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**Creating Employment or Keeping them Busy?
An Evaluation of Training Programs for Older Workers
in Germany**

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Abstract

We analyze the effect of participation in short-term training measures on older German recipients of means-tested unemployment benefits. Our analysis uses administrative data of the German Federal Employment Agency and we estimate the effects of participating in two types of short-term training - classroom and in-firm training - on different outcomes of the participants. Our results show that classroom training is not effective in making participants independent of benefit receipt. It has a moderately positive effect on employment outcomes, which are highest for West German men. In contrast, in-firm training significantly raises the participants' likelihood of finding regular jobs and of being independent of unemployment benefit receipt.*

Key words: training measures, older workers, propensity score matching, welfare benefit recipients.

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1. Introduction

Although there has been a significant increase in the labor force participation of older workers in the last decade, early labor market exit and unemployment among older workers are still important issues in Germany (OECD, 2008). While the average unemployment rate for older workers in the OECD area is four percent, the unemployment rate for individuals aged 55 to 64 in Germany is close to 12 percent (OECD, 2008). Moreover, the size of the older population relative to the size of the economically active population is rising. This implies major sustainability problems for the social security system. Thus, raising labor force participation of older workers is a major policy goal in Germany: first, by delaying the retirement age; and second, by designing adequate labor market policies that assist unemployed older workers in taking up jobs.

Recent reforms in Germany have aimed at implementing and improving labor market policies that bring people into work. These policies are not only concerned with dislocated unemployed workers. Unemployment or welfare benefit recipients, some of whom might have withdrawn from the labor market, have also become obliged to search for jobs and receive support from public employment service labor market policies. This mutual obligation regime aims at reducing their benefit dependency by taking up a job. There are both specific policies for older workers, such as wage subsidies for people aged at least 50 years, and policies for all unemployed people to which older unemployed workers are also entitled.

A large number of studies have analyzed the impacts of different active labor market policies in Germany. Yet often little is known about their impact on unemployed people aged 50 years or older. This study analyzes the impact of short-term training measures on the labor market performance of older participants. This scheme is one of the most intensively used programs for older workers. Our analysis uses administrative data and estimates the program impact by propensity score matching. It not only looks at whether the program is effective for all older unemployed workers but whether it is particularly effective for specific groups of them, like people with or without professional qualification, people who have been jobless for many years or who live in regions with high versus low unemployment. We carry out the analysis for job-seekers who are not entitled to unemployment insurance (UI) benefit but to the means-tested unemployment benefit II (UB II). The time-limited and earnings-related UI benefit is provided to workers who have recently lost their job and have contributed to unemployment insurance for a sufficient length of time. UB II, on the other hand, is a flat-rate welfare benefit with no time limits that is provided to people who are not eligible for UI and live in low-income households. This benefit was introduced in January 2005 as part of a reform that aimed at activating means-tested benefit recipients by a mutual obligation regime.

2. Demographic and institutional context

2.1 Demographic evolution in Germany and its fiscal implications

In most OECD countries, life expectancy is rising rapidly while birth rates decline, causing fiscal sustainability problems. Germany is no exception. Its Federal Statistical Office (Statistisches Bundesamt) estimated that by 2050, 40 percent (ten percentage points more than at current) of the working-age population will be 50 to 64 years old (Statistisches Bundesamt, 2006). By 2050, there will be about 55 people aged at least 65 years per 100 people of working age (20 to 64 years), i.e., twice as many as in 2005. Raising the retirement age to 67 years would only make a minimal difference, as we can see in Figure 1 where the number of people aged at least 65 years (and 67 years) per 100 people aged 20 to 64 (and 20 to 66) is plotted.

Without changes in income support schemes and labor force participation by older workers, population aging implies a major increase in public expenditure and other types of spending, e.g., on long-term care. Gruber & Wise (2001) analyzed current expenditure on the elderly by several OECD countries and projected a rise of such spending from 11.1 percent of GDP in 1995 to 15.1 percent in 2050 for Germany. Against this background, labor force participation of older workers is of great relevance.

2.2 The present situation of older workers in Germany

Despite a significant increase in the labor force participation of older workers from 40 percent to 58 percent since 1994 (OECD, 2008), early labor market exit and unemployment rates for older workers are still important issues in Germany.¹ Participation rates decline abruptly after the age of 60 years when the participation rates for men are close to 50 percent and those of women close to 30 percent, dropping at age 63 to 25 percent for men and to 10 percent for women (OECD 2005).² For older people who remain active in the labor market, the incidence of unemployment and of long-term unemployment is high.³ The OECD (2005) has estimated that 11.7 percent of the German working-age population are 'mobilisable labor resources'; two-thirds of this percentage is attributable to excess non-employment of older workers.

Quite a few studies have investigated the factors which affect the employment of older workers, all showing that the institutional context is of high relevance. On the labor supply side, the generosity of unemployment compensation and pension systems influence participation and employment decisions (Schmidt 1995; Riphahn &

¹ These statistics refer to individuals aged 55 to 64.

² These statistics refer to the year 2003. As pointed out above participation rates of older workers have been improving since then.

³ The standardized unemployment rate of older workers aged 55 to 64 years was about 12 percent in 2005 and hence three times the level for all OECD countries (OECD 2008, p. 339 and 341).

Schmidt 1997; Eichhorst et al. 2004). On the labor demand side, companies have to deal with relatively non-transparent age-specific regulations (Pfarr et al. 2005; Brunsig et al. 2006; RWI/ISG 2005). Wage rigidity and increasing age-earnings profile have also been identified as a possible determinant of low employment rates of older workers in Germany.

