	0.343		
Number of half-months seeking for a job while employed in 2002	0.199	0.209	0.795	0.188	0.173	0.634	Admin	3
	0.199	0.207	0.848	0.188	0.176	0.743		
Number of half-months seeking for a job while employed in 2001	0.143	0.151	0.820	0.169	0.147	0.472	Admin	3
	0.143	0.155	0.761	0.169	0.153	0.635		
Number of half-months in a program in 2004	1.818	1.756	0.594	1.551	1.278	0.006	Admin	3
	1.813	1.733	0.560	1.551	1.359	0.101		
Number of half-months in a program in 2003	1.411	1.401	0.927	1.132	1.074	0.545	Admin	3
	1.413	1.443	0.815	1.132	1.161	0.792		
Number of half-months in a program in 2002	1.459	1.529	0.562	1.387	1.188	0.055	Admin	3
	1.460	1.584	0.369	1.387	1.281	0.382		
Number of half-months in a program in 2001	1.527	1.507	0.867	1.394	1.150	0.018	Admin	3
	1.528	1.549	0.882	1.394	1.241	0.208		
Number of half-months out of labor force in 2004	2.995	3.656	0.000	4.589	5.970	0.000	Admin	3
	2.998	3.213	0.295	4.589	4.850	0.272		
Number of half-months out of labor force in 2003	3.810	4.626	0.000	5.707	6.901	0.000	Admin	3
	3.814	4.017	0.386	5.707	5.675	0.899		
Number of half-months out of labor force in 2002	4.641	5.372	0.001	6.473	7.468	0.000	Admin	3
	4.645	4.700	0.833	6.473	6.394	0.771		
Number of half-months out of labor force in 2001	5.609	6.125	0.037	7.184	8.138	0.000	Admin	3
	5.615	5.487	0.647	7.184	7.185	0.995		

Appendix 3: Means of variables included in the propensity score specification before (first row) and after (second row) matching

	Men			Women			Data source	Propensity score specification
	Treated	Controls	p-value	Treated	Controls	p-value		
Observations before matching	2066	4194		2423	4603			
Observations of the matched sample	2064	4194		2423	4603			

Remarks: Treated are those individuals who are registered at decentralized welfare agencies, whereas the controls are registered at centralized welfare agencies. The p-values derive from t-tests on equality of means of the displayed variables for treated and controls before (first row) and after (second row) matching. Due to the common support restriction, 2 treated individuals in the subsample of men had to be excluded from the matching analysis. Variables marked by 1 in the final column of the table are included in the preferred specification of the propensity score as well as in the sensitivity analyses. Variables indicated by 2 are used for the propensity score specifications in the sensitivity analyses with additional regional variables. Variables marked by 3 are only included in the propensity score specification in the sensitivity analysis with all covariates.

Appendix 4: Propensity score estimation

	Men	Women
Age (reference: 25 to 34 years)		
18 to 24 years	0.0433**	-0.0017
	(0.0220)	(0.0199)
35 to 44 years	0.0551***	0.0042
	(0.0205)	(0.0188)
45 to 57 years	0.0527***	0.0166
	(0.0184)	(0.0199)
Schooling (reference: secondary general school)		
Intermediate secondary school	0.0376**	0.0147
	(0.0171)	(0.0184)
University entrance diploma	0.0642***	0.0440
	(0.0200)	(0.0301)
Other or missing	-0.0164	-0.0458*
	(0.0231)	(0.0239)
Migration background (reference: non-migrants)		
Migrant	0.0025	0.0334
	(0.0241)	(0.0262)
Household size (reference: 2 persons)		
1 person	-0.0239	-0.0024
	(0.0175)	(0.0198)
3 or more persons	-0.0281	0.0058
	(0.0267)	(0.0184)
Number of children (reference: 1 child)		
No children	-0.0270	-0.0224
	(0.0266)	(0.0188)
2 or more children	0.0341	-0.0149
	(0.0227)	(0.0181)
Obstacles to employment		
Disabled	0.0539***	0.0416
	(0.0179)	(0.0261)
Care obligation	0.0360	0.0184
	(0.0457)	(0.0322)
Status before welfare receipt		
(Minor) employment	-0.0254*	0.0101
	(0.0151)	(0.0116)
Labor market history from 2001 to 2004		
Number of half-months unemployed in 2004	-0.0016*	-0.0007
	(0.0009)	(0.0011)
Number of half-months unemployed in 2003	-0.0009	0.0013
	(0.0009)	(0.0010)
Number of half-months unemployed in 2002	0.0003	-0.0008
	(0.0009)	(0.0012)
Number of half-months unemployed in 2001	-0.0002	0.0005
	(0.0009)	(0.0010)
Number of half-months out of labor force from 2001 to 2004	-0.0008**	-0.0006*
	(0.0004)	(0.0003)
Mean duration out of labor force from 2003 to	-0.0009	-0.0007

Appendix 4: Propensity score estimation

	Men	Women
2004 in half-months	(0.0008)	(0.0006)
Number of programs from 2003 to 2004	-0.0238	-0.0074
	(0.0157)	(0.0184)
Mean duration of programs from 2003 to 2004 in half-months	0.0003	0.0009
	(0.0013)	(0.0013)
Current welfare spell		
Months in welfare before 10/2006	0.0006	0.0000
	(0.0012)	(0.0012)
Start after 10/2006 or missing	0.0278	0.0208
	(0.0247)	(0.0266)
Regional information		
Unemployment ratio (high)	0.0151	0.0427
	(0.0973)	(0.1001)
Urban district	-0.2127**	-0.2236**
	(0.0861)	(0.0872)
Observations	6,260	7,026
McFadden-R^2	0.047	0.046
Log-Likelihood	-3783.36	-4318.83

Remarks: Displayed are marginal effects and standard errors in brackets. *** denotes $p<0.01$, ** denotes $p<0.05$ and * denotes $p<0.1$.