Thomsen, Stephan L.

Working Paper

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

ZEW Discussion Papers, No. 08-062

Provided in cooperation with:
Zentrum für Europäische Wirtschaftsforschung (ZEW)

Suggested citation: Thomsen, Stephan L. (2008) : Explaining the Employability Gap of Short-term and Long-term Unemployed Persons, ZEW Discussion Papers, No. 08-062, http://hdl.handle.net/10419/24758

Discussion Paper No. 08-062

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

Stephan L. Thomsen

ZEW
Zentrum für Europäische Wirtschaftsforschung GmbH
Centre for European Economic Research

Discussion Paper No. 08-062

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

Stephan L. Thomsen

Non-Technical Summary

European countries provide a number of different active labor market policy programs to reduce the risk of and the amount of long-term unemployment. Programs focus on particular sets of barriers to employment, such as lack of motivation (via sanctions) or lack of job search skills (via job search assistance) or lack of experience (via wage subsidies) or lack of marketable skills (via training programs). They do not focus on many other barriers. Numerous studies have been conducted to analyze the effectiveness of these activities. The results clarify that a number of programs are not very successful reaching the intended goals. The major reason may be that the available programs do not (or do not fully) meet the needs of the unemployed. On the one hand, specific needs may be unobservable to (or unrecognized by) the caseworker in charge, on the other hand, the set of available programs and activities may be incomplete or inflexible to address the needs correctly. Analyzing the factors driving employment chances, therefore, is a necessary step to shed light on the needs of job seekers and to derive recommendations for a (re-)arrangement of active labor market policy according to those needs.

In this paper, 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 regarding unemployment duration in a comparative static way. The empirical analysis is based on unique survey data of short-term and long-term unemployed persons merged with administrative data for Germany. These data include usually unavailable information of job-seekers covering, e.g., soft skills, concessions the job-seeker is willing to make for a new job, health and the time able to work a day, importance of peers, self-assessed job finding chances and a set of obstacles for employment integration like financial debts, care obligations for children or frail elderly or substance abuse including alcohol. The employment 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.

The results highlight three significant and important findings: First, differences in skills measured by elementary skills, formal education and soft skills could explain a small part of the employment gap between short-term and long-term unemployed persons only. Hence, providing courses that aim at increasing skills of the individuals (at least in Germany) may reduce the employment gap, but the scope is limited. Moreover, this may explain why training programs in Europe and particularly in Germany are not more successful in employment integration of participants. Second, differences in obstacles to employment measured in terms of substance abuse, financial debts or care obligations are crucial. If long-term unemployed persons would be equal in characteristics to the short-term unemployed, the employment gap between both groups would be clearly more narrow. Third, differences in the state of health and in particular limitations in working ability account largely for the employment gap. For this reason, policy makers should spend more attention on the last two findings when designing the placement process. The set of active labor market programs should be revised addressing these aspects in order to increase employability of the participants.

Das Wichtigste in Kürze

Programme der aktiven Arbeitsmarktpolitik werden in vielen europäischen Ländern eingesetzt, um das Risiko und den Umfang der Langzeitarbeitslosigkeit zu verringern. Die eingesetzten Aktivitäten orientieren sich hierbei an spezifischen Problemen: eine geringe Motivation oder Kooperationsbereitschaft in der Arbeitsuche soll z.B. durch die Verhängung von Sanktionen überwunden werden, Defizite in der Arbeitsuche sollen durch kurzfristige Trainingsmaßnahmen behoben werden, Fortbildung und berufliche Weiterbildung zielen auf die Verbesserung der Qualifikation ab und zu geringe Arbeitserfahrung ist Gegenstand der subventionierten Beschäftigung. Trotz des umfangreichen Instrumentariums werden viele weitere Eingliederungshemmnisse nicht oder nur wenig berücksichtigt. In einer ganzen Reihe empirischer Studien sind die Wirkungen der unterschiedlichen Maßnahmen evaluiert worden. Im Allgemeinen zeigen die Ergebnisse aber bestenfalls mäßig positive Erfolge der Aktivitäten im Hinblick auf die intendierten Ziele. Ein wichtiger Grund hierfür ist möglicherweise, dass sich die Bedürfnisse der Arbeitsuchenden in den Maßnahmen nur unvollständig widerspiegeln. Um diese adäquat berücksichtigen zu können, ist allerdings eine Identifikation und Bestimmung der Relevanz eine Voraussetzung. Ausgehend davon können dann Handlungsempfehlungen für die Arbeitsmarktpolitik abgeleitet werden.

In dieser Studie werden die Unterschiede in der Beschäftigungsfähigkeit zwischen Kurzzeit- und Langzeitarbeitslosen analysiert, um die Bedeutung der einzelnen Faktoren für eine erfolgreiche Jobsuche zu identifizieren. Die Verwendung kombinierter Erhebungs- und Registerdaten der Bundesagentur für Arbeit erlaubt hierbei die Berücksichtigung interessanter Merkmale, wie z.B. Soft Skills, Konzessionsbereitschaft, Lernbereitschaft, gesundheitliche Einschränkungen, besondere Hemmnisse einer Eingliederung, insbesondere Schulden oder Pflegeverpflichtungen. Durch Dekomposition des Abstands in der Beschäftigungsfähigkeit können Unterschiede aufgrund beobachtbarer und unbeobachtbarer Eigenschaften der Gruppen unterschieden werden.