2.3 Passive and active labor market policies for older workers

Most of the recent German labor market policy reforms were proposed by the “Hartz Commission” in 2002. There are three reform clusters proposed by this Commission (Kemmerling & Bruttel, 2005): 1) reforms that introduced New Public Management ideas for the Public Employment Service (PES) (Bundesagentur für Arbeit), 2) reforms of the unemployment benefit system, and 3) of active labor market policy.

The unemployment benefit system has become less generous in recent years. Let us first turn to the unemployment insurance (UI) benefit, which amounts to 67 percent of the last net wage for parents and 60 percent for childless people. Its duration depends on the contribution record prior to the benefit claim and age. In February 2006 the maximum UI entitlement length was cut. Prior to the reform it was 18 to 26 months for those aged 45 to 54 years and 26 to 36 months for those aged at least 55 years. After the reform it was only 12 months for the former and 18 months for the latter. At the start of 2008 entitlement lengths were again raised to 15 months for 50 to 54 year olds and to 24 months for those over 57, but they are still much shorter than prior to the reforms.

Before 2005, unemployed people who exhausted UI or were not eligible for UI could receive means-tested unemployment assistance (UA) benefit. Its level depended on former earnings with replacement rates of 57 percent for parents and 53 percent for childless people. For people with no contribution period there was means-tested social assistance, a flat rate benefit. In 2005 both benefits were merged to the new means-tested “Unemployment Benefit II” (UB II) under the law on basic income support for job-seekers (Social Code II). This new welfare benefit is virtually independent of former earnings and usually lower than UA.⁴ Statistics of the Federal Employment Agency show that about 50 percent of the 1.2 million unemployed people aged at least 50 years received UB II. In 2008 the corresponding numbers were 60 percent and 900,000; thus the share of UB II recipients rose.

A related reform in December 2007 abolished the “58er-Regelung” (Article 428 Social Code III), an incentive for early labor market exit: Benefit recipients aged at least 58 years could indicate to the PES that they would retire as early as possible. In

⁴ The OECD computed changes in net earnings replacement rates from 2001 to 2005 for unemployed people in different countries in the 60th month of benefit receipt (OECD 2007: p. 172). Germany is one of the countries with quite high reductions of net replacement rates. They were particularly high for two-earner married couples: With 67% of the average wage, the reduction is about 10 to 11 percentage points; with 150% of the average wage the corresponding numbers are 26 to 27 percentage points.

turn, they were neither registered as unemployed, nor available for suitable jobs nor subject to benefit sanctions.

As to active labor market policies, since the reform a large number of programs have been available to improve the employability of older workers and to integrate unemployed people into the labor market. These include temporary wage subsidies paid to regular employers or to unemployed people who take up a job, traditional public works, different training programs, assignment to private placement services as well as subsidies for start-ups. Some of these schemes are specifically designed for older unemployed workers.⁵ The number of participants in these programs varies considerably. In terms of program inflow, short-term training and work opportunities are of major importance.

Work opportunities (Article 16d Social Code II) were introduced in 2005. They deserve attention as an example of a policy that was designed to raise employability, but which very quickly became an alternative to unemployment prior to retirement for older workers. Only UB II recipients are eligible for work opportunities (Arbeitsgelegenheiten mit Mehraufwandsentschädigung). They aim to target people who are very hard to place. Participants receive on top of their benefits one to two Euros per hour worked to cover additional costs of working, e.g., for traveling to work and higher expenses for meals.⁶ Work opportunities may not compete with regular jobs and must be in the public interest. Hence they are supposed to be mainly jobs in non-profit organizations. Younger people participate for no longer than a year and usually six months or less (Hohmeyer et al., 2006). However, UB II recipients aged at least 58 years were allowed between July 2005 and December 2006 to participate in work opportunities that lasted up to three years (Bundesministerium für Arbeit und Soziales, 2005). It offered older workers an alternative to unemployment and was at the same time a pre-retirement step.

Of the active labor market measures introduced with the reform, some were designed to increase the reemployment chances of older workers. Others, though, like work opportunities and public works, offer an alternative to unemployment before retirement. Our main interest is in short-term training, which we discuss in detail in the next section.

⁵ For details of policies for older workers see Eichhorst & Sproß (2005).

⁶ There are also work opportunities with a regular wage. In terms of number of participants they are of minor importance.

3. Description of the short-term training program

In this study we look at the impact of participation in short-term training (Articles 48 to 52 Social Code III) that aims at integrating unemployed people into jobs.⁷ In terms of inflow, short training measures and work opportunities are among the most important schemes for older UB II recipients. According to information from the Statistics Department of the Federal Employment Agency in 2005, there were over 30,000 training participants in the age-group 50 to 57 years and 1,400 were aged 58 to 64 years.⁸ The corresponding numbers for work opportunities are 100,000 and 15,000.

Short-term training participation can help to improve specific knowledge (e.g., language and software courses). It can also raise job search effectiveness with courses on writing applications and on job interviews (Jozwiak & Wolff, 2007). Finally, training measures are a scheme to test willingness to work and the flexibility of the unemployed persons. Training is usually carried out in a group but there are also individual program in the form of internships in a firm.

