Explaining the Employability Gap of Short-term and Long-term Unemployed Persons[*]

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June 4, 2008

Abstract

This paper analyzes the determinants of employability differences between short-term and long-term unemployed persons. Knowing these differences could help to address active labor market policy programs more adequately to the needs of the job-seekers in order to increase integration rates into employment. Based on merged survey and register data differences in job finding chances for these groups are decomposed into a part due to differences in attributes and a part due to differences in valuing the attributes. The estimates clarify that the current set of available active labor market programs leaves some important factors of employability unconsidered. Particularly, health conditions play a significant role for successful placement. Thus, policy makers should address this issue as an integral part of the placement process.

Keywords: unemployment, welfare, employability, job chances, Germany, decomposition
**JEL Classification:** I30, J60

1 Introduction

Reducing the risk of long-term unemployment is a central purpose of labor market policy in many countries. In particular European economies suffer from high and rising long-term unemployment rates. Figure 1 provides shares of long-term unemployment on total unemployment for a selection of OECD countries. It becomes obvious that Germany, Belgium, Italy, Poland and Portugal experience long-term unemployed shares of all unemployed of more than 50 percent (according to the definition of the ILO). In contrast, the situation in countries like Australia, Canada or the US is less severe; here, the shares are between 10 to 20 percent.

Figure 1: Shares of long-term unemployment on total unemployment in selected OECD countries (2006)
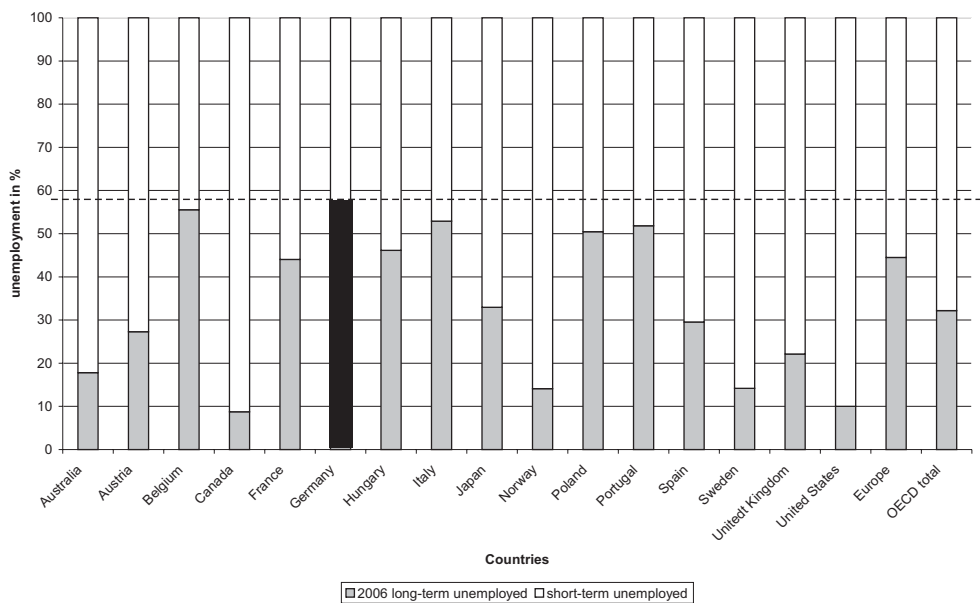
Hence, European countries provide a number of different active and activation labor market policy programs to reduce the risk of and the amount of long-term unemployment. These programs cover activities aiming at increasing the job search behavior, the human capital skills, or the work behavior of the unemployed for instance. However, the overviews by Martin and Grubb (2001) and Kluve (2006) clarify that many programs are not very successful reaching the intended goals. The ineffectiveness could be due to a number of reasons. For example, if people participate in a program they could be expected to reduce their job-search intensity during the program which counteracts the intended effects of any active labor market policy program, see e.g. van Ours (2004). Moreover, participation in programs could be interpreted as a negative signal by potential employers, i.e. a lower productivity of the job-seeker, particularly for persons in subsidized jobs in a non-competitive market, see e.g. Thomsen (2007). Another source could be an inefficient match of job-seekers to available programs. The main reasons for this are the behavior of the caseworker or the general lay-out of the placement process. Berger, Black, and Smith (2001) and Lechner and Smith (2007), e.g., show how the allocation of job-seekers into programs could be improved. However, those attempts

are based on ex post-evaluations of program impacts taking the set of available programs as given. But besides the three reasons already mentioned it may be the case that the available programs do not meet (or incompletely only) the needs of the unemployed. To give an example, if persons are in worse health conditions that hamper direct integration into the employment but employment officers do not recognize this or could not offer activities to improve the health situation, increasing the employability of the job-seeker could be hard or even impossible.

The aim of this paper is to analyze people's need by focusing on determinants of the employability of long-term unemployed persons. Based on unique survey data of almost 4,000 short-term and long-term unemployed persons merged with administrative sources for Germany, differences in the employability between short-term and long-term unemployed persons are studied in order to reveal the crucial factors of job-finding chances beyond unemployment duration. A stylized fact of labor economics is that person's employment chances differ by unemployment duration. However, unemployment duration may be only one factor besides others. Health conditions, qualification and motivation of the job-seekers may be important as well. Moreover, the value of the factors affecting employability may change over time. The data at hand include usually unavailable information of job-seekers covering, e.g., soft skills, concessions the job-seeker is willing to make for a new job, importance of peers, and self-assessed job finding chances. Given these rich data the employability gap of short-term and long-term unemployed is decomposed into explained and unexplained differences using the group of short-term unemployed as a reference group representing high employability. Whereas the technique of decomposition has a long tradition to analyze between-group differences dating back to the work of Oaxaca (1973) and Blinder (1973), this is the first application (as far as I know) to analyze employability differences with the focus on recommendations for the design of active labor market policy programs. Moreover, in order to study the employability gap between short-term and long-term unemployed persons one has to take account of the discrete nature of the outcome of interest, i.e. employment. This is done applying the recent extension of the Oaxaca-Blinder decomposition by Fairlie (2005). In addition, individuals may have a quite good idea about their job chances, i.e. even in the group of long-term unemployed there may be a sub-group with good job finding prospects that actually anticipates the situation. For that reason, I analyze the employability separately for persons reporting good and those reporting bad prospects.