Die empirischen Ergebnisse führen zu drei wichtigen Schlussfolgerungen: 1) Unterschiede in der Qualifikation erklären nur einen kleinen Teil des Unterschieds in der Beschäftigungsfähigkeit. Es ist daher zu erwarten, dass Programme, die auf solche Defizite abstellen, nur bedingt wirksam sein können. Dies kann auch eine Erklärung für die mäßigen Erfolge der Förderung der beruflichen Weiterbildung in Deutschland sein. 2) Unterschiede in den Hemmnissen, wie Schulden oder Pflegeverpflichtungen, spielen eine zentrale Rolle für eine reduzierte Vermittlung der Langzeitarbeitslosen. 3) Gesundheitliche Einschränkungen liegen häufiger vor und die tägliche Arbeitsfähigkeit ist ebenfalls deutlich geringer bei den Langzeitarbeitslosen. Insbesondere die letzten beiden Ergebnisse werden bisher zu wenig im Vermittlungsprozess berücksichtigt. Daher sollten die Programme der aktiven Arbeitsmarktpolitik im Hinblick auf diese Aspekte überarbeitet bzw. ergänzt werden, um die Beschäftigungsfähigkeit ihrer Teilnehmer zu erhöhen.

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

Stephan L. Thomsen
Otto-von-Guericke-University, Magdeburg & ZEW, Mannheim

August 26, 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 employment integration. Based on merged survey and register data differences in job finding chances of 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 current active labor market programs do not address important factors of employment. Particularly, health of the job seekers, limitations in the working ability and obstacles to employment comprising substance abuse, financial debts or care obligations for children or frail elderly play a significant role for successful placement. The conclusion is that policy makers should integrate these aspects in the placement process.

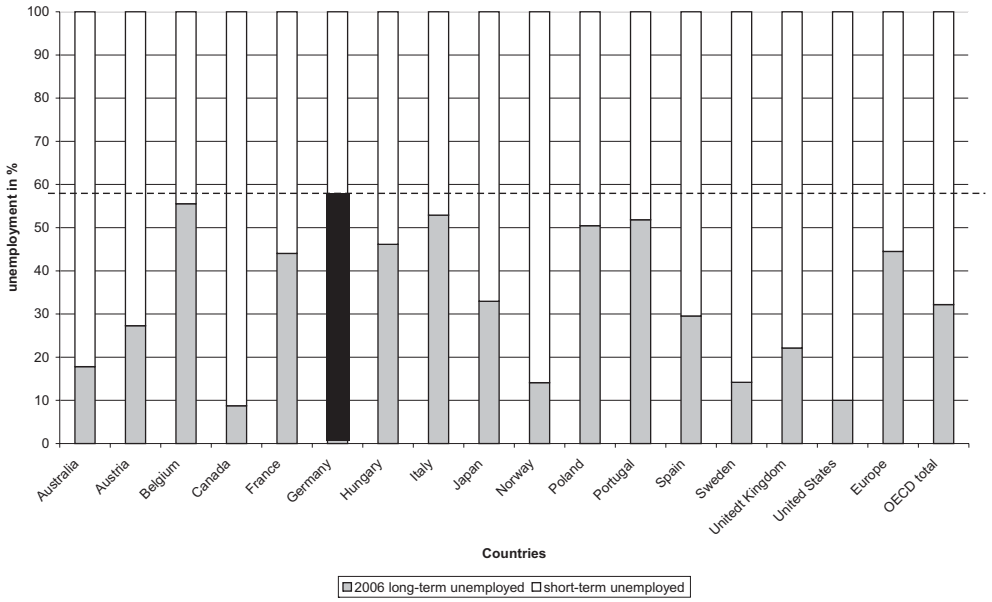
Keywords: unemployment, employability, active labor market policy, decomposition, Germany
JEL Classification: J64, J68, C50

*I thank Jeffrey Smith, Alisher Aldashev and Thomas Walter for valuable comments, and Gerd Heyer from German Ministry of Employment for supporting this work. The paper is part of the project *Social Code II - preparatory study on constructing an empirical measure of employability* ("SGB II - Vorstudie Beschäftigungsfähigkeit") of the Institute for Employment Research (IAB), Nuremberg, the Institute for Social Research and Politics of Society (ISG), Cologne, the Centre for European Economic Research (ZEW), Mannheim, the Institute for Labour and Qualification (IAQ), Gelsenkirchen, and the Chair of Labor Economics, University of Magdeburg, on behalf of the German Ministry of Employment.
Stephan L. Thomsen is Assistant Professor of Labor Economics at Otto-von-Guericke-University Magdeburg and Research Professor at Centre for European Economic Research (ZEW) Mannheim. Address: PO Box 4120, D-39016 Magdeburg, e-mail: stephan.thomsen@ovgu.de, phone: +49 391 6718431, fax: +49 391 6711218. Financial support from Stifterverband für die Deutsche Wissenschaft (Claussen-Simon-Stiftung) is gratefully acknowledged. The usual disclaimer applies.

1 Introduction

Reducing the risk of long-term unemployment is one central purpose of labor market policy. Although particularly European countries provide a number of different active labor market policy programs to reduce the risk of and the amount of long-term unemployment, these countries suffer from high long-term unemployment rates. Long-term unemployment is conventionally defined as those who have been continuously unemployed for at least one year. Figure 1 provides shares of long-term unemployment on total unemployment for a selection of OECD countries in 2006. It becomes obvious that Germany, Belgium, Italy, Poland and Portugal experience long-term unemployed shares of all unemployed of more than 50 percent. 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)



Source: data from OECD website

The active labor market programs provided in many countries focus on particular sets of barriers to employment, such as lack of motivation (via sanctions) or lack of job search skills (via job search assistance) or lack of experience (via wage subsidies) or lack of marketable skills (via training programs). They do not focus on many other barriers. However, the extensive overviews by Martin and Grubb (2001) and Kluve (2006) clarify that a number of 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 (locking-in effects, 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 caseworkers

or the general set-up of the placement process. For example, Berger, Black, and Smith (2001) and Lechner and Smith (2007) show how the allocation of job-seekers into programs could be improved based on comparing estimated impacts of several programs.[1] A limitation of those attempts is that they could be accomplished ex post only taking the set of available programs as given.