Training participation can last from a few days to up to eight weeks. Participants are entitled to their unemployment benefit and costs related to the training are covered. It is unlikely that participants reduce their job search efforts which would negatively affect their re-employment chances both during and shortly after the potential participation period, so, we expect no lock-in effects, i.e., a reduction of job search effort while participating in the programs.⁹

There are some studies which estimate treatment effects of short-term training on participants in Germany mainly using administrative micro data. They focus on participants and comparable unemployed people for different periods between the years 2000 and 2005 and mainly estimate effects on employment or unemployment outcomes either by the multivariate duration framework¹⁰ of Abbring and van den

⁷ A reform in 2009 (Gesetz zur Neuausrichtung der arbeitsmarktpolitischen Instrumente) raised the degree of flexibility of case-workers of the PES by specifying policy goals rather than policy contents in the Social Code III. Some policies like short-term training are no longer regulated in detail, but can still be implemented.

⁸ The data excludes 69 districts, in which local authorities do not cooperate with the Federal Employment Agency when administering unemployment benefit II. No systematic information on active labor market program participation in these districts is available for the first years after introducing the new benefit.

⁹ Lock-in effects are more of an issue when program participation is long and is associated with an income that is considerably higher than the unemployment benefit. A standard example are subsidized job creation schemes/public works for unemployed workers, where they work full-time in a subsidized job of public interest and receive a regular wage. Then they are left with less time and lower incentives to search for a job than while they are unemployed.

¹⁰ This framework takes into account that program participation is not random but depends on observable and unobservable factors, which both might affect an outcome of interest. It jointly models by means of a mixed proportional hazards model an individual's time since the start of unemployment until program participation and the time since start of unemployment until exit into some state of interest (outcome equation), e.g., into a job, conditional on observable covariates and error terms that are allowed to be correlated over the two processes. The effect of program participation on the exit

Berg (2003) or by propensity score matching to which we turn in section 4.2. The former applies to Hujer et al. (2006) and the latter to Stephan et al. (2006), Biewen et al. (2007) and Jozwiak & Wolff (2007).

Most of these studies find a moderate improvement in the labor market performance of participants as a result of short-term training. When distinguishing between classroom and in-firm training, the results sometimes point to high treatment effects for the latter as opposed to the former program. Jozwiak & Wolff (2007), for example, find for participants who received UB II that in-firm training raised their chances of working in regular jobs by about 13 to 20 percentage points 20 months after the start of the training program; for classroom training this impact is only one to three percentage points.

The above mentioned studies mainly exclude older age-groups, like Hujer et al. (2006) who excluded those aged above 55 years or Biewen et al. (2007) who excluded those aged above 53 years from their analysis. In contrast to them, we analyse treatment effects of short-term training for specific groups of older workers.

4. Empirical analysis

4.1 Data description

Our analysis uses several administrative micro data sets from the German Federal Employment Agency. The “Integrated Employment Biographies” (IEB) contain spells of employment, unemployment, unemployment benefit receipt and active labor market program participation, where duration is measured in days. Next, we use a job-seeker data base and information from the unemployment benefit II histories. The latter contains spells of unemployment benefit II receipt together with a household identifier. With this unique number for each household of welfare recipients, we can identify the partner of a sample member and can control for partner information. Employment information in the IEB is available with a considerable time lag. Therefore we use the more recent employment information of an additional data base (*Verbleibsnachweise*) of the Statistics Department of the Federal Employment Agency.

We selected a sample that contains all unemployed people who receive UB II and are aged 50 to 62 years at the end of August 2005. All sample members who started a short-term training participation from September to November 2005 are our treatment group. All other sample members are the potential control group. From the latter we draw adequate comparison persons for the treated. To estimate effects of training participation, we need to compare the participants’ outcomes in different

rate from unemployment into a job is captured by the parameter of a time-varying dummy variable that is zero before participation and one after program participation started in the outcome equation. In contrast to matching estimators the mixed proportional hazards model takes unobservable factors into account but relies on functional form assumptions of an outcome equation.

months after training started with the corresponding outcomes of comparison persons in the same months after training start. As the latter group did not, however, start any short-term training during the months September to November 2005, these same months after training start are not defined. Therefore, we randomly chose a training start month for them. It is a random draw from the distribution of the three training start months of the participant group. We excluded control persons from our data, who between the end of August 2005 and first day of the program start month, found regular jobs, were not unemployed or did not receive the UB II, so that the remaining control persons could still potentially enter short-term training in the potential program start month.

Table 1 displays our sample sizes. For classroom training, we distinguish between men and women in East and West Germany. For these four groups the number of treated persons ranges from about 1,400 to 1,900 cases; these sample sizes are large enough to estimate treatment effects for additional subgroups: Germans only, people with and without professional skills, singles vs. couples, people who lost their last regular job within the last 44 months and people who lost it earlier. Finally, we distinguish between high and low unemployment districts, where the threshold unemployment rate is 21 percent for East and 13 percent for West Germany. From our results on classroom training we can conclude whether treatment is more effective for specific groups of people. This could have important policy implications: One implication would be to direct the programs more frequently to those groups of older workers whose success in the labor market improves due to participating in one of the training programs. The opposite would hold for those groups of older worker where we find the policy to be ineffective.

In the case of in-firm training, our data contains only about 400 cases for East and roughly 600 for West Germany so we estimate treatment effects for this type of training separately only for these two regions.

4.2 Methodology

In our first step, we analyze which characteristics of the older workers drive participation in the program by estimating probit models of the probability of entering a short-term training program between September and November of the year 2005.

In the second step, we estimate treatment effects of short-term training participation on employment and benefit related outcomes by a matching approach. The basic idea is to find a group of non-participants who are similar to the participants in all relevant pre-program characteristics and then calculate the difference between their outcomes (Hujer & Caliendo 2000). This approach controls for selection on observables, X . Thus differences between the outcomes of the treated and the matched controls are not due to differences in observed characteristics that affect outcomes.