Knowing about whether low employment probabilities are due to qualification, discrimination or other characteristics is crucial for designing labor market policy. For example, subsidized jobs whether in a competitive or non-competitive market are at least partly based on the belief that labor market disadvantages of long-term unemployed are due to employer discrimination ('low productivity signal') and that those jobs provide the necessary skills to become regularly employed. Job search assistance programs (counseling on increased search efforts and job search programs coinciding with benefit sanctioning) assume job-seekers to inefficiently look for jobs but already possessing the necessary human capital skills demanded by the market. Training programs, in contrast, are designed that unemployed and particularly long-term unemployed persons lack human capital skills and qualification necessary for non-subsidized employment. Although all underlying assumptions are relevant, in this paper their value for the chance of finding a job should be ana-

lyzed. Decomposing the employability gap between long-term and short-term unemployed persons allows to distinguish crucial factors from those of minor relevance only. Based on this results, recommendations for a more focused design of active labor market policies could be made.

The paper is organized as follows: In the next section, the definition of short-term and long-term unemployed persons in Germany is discussed. Section 3 provides the econometric methodology applied to the data to analyze the employability gap. Details of the unique data as well as descriptives for the groups in analysis are presented in section 4. The interpretation of the empirical estimates is given in section 5. The final section concludes.

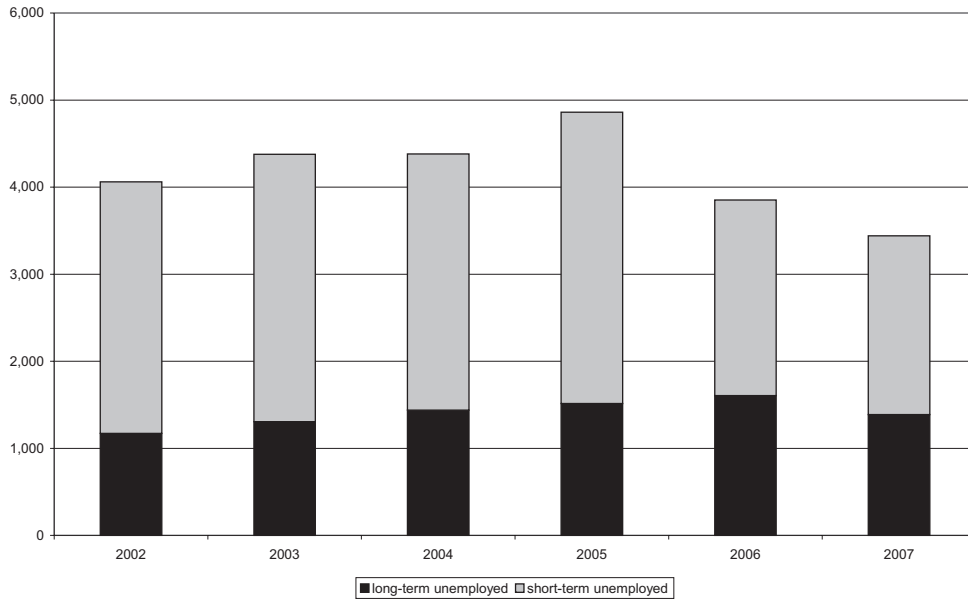## 2 Short-term and Long-term Unemployment in Germany

A central criterion distinguishing short-term and long-term unemployed persons in Germany is eligibility for unemployment benefits (*Arbeitslosengeld*) or welfare benefits (*Arbeitslosengeld II*). Eligibility for unemployment benefits is given if a person has been employed subject to social security contributions for at least six months. In case of unemployment, persons receive unemployment benefits for a limited period of at maximum 12 months (and 18 months for older workers) conditional on the duration of the preceding contribution period to unemployment insurance. Unemployment benefits amount to about 60 (67) percent (for people with dependent children) of the net income in the last month before unemployment paid from unemployment insurance.

In contrast, eligibility for welfare benefits is fulfilled if the person is able to work and has no claims for unemployment benefits. This is the case for example for self-employed who in general do not contribute to unemployment insurance, for persons who have not worked in the past as well as for persons whose unemployment benefit claims have expired. Provision of welfare benefits is means-tested, i.e. it depends on the capital and earnings of the individual. Payments are funded from taxes. Recipients of welfare recipients receive a lump-sum payment of 347 Euro (345 Euro until 2007) per month and maintenance allowances covering cost of lodging. Welfare benefits are, in general, paid on infinite time horizon until retirement age, but employment officers should force the recipients to get employed. If direct integration into employment is not possible, welfare benefit recipients could be assigned to various active labor market policy programs. The majority of these programs is available for short-term and long-term unemployed persons as well. To simplify matters, I will distinguish short-term and long-term unemployed persons throughout the paper bearing in mind the institutional set-up in Germany. In 2006 and 2007, according to the Federal Employment Office in Germany about 35 percent of the inflow into welfare benefits were recipients of unemployment benefits with expired benefit claims.

The share of long-term unemployed persons on all unemployed in Germany exceeded 50% in 2006 according to ILO-definition. Figure 2 provides the development of the ratio of short-term and long-term unemployment over the past few years.[1] Between 2002 and 2004 the ratio of short-term to

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[1]Since the Federal Employment Office uses a different definition of unemployment than ILO, the rates in Figure 2 differ from the result in Figure 1.