Although these three reasons have been proved to be relevant for the disappointing success of active labor market programs, the major reason may be that the available programs do not (or do not fully) meet the needs of the unemployed. On the one hand, specific needs may be unobservable to (or unrecognized by) the caseworker in charge, on the other hand, the set of available programs and activities may be incomplete or inflexible to address the needs correctly. For example, various studies have shown that health affects labor supply (Bartel and Taubman, 1979; Contoyannis and Rice, 2001) or, more detailed, that there are effects of substance abuse (Gill and Michaels 1992) or smoking behavior (Levine, Gustafson, and Velenchik, 1997; Cutler and Glaeser, 2005) but particularly the latter factors are typically neither regarded in labor market programs nor in evaluation studies.[2]

Analyzing the factors driving employment chances, therefore, is a reasonable first step to shed light on the needs of job seekers. Moreover, the effects of the single factors may change over time, i.e. some factors that are of minor importance for the probability of leaving unemployment during the first weeks may be of larger relevance later in the unemployment spell.[3] Therefore, regarding time-variation is necessary to derive correct policy recommendations for a more adequate design of labor market policy in a second step. Knowing about whether low employment probabilities are due to qualification, statistical 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 permanently employed without any subsidies. Job search assistance programs (counseling on increased search efforts and job search programs combined with benefit sanctioning) assume job-seekers do not efficiently look for jobs but already possess the necessary human capital skills demanded by the market. Training programs, in contrast, are designed in order to increase human capital skills and qualification of unemployed and particularly long-term unemployed persons necessary for employment.

In this paper, 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 regarding unemployment duration in a comparative static way. The empirical analysis is based on unique survey data of short-term and long-term unemployed persons merged with administrative data for Germany. These data include usually unavailable information of job-seekers covering, e.g., soft skills, concessions the job-

[1] A practical application for Germany was conducted at the Institute for Employment Research during 2004 to 2006 titled with the acronym 'TrEffeR', i.e. *Treatment Effects and Prediction*. For a description see, e.g., Stephan, Rässler, and Schewe (2006).

[2] It should be noted that most analyses considering the relation between health and labor supply focus on the margin of taking people out of the labor force altogether. This may be a reason why these issues are not regarded when studying the impacts of labor market programs. Nevertheless, it may be reasonable in this context to expect effects of health or effects related to health.

[3] Put differently, even if the relevance of factors does not change over time due to dynamic selection of individuals the corresponding effects may be obtained at later points of time only.

seeker is willing to make for a new job, health and the time able to work a day, importance of peers, self-assessed job finding chances and a set of obstacles for employment integration like financial debts, care obligations for children or frail elderly or substance abuse including alcohol. The employment 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 works of Oaxaca (1973) and Blinder (1973), this is the first application (to my knowledge) 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 considered by applying the extension of the Oaxaca-Blinder decomposition by Fairlie (2005).

The results highlight three significant and important findings: First, differences in skills measured by elementary skills, formal education and soft skills could explain a small part of the employment gap between short-term and long-term unemployed persons only. Hence, providing courses that aim at increasing skills of the individuals (at least in Germany) may reduce the employment gap, but the scope is limited. Moreover, this may explain why training programs in Europe and particularly in Germany are not more successful in employment integration of participants. Second, differences in obstacles to employment measured in terms of substance abuse, financial debts or care obligations are crucial. If long-term unemployed persons would be equal in characteristics to the short-term unemployed, the employment gap between both groups would be clearly more narrow. Third, differences in the state of health and in particular limitations in working ability account largely for the employment gap. For this reason, policy makers should spend more attention on the last two findings when designing the placement process. Moreover, the set of active labor market programs should be revised addressing these aspects in order to increase employability of the participants.

The paper is organized as follows: Section 2 provides a short description of active labor market policy. The econometric methodology applied to the data to decompose the employability gap is introduced in section 3. A description of the data including descriptive statistics of the sample is presented in section 4. The empirical results are given in section 5. The final section concludes.

2 Active Labor Market Programs - A Short Description

A high and persistent unemployment in most OECD countries since the 1970 lead to a shift from passive to active labor market policy. Active labor market programs comprise a range of policies aimed at improving the access of the unemployed to the labor market and jobs, job-related skills and the functioning of the labor market (Martin and Grubb, 2001). European countries mainly employ four categories of activities, namely *training* covering measures intended to increase human capital skills, *private sector incentive schemes*, e.g. start-up incentives, *supported employment programs* in the public sector, and *services and sanctions* to improve job search efficiency (Kluve, 2006). Table 1 summarizes expenditures on a selection of labor market policy activities for a set of OECD countries

in 2006. The figures indicate that countries differ in generosity. Whereas continental European countries like Austria, Belgium, France, Germany, Spain, and Sweden pay more than 2 percent of annual GDP on labor market policy, in Anglo-American countries the expenditures are below 1 percent. In addition, the figures obtain a different priority given to active measures. Whereas the Scandinavian countries and the UK allocate a larger share of GDP to active than to passive programs, the picture is reversed for the other countries and expenditures for passive measures are almost twice that for active measures. With regards to the policy mix of active measures, most continental European countries emphasize training programs over supported employment, direct job creation, and start-up incentives programs.