We are interested in the average treatment effect on the treated (ATT), i.e., the average effect of program participation on an outcome of the participants, as shown in equation one:

$$\tau_{ATT} = E(\tau|D=1) = E[Y(1)|D=1] - E[Y(0)|D=1] \quad (1)$$

$Y(1)$ represents the outcome with treatment and $Y(0)$ without treatment. $D=1$ and $D=0$ indicates whether a person belongs to the treatment or the control group. The ATT is the difference between the expected outcome of the treated given that they are treated ($E[Y(1)|D=1]$) and the expected outcome of the treated if they had not been treated ($E[Y(0)|D=1]$). Since the latter is unobservable, the effect can only be estimated if a suitable control group is considered. If this is the case, $E[Y(0)|D=0]$ is a consistent estimator of $E[Y(0)|D=1]$. With exact matching for each treated person, one or more controls are selected from a potential control group that is such that they do not differ with respect to pre-treatment observables X . If the vector X is of high dimension it is hardly possible to implement exact matching. Rosenbaum & Rubin (1983, 1984, and 1985) propose an alternative matching mechanism based on a propensity score $p(X)$. A propensity score is a one-dimensional function of the pre-treatment covariates. We use propensity score matching and our propensity score is the predicted probability of participating in short-term training based on our probit analysis of the determinants of participation.

An important assumption in the propensity score matching approach is the Conditional Independence Assumption (CIA). According to the CIA, outcomes in case of treatment or non-treatment are independent of the assignment to treatment given the propensity score. We need only the weak version of this assumption on the outcome without treatment:

$$Y(0) \perp D \mid p(X) \quad (2)$$

For the CIA to hold, it is important to control in the participation equation for the relevant factors that determine both participation and outcomes. We control for socio-demographic characteristics, district level indicators on the situation of the labor market, detailed information on past periods of employment, unemployment and active labor market program participation. In particular detailed past labor market outcomes should make it likely that the CIA holds.

Under the CIA, the average treatment effect on the treated (ATT) or net effect of training participation on the outcome Y of training participants in our context can be defined as:

$$\begin{aligned} \tau_{ATT} &= E\{E[Y(1) - Y(0)|D=1, p(X)]\} \\ &= E\{E[Y(1)|D=1, p(X)] - E[Y(0)|D=0, p(X)]|D=1\} \end{aligned} \quad (3)$$

As short-term training is intended to bring participants into jobs and thus reduce their benefit dependency, we consider two outcomes: (1) unsubsidized contributory (regular) employment, and (2) receiving no UB II. We regard them as binary outcomes at different points in time after the start of the program. Hence, we estimate an impact on the share of treated who are in regular jobs or who receive no UB II.

Moreover, we estimate impacts on the number of months in each of the two states during a given time window after the start of the training program. We apply nearest neighbor matching with five neighbors and replacement. I.e., for each treated person five control persons are chosen by propensity score matching and specific control persons can be matched to various treated persons.

4.3 Participation structure

In order to analyze determinants of participation and to implement the propensity score matching approach, we estimate probit models of short-term training participation and predict the propensity score for each of the groups mentioned in section 4.1.

From the probit analysis it can be concluded that individuals in the younger age group (aged 50 to 57) are more likely to participate in both in-firm and classroom training. As already discussed in a previous section, this is due to the labor market exit possibilities of the older individuals (aged 58 until 64). We also observe that higher education has a positive effect on the in-firm training participation probability, especially for West Germans. The higher the level of education, the higher is the participation probability. Past training program participation is another important determinant: people who already participated in a training program in the last five years are more likely to participate in classroom training. Unemployment history and a partner's unemployment history also drive in-firm training participation. While own past long term unemployment experience negatively affects the probability of in-firm training participation, past long term unemployment experience of the partner increases the probability of participation. Finally, regional factors (especially unemployment rates and the proportion of long-term unemployed) are very important determinants of training participation.¹¹

4.4 Estimated effects of participating in short-term training on the participants' performance

Figures 2 and 3 show the estimated classroom training treatment effects on the share of participants in regular employment and on the share of participants without any receipt of UB II.¹² The effects are plotted against time since program start. The employment effects (Figure 2) tend to be positive. For men in East Germany and

¹¹ We do not display the probit results here for spatial reasons; they are available on request.

¹² We have carried out various analyses to check the quality of our propensity score matching procedure for each of the samples that we analyzed. The results imply a high match quality in terms of nearly no differences in observed characteristics between treated and matched controls. A summary statistic on this latter issue, the mean standardized absolute bias, reaches, with few exceptions, levels below two percent. There is no critical value for this statistic. However, Caliendo and Kopeinig (2008) mention that in most matching studies a value below three to five percent is regarded as successful. The results on match quality are available on request.

women after about three months, they are usually at around one percentage point. Yet they are mostly insignificant at a five percent level with the exception of the effects in the first three to eight months for East German women. For West German men they are somewhat higher, well determined and reach a level of more than two percentage points 12 months after the start of training. The positive effect of classroom training participation for West German men might reflect their general better opportunities in the labor market. Both the total unemployment rate and the one for older workers in West Germany are far lower than in East Germany. In comparison to West German women, men have on average a higher level of education, and a better employment history. In West Germany training participation might help to improve employment opportunities for men, who are the ones who have better chances in the labor market. For the other groups, however, even if training improves their skills, their employment opportunities are so restricted that no positive effect is found.

Table 2 shows that 21 months after program start, the employment rate of the matched controls, i.e., without treatment, is between 3.8 percent (East German women) and 7.8 percent (West German men). Hence, a treatment effect of about one to two percentage points might be low at first sight. But it implies a considerable increase in the employment rate. Figure 3, though, demonstrates that the effects of classroom training on avoiding UB II receipt are usually close to zero and insignificant. For East German males they are even negative and partly well-determined.