Figure 2: Development of unemployment and long-term unemployment in Germany (in thousands, 2002 to 2007)

long-term unemployment was almost 3:1 in Germany. Moreover, during that period an increase in the number of long-term unemployed persons could be observed from about 1.1 million to about 1.4 million persons. In 2005, the unemployment benefits' system was reformed and a new kind of means-tested welfare benefits was introduced replacing the former unemployment assistance and partly social assistance. Hence, this new kind of benefits comprises formerly non-eligible persons for unemployment assistance which explains the rise in total unemployment in that year. From 2005 onwards, the number of short-term unemployed persons decreased steadily. In contrast, the level of long-term unemployment rose again in 2006, but started to fall in 2007. However, given the significant reduction of the number of short-term unemployed, the decrease of the number of long-term unemployed is not as strong. Regarding the limited explanatory power of the descriptive figure in mind, this tends to indicate that there is still no adequate cure to the symptom long-term unemployment in Germany.

3 Methodology

To estimate the underlying causes for different employment probabilities of short- and long-term unemployed, it is reasonable to identify differences due to characteristics of the two groups (*endowments*) and differences due to different effects of the endowments (*coefficients*) separately. When outcomes of interest could be estimated by linear regression, a common approach is the decomposition of the effects in the average value of a dependent variable Y as suggested by Oaxaca (1973) and Blinder (1973) that could be expressed by

$$\bar{Y}^s - \bar{Y}^l = \left[(\bar{X}^s - \bar{X}^l)\hat{\beta}^s \right] + \left[\bar{X}^l(\hat{\beta}^s - \hat{\beta}^l) \right], \tag{1}$$

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where $\bar{Y}^s (\bar{Y}^l)$ is the average outcome for the short-term (long-term) unemployed. Let $\bar{X}^j$ be a row vector of the average values of the independent variables and $\hat{\beta}^j$ the vector of coefficient estimates for group j with $j \in \{s, l\}$ (with s denoting short-term unemployed and l denoting long-term unemployed persons in the case at hand). The first term on the right-hand side captures differences in the outcome due to characteristics, the second term are differences in coefficients capturing the 'price' of the characteristics. This term also includes the contribution of the difference in outcomes due to unobserved or unmeasurable endowments.

However, if the outcome of interest is binary, e.g. employment, and estimation of the outcome equations within each of the groups is based on a non-linear technique, e.g. probit or logit model, decomposing differences in means is not feasible. For that case, Fairlie (2005) suggests a decomposition technique that extends the Oaxaca-Blinder-technique to the discrete case[2]:

$$\bar{Y}^s - \bar{Y}^l = \left[\sum_{i=1}^{N^s} \frac{F(X_i^s \hat{\beta}^s)}{N^s} - \sum_{i=1}^{N^l} \frac{F(X_i^l \hat{\beta}^s)}{N^l} \right] + \left[\sum_{i=1}^{N^l} \frac{F(X_i^l \hat{\beta}^s)}{N^l} - \sum_{i=1}^{N^l} \frac{F(X_i^l \hat{\beta}^l)}{N^l} \right], \qquad (2)$$

with N^j denoting the sample size of group j. With $\bar{Y}^j$ as the average employment probability of group j and $F(\cdot)$ as the cumulative distribution function from the logistic distribution, eq. 2 holds exactly for a logit model including a constant term (Fairlie, 2005). In this specification, the coefficient estimates for the employment probability of the short-term unemployed ($\hat{\beta}^s$) are used as weights for the differences due to characteristics. The short-term unemployed distributions of the independent variables ($\bar{X}^s$) are the weights for the differences in coefficients. Alternatively, the employment probability gap between short- and long-term unemployed persons could be decomposed by

$$\bar{Y}^s - \bar{Y}^l = \left[\sum_{i=1}^{N^s} \frac{F(X_i^s \hat{\beta}^l)}{N^s} - \sum_{i=1}^{N^l} \frac{F(X_i^l \hat{\beta}^l)}{N^l} \right] + \left[\sum_{i=1}^{N^s} \frac{F(X_i^s \hat{\beta}^s)}{N^l} - \sum_{i=1}^{N^s} \frac{F(X_i^s \hat{\beta}^l)}{N^s} \right]. \qquad (3)$$

Here, the estimated coefficients and distribution of the independent variables of the long-term unemployed are used as weights for the two decomposition terms. Estimating the decomposition according to eq. 2 can lead to different parameter estimates than estimation by eq. 3. Unfortunately, as shown by Oaxaca and Ransom (1994), the actual nondiscriminatory structure should not necessarily lie between the short-term and the long-term structure of the estimates. Hence, Oaxaca and Ransom (1994) suggest to weight the first term of the decomposition using coefficient estimates from a pooled model of all short-term and long-term unemployed persons. This weight allows to estimate the employment probability of the individuals that would exist in the absence of unmeasurable differences.

Besides the total contribution of all independent variables on the gap in employment probabilities as given by eq. 2 and eq. 3, contributions of single independent variables or groups of variables are of interest for policy purposes. Following Fairlie (2005), the contribution of a single variable X_1

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[2]Besides Fairlie (2005), there are a number extensions of the technique of decomposition proposed in the literature. An early example is given by Gomulka and Stern (1990). More recently Yun (2004; 2005) suggests a generalization of the Oaxaca (1973)-Blinder (1973)-decomposition for any functional form of the outcome equation.

(with $\hat{\beta}^*$ denoting the coefficient from a logit model on the pooled sample) is given by

$$\frac{1}{N^l} \sum_{i=1}^{N^l} F(\hat{\alpha}^* + X_{1i}^s \hat{\beta}_1^* + X_{2i}^s \hat{\beta}_2^*) - F(\hat{\alpha}^* + X_{1i}^l \hat{\beta}_1^* + X_{2i}^s \hat{\beta}_2^*) \tag{4}$$

if $N_s = N_l$ and a natural one-to-one matching of short-term and long-term unemployed observations is assumed. Each variable contributes to the gap in terms of the change in the average predicted probability from replacing the distribution of the long-term unemployed with that of the short-term unemployed of that variable holding the other variables constant. It should be noted that the independent contributions of the variables depend on the values of the other variables. Hence, estimates of the employment gap may be sensitive to the choice of the variables. In sum, contributions from individual variables have to be equal to the total contribution from all variables.