Table 1: Public Expenditures on Labor Market Policy in Selected Countries (2006)[a]

	Country												
	AUS	Austria	Belgium	Canada	France	Germany	Italy	Norway	Spain	Sweden	CH	UK	US
Programmes													
PES and administration[b]	0.19	0.17	0.21	0.15	0.24	0.27	0.09	0.12	0.13	0.23	0.13	0.37	0.03
Training	0.01	0.40	0.20	0.08	0.29	0.33	0.22	0.26	0.16	0.33	0.23	0.02	0.05
Supported employment and rehabilitation	0.05	0.04	0.12	0.02	0.07	0.01	0.00	0.13	0.02	0.20	0.23	0.01	0.03
Direct job creation	0.07	0.04	0.35	0.02	0.19	0.09	0.01	0.05	0.08	0.00	0.00	0.00	0.01
Start-up incentives	0.01	0.01	0.00	0.01	0.01	0.12	0.04	0.00	0.08	0.03	0.01	0.00	0.00
Total	0.85	2.10	2.90	0.90	2.32	2.97	1.32	1.08	2.24	2.32	1.42	0.61	0.38
thereof													
Active measures	0.34	0.71	1.09	0.31	0.92	0.88	0.53	0.58	0.80	1.36	0.67	0.42	0.14
Passive measures	0.50	1.39	1.81	0.60	1.39	2.09	0.79	0.50	1.43	0.96	0.75	0.19	0.24

[a] Public expenditure as a percentage of GDP. Source: *OECD.Stat*, web-resource
[b] PES = public employment services

Given the substantial expenditures accompanied by high unemployment resulted in concerns about the effectiveness of the activities. For that reason, there are a considerable number of studies evaluating the effects of the programs. However, deriving general conclusions is complicated as programs (and program effects) differ by country and, thus, generalizing findings from one country for any country is difficult. Comprehensive overviews on evaluation studies are given by Martin and Grubb (2001) and Kluve (2006).[4] With regards to the effectiveness, the overall picture is not very encouraging. Martin and Grubb (2001) conclude that only counseling and job search assistance with increased monitoring, self-employment programs and hiring subsidies prove effectiveness. This conclusion is complemented by the results of Kluve (2006) conducting a meta-analysis that establishes modest positive effects for training programs. In contrast, direct employment programs are rarely effective and should be discontinued.

Germany provides a comprehensive system of labor market policy consisting of generous passive measures and a large number of active measures. Passive measures comprise unemployment benefits (*Arbeitslosengeld*, UB) and welfare benefits (*Arbeitslosengeld II*).[5] The major programs of

[4] In addition, an extensive discussion of the methodological issues for program evaluation is provided by Heckman, LaLonde, and Smith (1999).

[5] 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 pe-

the active measures are training, job search assistance programs, subsidized employment in public sector, programs aimed at integration in private sector (wage subsidies, loans to employers) and public employment services.[6] Each group of programs focusses on certain barriers to employment. Training programs, for example, should provide necessary human capital skills, subsidized jobs are intended to maintain the employability of the unemployed and improve the work experience. Job search activities should be encouraged by job search assistance programs combined with intensified monitoring and benefit sanctions.[7] Despite the variety of programs, problems potentially hampering employment integration like sickness, or substance abuse, financial debts, and care obligations are regarded marginally only. Programs have different eligibility criteria but in general job-seekers have to be entitled to unemployment or welfare benefits. Participation in active labor market programs is compulsory only if persons are referred to by the employment agency. While in the program persons are required to continue searching for a job.

How comparable is Germany's labor market policy to that of other countries? Despite the fact that many countries use similar programs, characteristics of the placement process are important for generalizing the findings.[8] As in Germany, in most countries registration at the employment agency is a precondition for placement and is followed by an intensive interview and an evaluation of an individual action plan. Moreover, requiring job seekers to report job search efforts frequently is common to most systems. With regards to participation in active labor market programs, only a small number of countries differ from the German system imposing compulsory participation after a certain duration of unemployment (Australia, Denmark, Sweden, UK). Continuing job search during participation is not required in many countries but Australia, Belgium, Czech Republic, Germany, New Zealand, Slovak Republic, Sweden, Switzerland and the US force participants to do so. All in all, Germany's labor market policy could be assessed to be similar to that of most other OECD countries. For that reason, analyzing the determinants of the employability gap using German data may provide general conclusion for the (re-)arrangement of active labor market programs.

riod 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. 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. 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.

[6] A description of Germany's active labor market programs is given in Bundesagentur für Arbeit (2007, Part II.E).

[7] Programs have been evaluated in a number of recent studies. E.g., Hujer, Thomsen, and Zeiss (2006b), Lechner and Wunsch (2008), and Biewen, Fitzenberger, Osikominu, and Waller (2006) analyze the effects of training programs. Thomsen (2007) provides an extensive analysis of subsidized employment in Germany. Job search assistance programs have been studied by Hujer, Thomsen, and Zeiss (2006a) and Lechner and Wunsch (2008).

[8] OECD (2007b, Chapter 5) summarizes important characteristics essential to the placement process in 29 OECD countries. See also the further extended materials in OECD (2007a).

3 Methodology

To estimate the underlying causes for different employment chances 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 (e.g. wages), 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

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

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[9]:

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

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

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

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

[9] 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.