The treatment effects for in-firm training as displayed in Figures 4 and 5 for East and West Germans are clearly much higher than the classroom training effects. Already in the first two to three months after entering the program, there is a high impact of more than 10 and later even more than 16 percentage points on the employment rate of in-firm training participants (Figure 4). The estimated effect on the rate of no UB II receipt (Figure 5) is similar to the employment effects for West Germans and usually somewhat lower than the employment effects for East Germans. As East German wages are lower than those in West Germany, employment take-up less often implies that a person's household is no longer in need of welfare benefit support.

Table 3 displays the estimated employment effects of classroom training for several subgroups, as described in Section 4.1. It displays both an effect on the employment rate (as in Figures 2 and 4) and the effect on the number of months in regular employment during the first 21 months after program commencement. Similar to the results shown in Figure 2, we of course observe that for West German males in particular, there are considerable and well-determined effects of classroom training. There is little variation of the effect over the different subgroups of West German men: The impact ranges from 2.8 percentage points (treated with no professional training or with their last job ending more than 44 months ago) to 4.4 percentage points (treated with partner/couple). The estimated effect on the number of months of regular employment ranges from 0.2 to 0.5 months.

For East German men and women the estimated effects on the employment rate of the subgroups are nearly always statistically insignificant. We find some well-determined impacts on the number of months employed during the first 21 months after entering the program. For the entire sample of East German men and East German women as well as for East Germans with any professional qualification and East Germans living in a district with a low unemployment rate we find that due to their training participation they are employed for an additional 0.2 to 0.3 months in unsubsidized jobs during a 21 month period after the start of the training. For West German women we find well-determined positive impacts ranging from 0.2 to 0.4 months of additional employment for participants of German nationality, single participants whose job ended within the last 44 months and participants in high unemployment regions. We also estimated the impacts on the outcome no UB II receipt for the subgroups, where we find significant impacts that are usually negative in only a few cases.¹³

There may be many potential reasons for the result that classroom training has positive impacts on the regular employment rate of participants but usually does not reduce their rate of benefit dependency. One reason is that the earnings of classroom training participants in accepted jobs are in some cases not sufficiently high to end the welfare benefit receipt of their household. An additional explanation is that without training, some older welfare benefit recipients would have become discouraged. As a consequence, they would have more often considered other routes out of welfare receipt like early retirement and the related pension income or moving to a household of relatives with sufficient means of income.

5. Summary and conclusions

The unemployment rate of older workers in Germany is considerably higher than the average unemployment rate of older workers in the OECD (OECD 2008). Furthermore, early labor market exit is still an important issue in the German labor market. Taking into account that the work force is aging dramatically, raising their participation rates has become an important goal of German labor market policy. In this way, Germany follows the agreed goal at the European level to keep an increasing number of older workers in gainful employment as long as possible (Europäische Kommission 2003). Since 2002, passive and active labor market measures have been introduced in order to activate the 'mobilisable labor resources' among which non-employed older workers play an important role.

In this paper we estimated the effect of short-term training measures on the labor market performance of unemployed welfare recipients aged 50 to 62 years who participated in such programs. The analysis contributes to the debate on which measures help to improve the re-employment chances of older workers. We distinguished between short-term classroom and in-firm training. We estimated their impact using

¹³ These latter results are available on request.

administrative data and applying methods of propensity score matching. Our study regarded impacts for more than 20 months after the participants' short-term training started.

For classroom training this analysis has been carried out separately for many different subgroups. When we look at the broad groups of men and women in East and West Germany, the estimated positive impact of classroom training on employment outcomes is only significant for West German men. Moreover, there are either insignificant or in the case of East German men, slightly negative impacts of classroom training participation on avoiding welfare benefit receipt. In contrast to classroom training, in-firm training affected all outcomes of the participants positively and the effects are far higher than for classroom training participants. Our results imply, therefore, that the short-term training program is to some degree an effective policy for integrating older unemployed workers in low-income households into regular jobs.

For East Germans the results on classroom training may be the consequence of a generally depressed labor market. The (registered) unemployment rate in East Germany ranged from 15 to about 19 percent in our observation period from 2005 to 2007 (Federal Employment Agency, 2009). It was about twice as high as the West German one. Due to high competition for vacancies in East Germany, a labor supply-side policy like short-term classroom training may be insufficient to improve the employment perspectives of participants.

The fact that in-firm training has particularly high beneficial impacts on participants in both regions is then no surprise, as such internships imply a direct contact to a firm, where the participants may continue working. The labor demand side profits by a probation period without wage cost, while participants on the supply side receive some training on-the-job. Our results on in-firm training point towards putting more effort in developing policies which support demand for older workers and bring unemployed older workers into a contact with potential employers.

In our analysis, we do not find much evidence that classroom training affects specific subgroups of older welfare benefit recipients more strongly than others. Thus, there is no strong evidence in favor of targeting specific groups of older workers. There is some evidence for a higher impact of classroom training for participants with a professional qualification in contrast to participants without such a qualification. Presumably, classroom training helps older workers with formal education to update their skills, and in turn to more easily find a job.