Table 1: Estimation Procedure

Step	Description
1.	Calculate predicted $\hat{Y}_i$ for each observation in long-term unemployment and short-term unemployment sample
2.	Draw random sub-sample of short-term unemployed equal in size to long-term unemployed sample
3.	Rank observations according to predicted probability $\hat{Y}_i$ in both samples
4.	Match individuals on predicted probabilities
5.	Calculate the decompositions estimates
6.	Repeat steps 1 to 6 for numerous times (e.g. 1000) with randomizing the order of variables in step 1
7.	Calculate the mean value of the estimates from the separate decompositions in step 5

However, if sample sizes of the two groups in comparison differ the one-to-one matching of observations has to be replicated. To do so, a random sub-sample of the larger group in comparison should be drawn equal in size to the smaller group. Then, the individual calculated predicted probabilities from the pooled model are ranked separately and observations are matched by ranks. Decomposition estimates are obtained based on the matched sample. These estimates clearly depend on the random sub-sample. To get an estimate for the hypothetical decomposition I repeat the procedure for 1,000 times and use the mean value of the estimates as the results for the entire larger sample. Table 1 summarizes the steps of the estimation procedure. Finally, because of the non-linearity of the decomposition the ordering of the variables could affect the results. For this reason, in addition to randomizing the sort order of the individuals the order of the explanatory variables is randomized in the estimation as well.

4   Data and Descriptives

For the empirical analysis, I use a unique data base merged from register and survey data of short- and long-term unemployed persons in Germany. In the sample, 4,000 equally shared short- and long-term unemployed persons were drawn from the stock of unemployed people in Germany in

August 2006. Information was collected in in computer-assisted telephone interviews in September and October 2006. Data were completed by information merged from register data providing the employment states in February 2007. To consider urban and rural regions in East and West Germany a geographical stratification was imposed. Only people aged 18 to 57 are regarded. People aged 58 could choose a so-called relaxed benefit entitlement. Within these scheme they are no more required to actively search for employment, but could remain on welfare benefits until pension age.

In the final sample the share of long-term unemployed persons is slightly higher than of short-term unemployed. Moreover, due to missing values and some minor measurement errors the sample used in the analysis contains 3,610 observations of which 1,734 are short-term unemployed persons.

The survey's purpose is the measuring of individual's employability as an intermediate outcome of employment. For this reason, the data provide a rich and comprehensive characterization of the unemployed person's labor market and social situation. Based upon a small number of characteristics from register data (e.g. age, region, level of education) the categories of information surveyed cover

(i) **Information on actual labor market state and employment history:** These variables comprise, e.g., the duration of unemployment, labor market state before actual unemployment.

(ii) **Qualification and competencies:** Self-assessed information on elementary skills, e.g., reading and writing ability, calculating, familiarity with the internet are measured in grades ranging from 1 (very good) to 6 (insufficient). The educational level is a further characteristic of this category. Competencies contain soft skills (willingness to learn, accuracy in working behavior, and cooperativeness to work in a team, besides others) and information on the personality, i.e. whether the individual is socially integrated or is willing to take responsibility for actions.

(iii) **Health conditions:** Characteristics are surveyed in terms of the actual state of health, certain health limitations and the amount of hours able to work per day.

(iv) **Labor market orientation:** This category summarizes statements on work orientation and motivation. In one question, people should assess the chances of finding a suitable job with answers in four categories ranging from very likely to very unlikely. The answer scheme of this question is of particular importance for analyzing the employment gap between short- and long-term unemployed persons as it conveys generally unavailable information on the marketability of the individual. In the empirical analysis below, I will use the information to distinguish unemployed persons with good labor market prospects (person reports finding a job is *easy* or *very easy*) and with bad labor market prospects (*unlikely* and *very unlikely*).

(v) **Job search efforts and concessions to new job:** Variables of this category cover difficulties in job search, the number of job applications, contact to the employment agency during the last six months. Examples for the types of concessions asked in the questionnaire are whether the person is willing to accept a significantly lower wage than in the last job, to commute for up to 1.5 hours to the new working place and to accept a job below the individual's qualification.

(vi) **Social stability:** The situation of the individual within her social environment and her peer-group is described by items like job loss due to social instability, the size of the peer-group (knowledge of other unemployed persons in a similar situation) or the usage of counseling and further activities of the employment agency.

(vii) **Experiences with activation by employment agency:** People are asked about their experiences with the caseworker and the job search process organized and administered by the agency. The main items in this category cover contents of counseling, benefit sanctions and participation in active labor market policy programs.

(viii) **Socio-demographic information:** In this category information on gender, age, and the number of persons living in the household is available.

Table 2 presents means of selected variables for the four basic groups in analysis, i.e. short-term and long-term unemployed with good and bad labor market prospects based on self-reported job finding chances. Regarding the number of observations, the share of unemployed reporting good labor market chances is clearly minority independently of unemployment duration. With respect to the outcome (non-subsidized employment six months after the date of drawing the sample), one could observe a negative unemployment duration dependence on the transition to employment. More than one third of the short-term unemployed with good labor market prospects have left unemployment, whereas only 9% of the long-term unemployed persons with bad labor market prospects were able to do so either. In both groups, persons reporting good chances have higher employment rates than those reporting bad chances. This indicates that self-reported job-finding chances are positively correlated with actual job chances.

In elementary and soft skills as well as in personality short-term and long-term unemployed persons do not differ much, although short-term unemployed persons tend to be slightly better off in these characteristics. Some further differences could be revealed from the variables describing labor market chances. Independently of unemployment duration, persons with good chances have written more job applications on average compared to persons with bad chances. Clearly, the share of persons with more than six months of unemployment is higher in the group of long-term unemployed than in the group of short-term unemployed persons. In addition, the number of contacts with the employment agency should increase with unemployment duration which is true in the data.