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

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

if $N_s = N_l$ and a natural one-to-one matching of short-term and long-term unemployed observations is assumed. X_2 contains all variables in X except X_1. 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 2: Estimation Procedure

Step	Description
1.	Calculate predicted probabilities $\hat{Y}_i$ base on pooled coefficient estimates for each observation in long-term unemployment and short-term unemployment sample
2.	Draw random sub-sample of the larger sample equal in size to the smaller sample
3.	Rank observations according to predicted probability $\hat{Y}_i$ separately 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) 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 1,000 times and use the mean value of the estimates as the results for the entire larger sample. Table

2 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

The empirical analysis is based on merged register and survey data of short- and long-term unemployed persons in Germany. Information was collected 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.[10] The original sample contained 3,841 equally shared short- and long-term unemployed persons in August 2006. To consider urban and rural regions in East and West Germany a geographical stratification was imposed. Only people aged 18 to 57 were regarded in the survey. People aged 58 could choose a so-called relaxed benefit entitlement. Within this scheme they are no more required to actively search for employment, but could remain on welfare benefits until retirement age. A further precondition on the sample is work ability. All persons, independently if short-term or long-term unemployed were registered as work able and available to the labor market at the employment agencies. For this reason, every person in the sample could be expected to get employed.

The survey's purpose was 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. Besides this, from register data information on age, region, level of education and employment state is added. The questionnaire of the proprietary survey contains 48 questions that could be categorized by content in the following categories.

(i) **Labor market state and employment history:** Questions of this category comprise, e.g., the duration of unemployment (in categories), labor market state before actual unemployment, and the type of benefits received. The information of this category is used to distinguish short-term and long-term unemployed persons in the empirical analysis, where long-term refers to a duration of unemployment of more than 12 months.

(ii) **Skills:** Self-assessed information on elementary skills, e.g., reading and writing ability, calculating, internet knowledge are measured in grades ranging from 1 (very good) to 6 (insufficient). For the analysis, these variables have been recoded to three grades (poor/sufficient/good). Moreover, the level of formal education is considered in three classes (low/medium/high). Soft skills comprise willingness to learn, accuracy in working behavior and capacity for teamwork, besides others. Information on personality measures whether the individual is socially integrated or is willing to take responsibility for actions.

[10] The data were collected within a project on behalf of the German Federal Ministry of Employment. Due to legal restrictions register information on employment states is available for February 2007 only. The project was finalized in 2007 making amendments of the data impossible. Nevertheless, the available information enables a decomposition of employability determinants in the medium-run, i.e. six months after the interview.

(iii) **Obstacles to employment:** Questions of this category address whether integration into employment is hampered due to care obligations for children or frail elderly, substance abuse (including alcohol), or financial debts. Whereas care obligations or substance abuse diminish the employment chances due to limitations of time or health, financial debts of persons provide an obstacle to employment if persons expect a common garnishment of wages when working. In that case, expected utility of work may be smaller than that of unemployment leading to an increase of unemployment duration. To mitigate this problem, the German legislator offers a personal bankruptcy scheme. In this scheme, persons have to defer a pre-defined amount of their income for a period of six years. The sum of this deferral is below the debts of the individual. After that time they are clear of debts.

(iv) **Health conditions:** Characteristics are surveyed in terms of the actual state of health, certain health limitations and the amount of hours the person is able to work per day (as a categorical variable).

(v) **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-term and long-term unemployed persons as it conveys usually unobservable information of the individual. Persons may have quite realistic expectations about their situation and their job finding chances on average, 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. Ignoring anticipation may lead to biased estimates as observed employment rates are due to a different distribution of persons reporting good and bad chances in the groups of short-term and long-term unemployed (see, e.g., van den Berg, 2001). In the empirical analysis, a binary variable indicating good job chances (people report finding a job is *likely* or *very likely*) is regarded as an additional regressor capturing usually unobservable information about motivation, self-assessed marketability, work habits and self-esteem of the individual to remove the problem of selection on unobservable variables.

(vi) **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, and the types of job search channels, e.g., reading job advertisements in newspaper or writing unsolicited applications. 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, i.e. a wage about 20 percent below the last wage, to commute for up to 1.5 hours to the new working place and to accept a job below the individual's qualification.

(vii) **Social stability:** The situation of the individual within her social environment and her peer-group is described by items like job loss occurred due to social instability, the size of the peer-group (knowledge of other unemployed persons in a similar situation) or support received from the employment agency to mitigate problems.

(viii) **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. Variables included in this category cover the imposition of benefit sanctions and a participation in several types of active labor market programs.

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

Some restrictions on the data have to be imposed for the empirical analysis. To decompose the employability gap in order to identify determinants of employment and using these results for recommendations on the use and set-up of active labor market programs, the problem of potentially endogenous variables has to be considered. Endogenous variables may lead to biased estimates as they are likely to be not policy invariant or not causal for employment. For that reason, not all of the variables described above could be used in the estimation, e.g., the number of job applications or the number of job search channels employed (that are expected to be time-variant and could be affected by the caseworker). In an ideal case, employment probabilities of short-term and long-term unemployed persons would be decomposed without any active labor market program at all. Unfortunately, the real world looks different and a significant share of persons participate in a program during the unemployment spell, see Table 3. Moreover, the results show that the probability of participation increases with unemployment duration. In that context it has to be noted that addressing the complex variety of different active labor market programs in Germany is not feasible in a survey. Therefore, people were asked about the type of activity provided. These categories comprise, e.g., vocational training courses, self-employment or subsidized employment. For that reason, reported participation may not compellingly correspond to the programs offered by the Federal Employment Agency and shares denoted may exceed official figures. To avoid biased estimates, persons with active labor market participation are removed from the analysis.