There are several limitations to our study. Firstly, the administrative data is not informative on some issues. We cannot observe some reasons for ending welfare benefit receipt, like starting the receipt of an early retirement pension or moving into a high-income household. Thus, we cannot make statements about the importance of such issues for our results. Moreover, there might be insufficient information on characteristics that determine success in the labor market and the probability of entering a training scheme. In turn the matching approach could fail to find comparable non-participants for the training participants; e.g., for in-firm training one might ex-

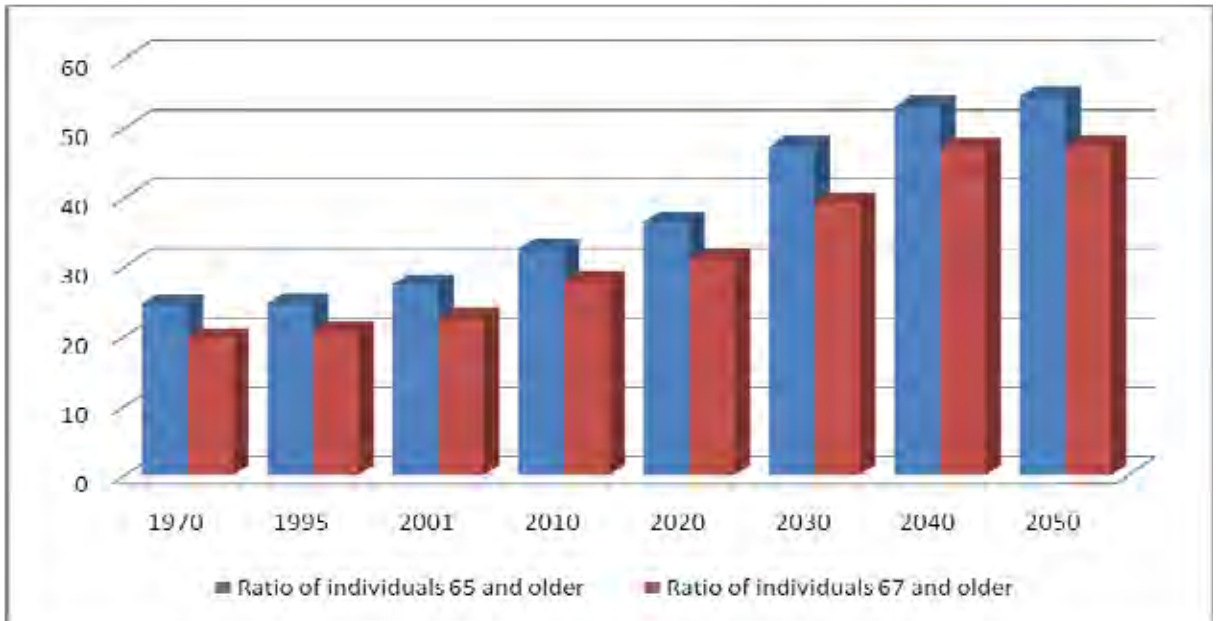
pect that firms frequently take on trainees with specific, hardly observable talents that enhance their success in the firm. If such talents have little relation to observable characteristics in our data, our estimated employment effects of in-firm training are likely to be upward biased. Secondly, firms might hire the same type of unemployed workers that they would have hired anyway, but take advantage of the in-firm training program as a prolonged probation period without wage cost. Then the estimated impact of in-firm training would be rather spurious. Thirdly, our results allow no statements about general equilibrium and macroeconomic effects.

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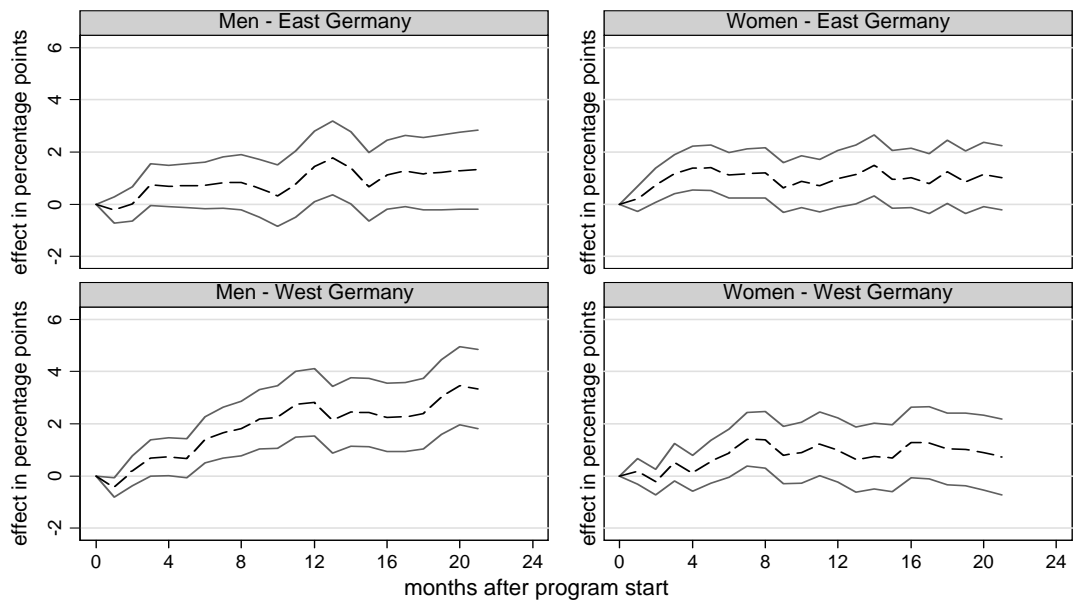
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Figure 1: Ratio of individuals aged at least 65 years (and 67 years) per 100 individuals aged 20 to 64 (and 20 to 66).