Health conditions may influence the employment chances of the unemployed individual due to negative effects on productivity. In line with the expectation, people reporting good job chances have better health conditions on average. Moreover, long-term unemployed persons have on average worse health conditions than short-term unemployed. Whereas only about six percent of the short-term unemployed with good job chances report bad health conditions, the share in the group of long-term unemployed persons with bad labor market prospects exceeds one quarter.

Without analyzing the reasons, the variables on the concessions the individual is willing to agree for a new job obtain further heterogeneity between groups. The figures show that long-term unemployed are willing to agree with a longer commuting time as well as a job of lower qualification. Amongst

Table 2: Means of Selected Variables

	short-term unemployed		long-term unemployed	
	labor market chances[a]			
	good	bad	good	bad
employment[b]	0.336	0.258	0.145	0.090
Elementary and soft skills				
cooperativeness	0.976	0.976	0.967	0.940
willingness to learn	0.981	0.945	0.961	0.935
reading & writing	1.869	1.961	2.007	2.080
calculating	2.125	2.236	2.336	2.445
internet	2.169	2.443	2.368	2.569
Personality				
responsible	0.992	0.974	0.974	0.942
socially integrated	0.803	0.776	0.816	0.687
Labor market chances				
job applications	0.765	0.667	0.789	0.616
contact to employment agency	0.141	0.043	3.724	3.055
work experience	0.803	0.767	0.684	0.615
social network	0.592	0.592	0.553	0.492
> 6 months of unemp.	0.053	0.146	0.730	0.911
Health status				
good health conditions	0.725	0.564	0.586	0.419
medium health conditions	0.211	0.274	0.257	0.318
bad health conditions	0.064	0.162	0.158	0.263
Concessions for new job				
work place far away	0.485	0.450	0.586	0.541
job below qualification	0.787	0.800	0.822	0.853
change of occupation	0.403	0.272	0.533	0.343
significantly lower wage than last job	0.280	0.270	0.388	0.426
Socio-demographics				
woman	0.381	0.470	0.395	0.461
no. of persons in household	2.579	2.658	2.428	2.244
low education	0.477	0.511	0.553	0.572
medium education	0.400	0.380	0.336	0.343
high education	0.123	0.109	0.112	0.085
18 to 24 years	0.069	0.037	0.145	0.046
25 to 34 years	0.379	0.205	0.375	0.255
35 to 44 years	0.352	0.299	0.303	0.305
45 to 57 years	0.200	0.459	0.178	0.394
Regions				
West Germany, urban	0.304	0.272	0.289	0.240
West Germany, rural	0.251	0.241	0.237	0.239
East Germany, urban	0.259	0.238	0.230	0.267
East Germany, rural	0.187	0.249	0.243	0.255
No. of obs.	375	1,359	152	1,724

[a] Labor market chances refer to self-reported information. See text for details.
[b] Employment six months after interview.

the groups distinguished by unemployment duration, persons with bad prospects report a larger degree of concessions. Interestingly, although persons with bad chances accept a job below their qualification more easily they are less willing to change their occupation. This finding is true for short-term and long-term unemployed as well. Finally, regarding the wage less than 28% of the short-term unemployed persons are willing to earn significantly less (i.e. a wage about 20% less

than the wage in the last occupation). In line with job-search theory that predicts a decreasing reservation wage with unemployment duration (see, e.g., Mortensen, 1986) about 40% of the long-term unemployed persons would accept a significantly lower wager in a new job.

The last finding I want to mention are the shares of the age groups. The results clarify that younger unemployed are more optimistic regarding their job chances; the shares are almost twice (short-term unemployed) to trice (long-term unemployed) as high in the group of the 18 to 24 year old. In contrast, older unemployed assess their employment chances less optimistic. For the 45 to 57 year old, the share of persons reporting bad chances doubles the share of those reporting good prospects.

Given the rich data on the labor market situation of the individuals I analyze the gap in job finding chances between short-term and long-term unemployed persons regarding a variety of usually non-observable factors. In order to parsimoniously specify the empirical model I select a subset of variables from each of the categories. The final set of variables has been chosen with the purpose to provide a good fit of the model for the employment probability in the full sample. To enable direct comparison of the estimates for the different groups below, the same specification is used for the other comparisons, too.

Estimation is carried out in five separate comparisons. The first comparison considers the employment gap between short-term and long-term unemployed persons regarding the full sample. This comparison is the reference as it takes account of the unconditional structure of the groups of the short-term and long-term unemployed persons in the stock of unemployed in August 2006. However, particularly in the group of short-term unemployed but also in the group of long-term unemployed people are heterogeneous with respect to the employment chances. In the group of the short-term unemployed, there may be a number of persons who will leave unemployment quickly, but there are persons with a large risk of becoming long-term unemployed, too. Even in the group of the long-term unemployed, persons' employment chances differ. To distinguish groups with good and bad job finding chances I could use the self-reported information of the individuals. I assume this variable to capture unobservable information about motivation, work habits and self-esteem of the individual as well as a self-assessed measure of marketability. The groups of short-term and long-term unemployed persons are further differentiated by the assessment of the job finding chances, leaving us with four groups. From these groups the remaining four comparisons are made as follows: For the second comparison, I consider only persons reporting good job chances in the comparison. The third comparison is the analogue for persons with bad job chances. In the last two comparisons I decompose the employment chances of the whole group of short-term unemployed and of long-term unemployed reporting good labor market prospects (comparison four) as well as of long-term unemployed reporting bad labor market prospects (comparison five).

5 Estimation Results

5.1 Employment Probability

To start with I will discuss the coefficient estimates of the binary logit models of employment first. Table 3 provides the results of the pooled coefficients for the five comparisons analyzed. The coefficients for the single variables do not differ much between comparisons, but some differences should be noticed. The effects of the elementary skills (reading & writing, calculating, internet) have an inverse effect on employment probability due to the scale of measurement (1=very good, 6=insufficient). Interestingly, reading & writing implies a positive effect on the employment chances for persons reporting good job finding chances only; for the other groups no significant effects could be established. In contrast, higher self-assessed calculating skills have a positive effect in the full sample but also for people reporting bad job chances. Familiarity with the internet has no effect at all.