Table 3: Shares of Persons with Participation in Different Active Labor Market Programs[a]

	Men			Women		
	Short-term Unemployed	Long-term Unemployed	p-value[b]	Short-term Unemployed	Long-term Unemployed	p-value[b]
Benefit sanctions	0.131	0.147	0.313	0.087	0.116	0.045
Vocational training	0.185	0.281	0.000	0.200	0.244	0.028
Support for self-employment	0.075	0.041	0.001	0.043	0.031	0.187
Subsidized employment	0.092	0.374	0.000	0.058	0.330	0.000

[a] It has to be noted that multiple participation of persons is possible. Information refers to period before interview.
[b] p-value from t-test on equality of means of variable for short-term and long-term unemployed.

A similar issue relates to provisions for those among the unemployed who are sick, who have trouble with substance abuse, or have care responsibilities at home. However, although employment agencies could offer support in these cases, caseworkers intervene much more infrequently. Table 4 provides a cross-tabulation of self-reported obstacles to employment and whether or not the person received

support from the employment agency in absolute numbers of the original sample. The results show that the number of persons reporting problems in any of the three categories is higher than the number of cases where these issues are addressed. Moreover, provision of support does not necessarily correlate highly to the needs reported by the individual. Whereas the latter finding may be partly induced by a different perception on side of the caseworker, the former indicates scope or requirement for an expansion of these activities. Given the relatively small share of persons reporting problems compared to persons receiving active labor market programs problems a lack of places available could be expected of minor importance only. Again, to allow consistent estimation persons receiving support from the employment agency are excluded from the analysis.

Table 4: Obstacles to Employment[a]

		Men						Women					
		Short-term Unemployed			Long-term Unemployed			Short-term Unemployed			Long-term Unemployed		
		Support received from employment agency											
		no	yes	total	no	yes	total	no	yes	total	no	yes	total
Financial debts	no	1,171	22	1,193	740	26	766	940	14	954	718	20	738
	yes	35	5	40	85	7	92	17	4	21	33	4	37
Substance abuse	no	1,181	12	1,193	769	13	782	940	6	946	708	8	716
	yes	36	4	40	75	1	76	27	2	29	57	2	59
Care obligation	no	1,115	17	1,132	773	20	793	807	17	824	559	22	581
	yes	99	2	101	61	4	65	147	4	151	184	10	194

[a] Table provides cross-tabulation of self-reported obstacle to employment (due to financial debts, substance abuse and care obligation) and support received from employment agency with respect to the respective type of obstacle. Total denote row sum of persons reporting the respective obstacle.

To describe the remaining sample for the analysis, Table 5 compares means of selected variables between short-term and long-term unemployed persons. In addition, p-values of t-tests on equality are added to allow for a meaningful discussion of differences. The first thing to note it that employment integration about six months after the interview differs significantly between short-term and long-term unemployed persons independently of gender, where long-term unemployed are worse off. With regards to gender, women experience lower employment rates than men. Regarding the characteristics covering skills (soft skills, education, and elementary skills) shows that men with different unemployment durations are more homogeneous a group than women. Soft skills do not differ much independently of gender but long-term unemployed men possess lower soft-skills, i.e. capacity for teamwork or working accuracy. With regards to formal education, long-term unemployed women tend to have a lower education. Considering elementary skills reveals a similar pattern. In contrast, men with different unemployment durations only differ slightly in these aspects. For the remaining characteristics comprising personality, experience and network, obstacles to employment, health, working ability, and concessions for a new job differences in means are similar for men and women. The results show less favorable characteristics of the long-term unemployed. However, the question to be answered is in how much these differences account for different employment chances. This will be analyzed in the next section.

Table 5: Means of Selected Variables

	Men			Women		
	Short-term Unemployed	Long-term Unemployed	p-value[a]	Short-term Unemployed	Long-term Unemployed	p-value[a]
employment[b]	0.318	0.097	0.000	0.245	0.067	0.000
Soft skills						
capacity for teamwork	0.976	0.934	0.001	0.980	0.960	0.077
learning aptitude	0.953	0.924	0.074	0.960	0.957	0.801
working accuracy	0.981	0.958	0.045	0.987	0.977	0.265
Education						
low-skilled	0.487	0.550	0.074	0.446	0.543	0.006
medium-skilled	0.362	0.336	0.435	0.439	0.363	0.029
high-skilled	0.151	0.114	0.135	0.114	0.093	0.335
Elementary skills						
reading (satisfactory)	0.157	0.190	0.198	0.080	0.133	0.010
reading (good)	0.836	0.772	0.018	0.917	0.863	0.011
writing (satisfactory)	0.294	0.304	0.743	0.186	0.227	0.147
writing (good)	0.694	0.661	0.308	0.811	0.747	0.026
calculating (satisfactory)	0.273	0.326	0.096	0.347	0.406	0.082
calculating (good)	0.716	0.649	0.038	0.635	0.564	0.039
internet (satisfactory)	0.272	0.291	0.549	0.240	0.303	0.043
internet (good)	0.552	0.412	0.000	0.536	0.357	0.000
Personality						
responsibility	0.976	0.938	0.003	0.983	0.967	0.107
socially integrated	0.789	0.664	0.000	0.794	0.683	0.000
Experience and network						
work experience	0.775	0.668	0.000	0.748	0.547	0.000
social network	0.612	0.457	0.000	0.592	0.507	0.015
Obstacles to employment						
substance abuse	0.013	0.059	0.000	0.020	0.057	0.003
financial debts	0.031	0.111	0.000	0.012	0.053	0.000
care obligations	0.077	0.069	0.681	0.167	0.250	0.003
Health						
health (poor)	0.064	0.190	0.000	0.085	0.193	0.000
health (satisfactory)	0.207	0.266	0.042	0.186	0.263	0.007
health (good)	0.730	0.543	0.000	0.730	0.543	0.000
Working ability						
less than 3 hours	0.001	0.035	0.000	0.010	0.027	0.056
3 to 6 hours	0.018	0.090	0.000	0.085	0.183	0.000
6 to 8 hours	0.069	0.111	0.032	0.191	0.263	0.012
8 and more hours	0.911	0.765	0.000	0.715	0.527	0.000
Concessions for a new job						
workplace far away	0.533	0.595	0.077	0.408	0.473	0.062
job below (formal) qualification	0.743	0.851	0.000	0.824	0.887	0.015
change of occupation	0.388	0.394	0.862	0.272	0.273	0.966
significantly lower wage than last job	0.238	0.433	0.000	0.240	0.433	0.000
Socio-demographics						
no. of persons in household	2.498	2.519	0.930	2.692	2.823	0.691
18 to 24 years	0.112	0.028	0.000	0.123	0.043	0.000
25 to 34 years	0.248	0.253	0.884	0.250	0.237	0.652
35 to 44 years	0.297	0.277	0.530	0.282	0.303	0.504
45 to 57 years	0.343	0.443	0.003	0.345	0.417	0.035
Regions						
West Germany, urban	0.248	0.273	0.411	0.270	0.253	0.586
West Germany, rural	0.214	0.211	0.914	0.224	0.253	0.325
East Germany, urban	0.281	0.239	0.179	0.270	0.240	0.329
East Germany, rural	0.257	0.277	0.523	0.235	0.253	0.556
Self-assessed job chances						
Good job chances	0.217	0.052	0.000	0.192	0.053	0.000
No. of observations	677	603		289	300	