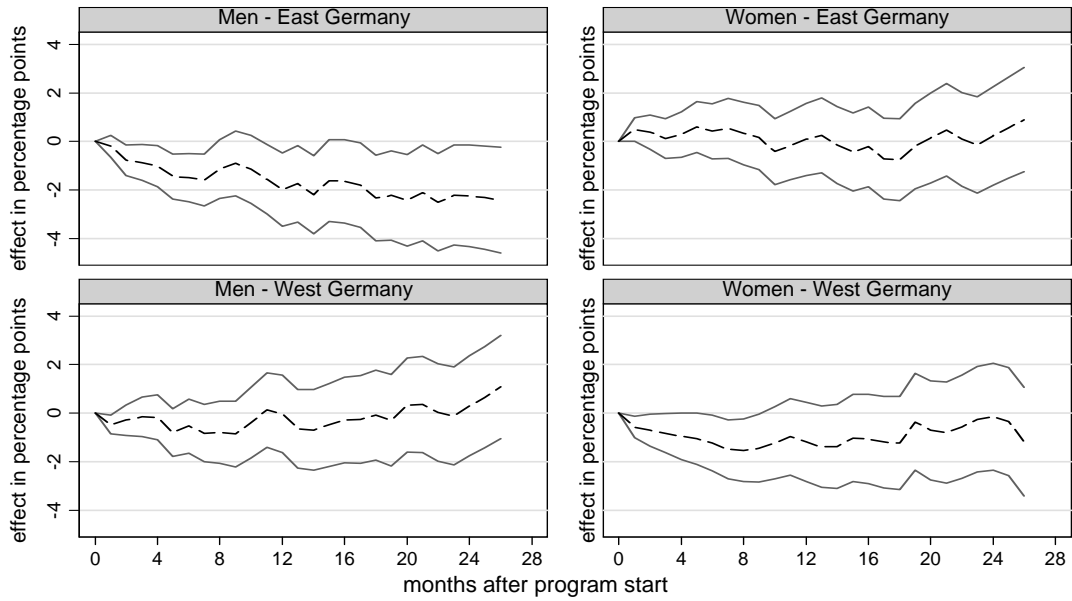
Source: Statistisches Bundesamt

Figure 2: Net effect of classroom training on the regular employment rate of participants¹⁾



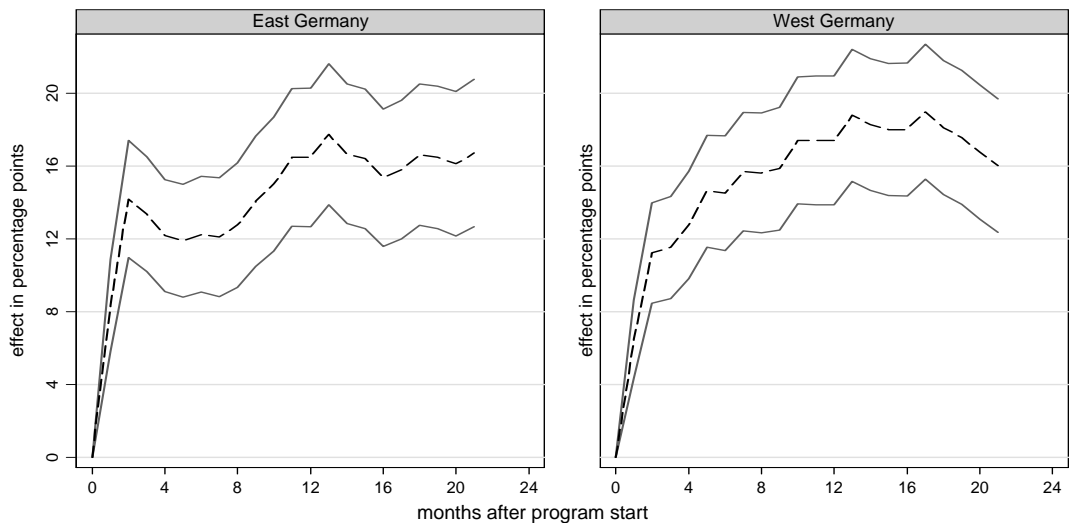
1) Treatment effects are displayed together with 95 % confidence bands, based on analytical standard errors.

Figure 3: Net effect of classroom training on the rate of no UB II receipt of participants¹⁾



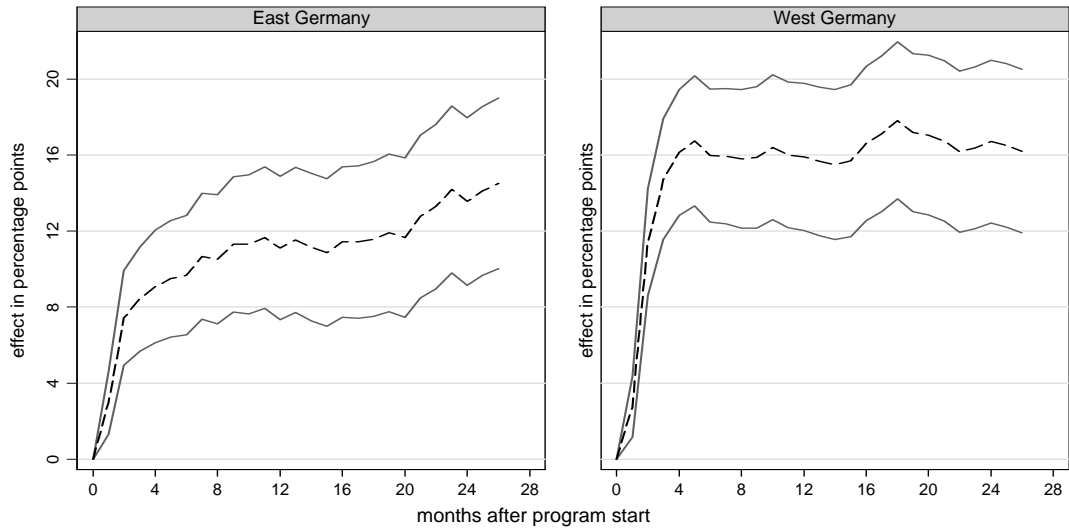
1) Treatment effects are displayed together with 95 % confidence bands, based on analytical standard errors.