In regards to the soft skills, only for people reporting bad job chances a positive effect for the willingness to learn new tasks is found (the items for the soft skills are not coded inversely). Soft skills are asked in the survey to enable consideration of in most data sets missing and, therefore, unobservable characteristics, e.g. the motivation of the individual. For that reason, the two significant estimates may be interpreted as a stronger value of the willingness to learn for those with bad prospects compared to persons with better prospects. Consequently, for those with better prospects other characteristics are more important for the employment chances. The variables that take account of the personality of the individuals have no effect. Moreover, the characteristics describing the labor market chances are similar in all five models and match with the expectations. A more intensive job search as approximated by the number of job applications increases employment chances, whereas a longer duration of unemployment coincides with decreased job chances. In line with that there is a negative effect of the variable group, a dummy taking value 1 if the person belongs to the long-term unemployed group in each of the comparisons.

Similarly, the coefficients for the socio-demographic variables reveal no surprising findings. Employment chances increase with formal qualification, decrease with age and are smaller for women than for men, although this finding is not stable for all groups. Regional differences in the employment chances could not be established. Although signs of the estimates for the East German regions are negative in reference to West German urban regions that is due to lower labor market dynamics, a smaller labor demand and a higher unemployment rate, none of the estimates is significant. Hence, demand side aspects are of minor importance as far as they are captured in the regional dummy variables. Before turning to the results of the decomposition, two further findings should be noted. Unfortunately, the variables capturing the concessions the unemployed are willing to make for a new job do not show any effect at all. But there is a clear evidence that employment chances depend on the health status of the individuals. Persons in good health conditions who are able to work a full day are more likely to find a job compared to people with medium or even bad health. Given that health aspects are only marginally regarded within German (active) labor market policy, spending

Table 3: Logit Estimates for Different Samples

	Full Sample	Good Job Chances[a]	Bad Job Chances[b]	Good Job Chances (long-term unemp.)[c]	Bad Job Chances (long-term unemp.)[d]
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Basic and soft skills					
reading & writing	-0.0106	-0.4736**	0.0773	-0.1380	-0.0197
calculating	-0.2565***	-0.0856	-0.1546**	-0.0317	-0.1481**
internet	0.0725	0.1195	0.0043	-0.0112	0.0153
cooperativeness	-0.0161	0.1232	-0.0754	0.0820	-0.0381
willingness to learn	0.0727	-0.9483	0.6472**	0.5267	0.4592*
Personality					
responsible	-0.1943	-0.5603	-0.0415	0.0230	-0.0830
socially integrated	-0.1702	-0.0802	-0.0098	0.0829	-0.0247
Labor market chances					
job applications	0.3848**	0.4616*	0.5350***	0.6148***	0.5246***
contact to employment agency	0.0021	0.0114	-0.0010	-0.0082	-0.0043
work experience	-0.1366	-0.2116	-0.0081	-0.0329	-0.0356
social network	0.0670	-0.1100	0.0772	-0.0085	0.0462
> 6 months of unemp.	-0.7536***	-0.8784**	-0.3351**	-0.2764	-0.5567***
Health status (reference: medium health)					
good health	0.2935*	0.8770***	0.1268	0.3446**	0.2444**
bad health	-0.7299***	-0.3721	-0.6267***	-0.4561**	-0.5984***
Concessions for new job					
work place far away	-0.0043	-0.1665	0.1241	0.0754	0.0709
job below qualification	-0.0827	-0.2011	0.0070	-0.0753	-0.0360
change of occupation	0.0114	-0.0251	-0.0696	-0.1356	-0.0831
significantly lower wage than last job	0.0312	0.1934	-0.0527	-0.0084	-0.0276
Socio-demographics					
woman	-0.1874	-0.2483	-0.3057***	-0.3265***	-0.2774***
no. of persons in household	0.0283	-0.0889	0.2734*	0.0851	0.1411
—(squared)	-0.0117	0.0041	-0.0432	-0.0076	-0.0213
medium education[e]	0.3553**	-0.1775	0.3799***	0.0746	0.2730**
high education	0.5734**	0.2671	0.4588**	0.3014	0.4345***
25 to 34 years[f]	-0.5815**	-0.6430	-0.3068	-0.2198	-0.3166
35 to 44 years	-0.5741**	-0.5140	-0.4265*	-0.2950	-0.3683*
45 to 57 years	-0.8654***	-0.6944	-0.7215***	-0.5503**	-0.6299***
Regions (reference: West Germany, urban)					
West Germany, rural	0.0363	-0.1582	0.0309	-0.1031	-0.0119
East Germany, urban	-0.2040	-0.0610	-0.0959	0.0122	-0.1036
East Germany, rural	-0.0025	0.3954	-0.0422	0.1618	0.0207
Group	-0.7134***	-0.6571*	-0.8972***	-0.7676***	-0.7010***
Constant	0.1730	1.8565	-1.6704***	-1.5152**	-1.1436**
pseudo R^2	0.1302	0.1139	0.1095	0.0614	0.1084
no. of obs.	2,251	527	3,083	1,886	3,610

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

[a] Sample *good job chances* includes short- and long-term unemployed persons who self-report good and very good job finding chances.

[b] Sample *bad job chances* includes short- and long-term unemployed persons who self-report bad and very bad job finding chances.

[c] Sample *good job chances (long-term unemployed)* contains all short-term unemployed and long-term unemployed persons who self-report good and very good job finding chances.

[d] Sample *bad job chances (long-term unemployed)* contains all short-term unemployed and long-term unemployed persons who self-report bad and very bad job finding chances.

[e] Estimates with reference category *low education*.