[a] p-value from t-test on equality of means of variable for short-term and long-term unemployed.
[b] Employment in February 2007.

5 Estimation Results

According to the differences between groups revealed above, estimation of the determinants of the employability gap is carried out in five separate decompositions. In the first decomposition the employment gap between short-term and long-term unemployed persons is analyzed in the full sample, i.e. men and women are pooled with an intercept to distinguish gender effects. However, employment probabilities of men and women could be expected to differ. Therefore, I decompose the gap separately for men (decomposition two) and women (decomposition three). Based on these three decompositions the central question of the paper is answered. In addition, two further estimations decomposing the employability gaps of women and men for short-term unemployed (decomposition four) and long-term unemployed (decomposition five) are added in order to test the model specification, i.e. whether the variables included are able to explain the employability gap.

Table 6 provides the results of the decomposition of the employment gap for the five groups. The upper panel of the table shows the employment rates for the distinct groups in comparison where group 1 refers to the short-term unemployed (models 1 to 3) or men (4 and 5).[11] In addition, the difference in job finding chances is given as well as the part that could be explained by differences in attributes. In the whole sample, about 28 percent of the short-term unemployed persons have found a job within six months after the interview compared to about 8 percent of the long-term unemployed. In consequence, the gap in employment chances amounts to about 20 percent. With regards to gender the employment gaps amount to about 18 percentage points for women and 22 percentage points for men. All in all, about 32 percent of the gap for men and about 37 percent of the gap for women could be explained by differences in endowments. The remaining differences are due to a different valuing of the attributes. One reason for this different valuing may be statistical discrimination by potential employers. However, as it is impossible to interpret these price effects of characteristics in a sensible manner, the discussion concentrates on the differences in endowments.

The lower panel provides contributions to the employability gap from the explanatory variables. Below the coefficient estimates the contributions in percent are given for ease of interpretation. To abbreviate presentation, the effects of similar characteristics are summarized. 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. 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, or Lechner and Wunsch, 2008 for Germany, and Martin and Grubb, 2001, or Kluve, 2006, for a summary on international experiences). A reason for the unsatisfactory effects of the programs could be derived from the estimates here. Although short-term and long-term unemployed persons differ in *elementary skills* (reading, calculating and internet) and *(formal) education* (medium- and high-skilled), these differences could explain only a small fraction of the difference in the gap of job

[11] Table A.1 in the Appendix provides the estimates of the logit models on employment for the five decompositions.

Table 6: Non-linear Decomposition of the Employment Gap

	Full Sample	Men	Women	Short-term Unemployed	Long-term Unemployed
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
	% expl.	% expl.	% expl.	% expl.	% expl.
Employment (group 1)	0.2836	0.3176	0.2454	0.3176	0.0972
Employment (group 2)	0.0819	0.0972	0.0671	0.2454	0.0671
Difference	0.2017	0.2204	0.1783	0.0721	0.0301
Total explained	0.0780	0.0704	0.0662	0.0718	0.0369
	38.68%	31.96%	37.11%	99.53%	122.70%
Contributions from differences in[a]					
Soft skills	0.0047***	0.0092**	0.0017	-0.0011	0.0037
	2.31%	4.17%	0.96%	-1.55%	12.17%
Elementary skills	0.0062	-0.0002	0.0124**	0.0062	0.0109
	3.09%	-0.09%	6.94%	8.61%	36.18%
Education	0.0026	0.0049*	0.0017	-0.0015	-0.0021
	1.29%	2.20%	0.94%	-2.09%	-7.01%
Personality	0.0009	0.0010	0.0002	0.0001	0.0022*
	0.45%	0.47%	0.13%	0.13%	7.16%
Work experience and	0.0109**	0.0137**	0.0089	0.0018*	0.0012
social network	5.39%	6.20%	4.98%	2.43%	3.90%
Substance abuse	0.0046**	0.0050	–	0.0005	–
	2.28%	2.29%	–	0.67%	–
Financial debts	0.0034	0.0082	-0.0016	-0.0009	-0.0009
	1.69%	3.70%	-0.91%	-1.29%	-2.92%
Care obligation	0.0048***	-0.0004	0.0109***	0.0090***	0.0119
	2.39%	-0.19%	6.13%	12.41%	39.60%
Health	0.0081*	0.0075	0.0090	0.0008	-0.0013
	4.01%	3.39%	5.06%	1.12%	-4.20%
Work ability					
less than 6 hours	0.0089***	–	0.0062	0.0062**	0.0057**
	4.41%	–	3.46%	8.65%	18.98%
6 to 8 hours	0.0083***	0.0042*	0.0092**	0.0129***	0.0086
	4.10%	1.89%	5.16%	17.83%	28.71%
Concessions for new job	0.0002	0.0008	-0.0018	-0.0045	0.0021
	0.08%	0.36%	-1.00%	-6.25%	6.99%
No. of persons in hh	0.0031	0.0068	0.0012	-0.0015	-0.0030
	1.55%	3.09%	0.68%	-2.04%	-9.92%
Age	0.0020	-0.0032	0.0064	-0.0003	0.0005
	0.99%	-1.43%	3.61%	-0.41%	1.55%
Region	-0.0006	-0.0013	-0.0003	-0.0004	-0.0013
	-0.31%	-0.57%	-0.18%	-0.55%	-4.43%
Good job chances	0.0083*	0.0142*	0.0019	0.0020**	–
	4.14%	6.43%	1.09%	2.81%	–
Women	0.0015	–	–	0.0425	-0.0012
	0.77%	–	–	58.97%	-3.87%