Figure 4: Net effect of in-firm training on the regular employment rate of participants¹⁾



1) Treatment effects are displayed together with 95 % confidence bands, based on analytical standard errors.

Figure 5: Net effect of in-firm training on the rate of no UB II of participants¹⁾



1) Treatment effects are displayed together with 95 % confidence bands, based on analytical standard errors.

Table 1: Sample sizes

	East Germany				West Germany			
	Men		Women		Men		Women	
	Treated	Potential Controls	Treated	Potential Controls	Treated	Potential Controls	Treated	Potential Controls
Classroom Training								
Total sample	1.403	62.544	1.385	55.174	1.930	113.151	1.430	88.186
German nationality	1.327	58.648	1.332	51.444	1.578	89.342	1.213	65.806
Professional qualification								
none	263	15.231	338	16.694	878	57.102	796	58.182
any	1.140	47.313	1.047	38.480	1.052	56.049	634	30.004
Family status								
single	737	31.866	641	25.909	1.080	63.302	888	49.566
couple	666	30.678	744	29.265	850	49.849	542	38.620
Time since last regular job								
44 months or less	499	19.864	324	13.058	794	40.417	525	24.634
more than 44 months	903	42.607	1.061	42.079	1.133	72.652	905	63.505
Unemployment rate ¹⁾								
low	549	26.475	522	24.674	1.097	53.692	814	42.706
high	854	36.069	863	30.500	833	59.459	616	45.480
In-Firm Training								
	East Germany		West Germany		East Germany		West Germany	
	Treated	Potential Controls	Treated	Potential Controls	Treated	Potential Controls	Treated	Potential Controls
Total sample	507	117.718	596	201.337				

1) District unemployment rate in August 2005; low East G. <21%, low West G. < 13%, high East G. >=21%, high West G. >=13%

Table 2: Outcomes for matched treated, matched controls and all controls at the end of the observation window¹⁾

	East Germany				West Germany			
	Men		Women		Men		Women	
	Share in percent	Number of months ²⁾	Share in percent	Number of months ²⁾	Share in percent	Number of months ²⁾	Share in percent	Number of months ²⁾
Classroom Training								
Regular employment								
matched treated	7.5	0.9	4.8	0.7	11.0	1.3	7.0	0.9
matched controls	6.2	0.7	3.8	0.5	7.8	0.9	6.3	0.7
No receipt of UB II								
matched treated	16.0	2.0	16.0	2.0	24.0	3.2	18.0	2.5
matched controls	19.0	2.4	15.0	2.0	23.0	3.3	20.0	2.7
In-Firm Training	East Germany		West Germany					
Regular employment								
matched treated	27.0	4.2	26.0	4.5				
matched controls	10.0	1.1	9.7	1.2				
No receipt of UB II								
matched treated	36.0	5.7	43.0	7.8				
matched controls	21.0	2.9	27.0	3.8				

1) 21 months after start of program for regular employment and 26 months after start of program for no UB II.

2) Average of the total number of months that sample members were in regular employment during 21 months after program start or received no UB II at all during 26 months after program start.

Table 3: Net effect on regular employment rate and months of regular employment 21 months after start of program

Month after programme start	East Germany				West Germany			
	Men Effect on		Women Effect on		Men Effect on		Women Effect on	
	Empl. rate in percentage points	months employed	Empl. rate in percentage points	months employed	Empl. rate in percentage points	months employed	Empl. rate in percentage points	months employed
Classroom Training								
Total sample	1.3	0.2 *	1.0	0.2 **	3.3 ***	0.4 ***	0.7	0.2
German nationality	1.5	0.2 *	0.5	0.2 *	3.0 ***	0.3 ***	1.2	0.2 *
Professional qualification								
none	-2.1 *	-0.1	-0.6	0.0	3.0 **	0.2 *	0.1	0.1
any	2.3 *	0.3 **	1.4	0.3 **	2.8 **	0.5 ***	2.1	0.3
Family status								
single	1.7	0.1	0.1	0.1	2.9 **	0.4 ***	1.4	0.3 *
couple	1.0	0.1	1.2	0.2 *	4.4 ***	0.5 **	0.5	0.1
Time since last regular job								
44 months or less	0.4	0.2	2.9	0.4	4.0 **	0.5 **	3.1	0.4 *
more than 44 months	1.1	0.1	0.6	0.2 **	2.8 ***	0.3 ***	-0.1	0.1
Unemployment rate ¹⁾								
low	2.4	0.2	0.8	0.1	3.0 **	0.3 **	1.3	0.1
high	0.9	0.2 *	0.9	0.3 **	3.5 **	0.5 ***	1.1	0.3 *
In-Firm Training	East Germany		West Germany					
Total sample	17.0 ***	3.1 ***	16.0 ***	3.3 ***				

1) District unemployment rate in August 2005; low East G. <21%, low West G. < 13%, high East G. >=21%, high West G. >=13%

Results from nearest neighbour matching with five neighbours and replacement.

Significance levels: *** for 1 percent, ** for 5 percent,