[f] Estimates with reference category *18 to 24 years*.

more effort on designing and providing activities that improve job seekers' health could be derived from the results.

5.2 Explaining the Gap in Job Finding Chances

The results of the decomposition of the employment gap are given in Table 4. The first column provides the estimates for the full sample distinguishing short-term and long-term unemployed persons without taking account of the individually reported job chances. Columns two and three give the results for the sub-samples of persons reporting good and bad chances respectively. In column four the determinants of the job finding gap between the long-term unemployed persons with good job chances and all short-term unemployed persons are displayed and column five presents the analogue results for long-term unemployed persons with bad job chances. The upper panel of the table shows the employment rates for the distinct groups in comparison where group 1 always refers to the short-term unemployed. In addition, the difference in job finding chances is given as well as the part that could be explained by differences in attributes of the short-term and long-term unemployed.

As already mentioned in the discussion of the descriptives, short-term unemployed have higher employment chances than long-term unemployed. A quarter to a third of the short-term unemployed has found a job in February 2007, whereas for the long-term unemployed only 9 to 15% were successful. Consequently, the gaps in employment chances amount to between about 13 to 19 percent. Persons who report better job chances have a higher empirical job-finding rate as well and vice versa the picture is the other way round for persons reporting bad prospects. All in all, except for the model comparing long-term unemployed reporting good job chances to all short-term unemployed, about half of the difference (47.16 to 58.35 percent) could be explained by differences in endowments in any of the comparisons. As mentioned above the remaining differences are due to a different valuing of the attributes, discrimination and other unobservable factors.

The lower panel provides contributions from differences in certain groups of variables. *Soft skills* comprise the effects of cooperativeness and willingness to learn, *elementary skills* are reading & writing, calculating and internet. The category *health conditions* covers the variables describing the health status. The different concessions considered in the models on the employment chances are summarized in *concessions for a new job*.

As expected the largest part of the gap in the employment chances could be attributed to the difference in unemployment duration. The descriptives (see Table 2) have shown that the share of the long-term unemployed persons with more than six months of unemployment is clearly larger particularly in the group reporting bad job finding chances compared to the short-term unemployed persons . However, depending on the type of comparison the differences in unemployment duration account for between 23 (long-term unemployed with good job chances compared to all short-term unemployed) to 53 percent (long-term unemployed with good job chances compared to short-term unemployed with good chances) of the gap which leaves room for further influences.

Table 4: Non-linear Decomposition of the Employment Gap

	Full Sample	Good Job Chances[a]	Bad Job Chances[b]	Good Job Chances (long-term unemp.)[c]	Bad Job Chances (long-term unemp.)[d]
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Employment (group 1)	0.275	0.336	0.258	0.275	0.264
Employment (group 2)	0.095	0.145	0.090	0.145	0.090
Difference	0.180	0.191	0.167	0.130	0.174
Total explained	0.085	0.103	0.068	0.015	0.101
	47.16%	53.70%	40.61%	11.24%	58.35%
Contributions from differences in:					
soft skills	0.001	-0.003	0.000	-0.001	0.001
	0.33%	-1.67%	0.02%	-0.42%	0.35%
elementary skills	0.005**	0.012	0.004	0.003	0.005**
	2.84%	6.48%	2.17%	2.04%	2.74%
job applications	0.005***	-0.001	0.004***	-0.009***	0.006***
	2.68%	-0.55%	2.64%	-6.88%	3.28%
work experience and	-0.001	-0.005	0.001	-0.001	0.000
social network	-0.32%	-2.56%	0.64%	-0.43%	-0.09%
health conditions	0.015***	0.025***	0.011***	0.002	0.015***
	8.29%	13.03%	6.46%	1.30%	8.64%
concessions for new job	0.000	0.000	0.000	0.005	0.001
	0.18%	0.13%	0.14%	3.59%	0.31%
contact to job center	0.000	-0.008	0.000	0.005	0.002
	0.04%	-3.98%	0.28%	4.04%	1.01%
no. of persons in household	0.003	-0.003	0.006*	0.003	0.003
	1.54%	-1.76%	3.37%	2.53%	1.56%
personality	-0.001	-0.001	0.000	0.000	-0.001
	-0.30%	-0.78%	-0.19%	-0.37%	-0.44%
education	0.004***	-0.001	0.004***	0.001	0.004***
	2.32%	-0.33%	2.63%	0.76%	2.22%
regions	0.000	-0.004	0.001	-0.001	0.000
	0.18%	-2.14%	0.35%	-0.53%	0.24%
age	-0.003***	-0.009	-0.005***	-0.019**	0.000
	-1.47%	-4.64%	-3.01%	-14.26%	0.28%
woman	0.001	0.000	0.000	-0.004**	0.001**
	0.46%	0.01%	0.22%	-3.34%	0.73%
> 6 months of unemp.	0.055***	0.101***	0.042**	0.030*	0.065***
	30.37%	52.60%	24.87%	22.96%	37.53%

Contribution estimates are mean values of the decomposition using 1,000 subsamples of group 1 in each comparison. See text for details. Estimation was carried out with FAIRLIE module by Jann (2007).
* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$
[a] Sample *good job chances* includes short- and long-term unemployed persons who self-report good and very good job finding chances.
[b] Sample *bad job chances* includes short- and long-term unemployed persons who self-report bad and very bad job finding chances.
[c] Sample *good job chances (long-term unemployed)* contains all short-term unemployed and long-term unemployed persons who self-report good and very good job finding chances.
[d] Sample *bad job chances (long-term unemployed)* contains all short-term unemployed and long-term unemployed persons who self-report bad and very bad job finding chances.

Obviously, one would expect long-term unemployed to possess a lower qualification and, hence, a lower productivity compared to short-term unemployed which could be a reason for the longer unemployment duration. Policy makers therefore spend a large amount of the annual budget for labor market policy on training courses intended to increase the human capital skills of the individuals. However, empirical evaluations of the programs have shown that their value in regards to increased

employment chances and sustainable employment is not without doubt at least for Germany (see, e.g., Hujer, Thomsen, and Zeiss, 2006, and Lechner and Wunsch, 2008). A reason for the unsatisfying effects of the programs could be derived from the estimates here. Although short-term and long-term unemployed persons differ in elementary skills and formal education, these differences could explain only a very small fraction of the difference in the gap of job finding rates. In the full sample, only about 2.8 percent of the gap are explained by differences in elementary skills and another 2.3 percent by differences in formal education. Moreover, educational differences play a role for the long-term unemployed reporting bad job chances, but not for those with good perspectives. The same is true for differences in elementary skills. Hence, the focus of active labor market policy on reducing these deficits of the long-term unemployed persons with training programs could increase the employment chances slightly only. This could, at least in part, explain why training programs in Germany are not more successful in integrating unemployed persons into the labor market.

Moreover, the results show that some of the gap is due to a lower job-search intensity of the long-term unemployed approximated by the number of job applications. If long-term unemployed persons had applied as often for jobs as the short-term unemployed the gap would be narrower. However, the underlying assumption of the proxy variable to be valid is that job applications are homogeneous between groups. The finding for long-term unemployed reporting good chances compared to all short-term unemployed shows evidence that somewhat contradicts the assumption. Although they applied on average more often, this was destructive on the employment chances compared to the short-term unemployed. Obviously, a number of reasons could be responsible for this finding. On the one hand, the quality of applications in both groups may differ and, thus, long-term unemployed write on average more job applications to get a job. On the other hand, if one assumes the quality of the applications to be same the timing of the job application within the unemployment spell may play a role. If some employers statistically discriminate long-term unemployed, people have to write more applications in order to increase job chances by finding a non-discriminating employer.

The number of persons living in the household explains some of the gap only in the sample of persons reporting bad job chances. Here, child care responsibilities may be a reason for the empirically evidenced as well as self-reported lower employment chances. The other variables in analysis do not contribute to explaining the job finding gap. This shows that long-term unemployed persons do not differ in regards to the social skills, personality or willingness to make concessions for a new job from short-term unemployed persons in a way that hampers the probability of getting a job.

Differences in health conditions determine about 8.3 percent of the gap in the full sample which is a clearly larger contribution than that of skill or qualification heterogeneity. Even more relevant are those differences between short-term and long-term unemployed persons who report good job chances; if the long-term unemployed had the same health conditions the gap in employment chances would be about 13 percent narrower. In contrast, for persons with worse health there is still a contribution to the gap but it is smaller. Two implications could be derived from this finding. First, health conditions are crucial for job finding chances. Second, compared to the differences in elementary skills and education, health differences are more important and policy makers should

spend more attention on programs improving the physical (and mental) health of the unemployed in order to increase employment chances. In light with the dissatisfying outcomes of many programs aiming to improve human capital skills, a reorganization of the activities could maybe arranged a no increase of costs.

6   Conclusion

A high and persistent share of long-term unemployment characterizes the German labor market. Despite a reform of the benefits' system in 2005, the level of the number of long-term unemployed persons still exceeds one million, and, more importantly, the ratio of short-term to long-term unemployment decreases indicating a rising proportion of long-term unemployed on all unemployed. To lower the risk of becoming long-term unemployed and to reduce the level various active and activation labor market policy programs are offered by local employment offices. However, recent evaluations of these programs as well as international experiences have shown that the majority of the activities leads to at best small positive effects for the participating individuals. There are a number of possible reasons for this unsatisfying result. Programs could be regarded as negative signals of productivity, duration of programs could be too long so so-called locking-in effects overcompensate positive program effects, or placement of job-seekers to available programs could be inefficient. However, more straightforward, programs' effectiveness could suffer from inadequate design to the needs of the job seekers.

In this paper, I analyze these needs of the job-seekers conditional on the job-finding chances. Knowing about the determinants of employability of long-term unemployed persons could help to arrange programs that meet the requirements of the job-seekers for labor market integration better. Long-term unemployed persons are a selective with respect to employment chances and unemployment duration compared to all unemployed persons. For this reason, factors determining employability of this group may differ from other groups of unemployed persons. Identifying these potential differences, therefore, could help to address programs more adequately. If, for example, a factor plays a significant role for the employability of the long-term unemployed but not for the short-term unemployed providing a program early in the unemployment spell that takes account of this particular factor will reduce the risk of becoming long-term unemployed and the number of long-term unemployed persons, too.

The results show that a major source of the difference in employability between short-term and long-term unemployed persons is explained by unemployment duration itself. Despite the large number of factors regarded in the analysis, unemployment duration captures many still unobservable factors determining job finding. For that reason, programs intended to increase the search efficiency of the individual could be expected to provide a valuable tool for integration. Recent empirical evaluations of job search programs in Germany show that these programs are effective in reducing unemployment duration, see e.g. Hujer, Thomsen, and Zeiss (2006a) and Wolff and Jozwiak (2007). Moreover, differences in skills, i.e. qualification, elementary and soft skills, explain only a small fraction of the gap in employability between short-term and long-term unemployed persons. Hence,

programs focusing on increasing human capital skills could increase the employability of the individual, but the possible effects are limited. This is in line with the empirical findings on the effects of vocational training programs that show negative or at best small positive employment effects for the participating individuals, see e.g. Hujer, Thomsen, and Zeiss (2006b), Lechner and Wunsch (2008) or Biewen, Fitzenberger, Osikominu, and Waller (2006). In contrast, health conditions affect the employability of the individuals more strongly. Hence, improving the health situation of persons at risk of long-term unemployment and of long-term unemployed persons leaves scope for an increase in labor market integration. Up to now, this aspect is only marginally regarded within the set of active labor market policy. Addressing the issue more articulated by integrating activities aiming at improving the health conditions of the job-seeker in the placement process of the employment offices should lead to better impacts of active labor market policy.

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