[a] 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).

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

finding rates. In the full sample, only about 1.29 percent of the gap are explained by differences in education and another 3.09 percent by differences in elementary skills. Moreover, educational differences play a role for the long-term unemployed men, but not for women. In elementary skills, the picture is reversed with respect to gender. These results clarify that the focus of active labor market policy on reducing these deficits for long-term unemployed persons with training programs could increase the employment chances only slightly. This could, at least in part, explain why vocational training programs in Germany are not more successful in integrating unemployed persons into the labor market. In addition, observed differences in *soft skills* (capacity of teamwork and

learning aptitude) do not contribute to the employability gap either, i.e. actual job finding chances are not lower for long-term unemployed persons due the lower level of soft skills they possess.

Differences in work experience and the size of the social network explain further 5.39 percent (full sample) of the gap. This result is stable for both gender (6.20 percent for men, 4.98 percent for women). According to theory, work experience constitutes an important part of human capital skills. In addition, the size of the network is relevant for job finding as many workers find jobs through relatives or friends (see, e.g., Montgomery, 1991). With respect to active labor market programs this results indicate that increasing work experience of the unemployed should be positively correlated with employment probability. In that manner, subsidized employment programs are offered in many countries providing opportunities to gain experience for unemployed persons. However, recommending a use of these programs from the result requires a look on existing evaluations of those programs. Two types of subsidized employment could be distinguished: on the one hand, programs in private firms, on the other hand, programs in public or non-profit institutions. Empirical evaluations show that both types coincide with certain problems. Whereas subsidized programs in private firms could have positive effects in terms of employment chances for the individual (see, e.g., Forslund, Johansson, and Lindqvist, 2004, for Sweden or Rosholm and Svarer, 2004, for Denmark), they could impose deadweight losses when hirings from the target group would have occurred even in the absence of the program or substitution effects if jobs created for a certain category of workers simply replace jobs in other (regular) categories (Calmfors, 1994). To avoid these negative effects, Germany for example allows subsidized employment in private firms under rigorous conditions only, and the vast majority of subsidized jobs is provided in the non-market sector. A drawback of these jobs is that skills and work experience provided are unequal to that of private jobs as activities accomplished are not demanded by the market. In line with that, evaluations of the effects draw a disappointing picture with respect to employment integration (see, e.g. Thomsen, 2007, for Germany or Lorentzen and Dahl, 2005, for Norway).

Employment agencies already try to substitute missing social networks by provision of activities like job search monitoring or intensive counseling. If successfully imitating the virtue of social networks, these programs could decrease the employability gap between both groups and, therefore, raise the employment chances of the long-term unemployed. As these programs are less expensive compared to traditional training courses, they could provide a cost-effective means to reduce unemployment. In line with that, a number of studies have validated positive effects of these programs, for example Blundell, Costa Dias, Meghir, and van Reenen (2004) for the UK, Crépon, Dejemeppe, and Gurgand (2005) for France or Hujer, Thomsen, and Zeiss (2006a) for Germany.

Compared to differences in skills, differences with respect to characteristics appointing *obstacles to employment* (substance abuse, financial debts, care obligations) account for a larger part of the employability gap. Summing up the single contributions of the variables in this category explains about 6.36 percent in the full sample. This means that if long-term unemployed had the same amount of obstacles to employment as the short-term unemployed this would reduce the employment gap of 20.17 percent by about 1.28 percentage points which is more than twice eliminating differences in elementary skills. Among the characteristics in this group, care obligations for children or frail

elderly contribute largest to the gap, followed by substance abuse (including alcohol) and financial debts (that are significant only in the full sample). The separate decompositions by gender show some heterogeneity. Whereas care obligations do not play a role for men they are very important for women. In addition, a large part of the gap for men could be explained by financial debts. As noted above, financial debts could hamper employment integration if persons expect a common garnishment of their wages. Substance abuse (including alcohol) is not relevant for women but all the more for men. These findings are very important since active labor market programs do rarely (if at all) take account of these issues. As shown above, only a small fraction of persons receives support from employment agencies with these problems. The estimates provide empirical evidence that spending more attention on these aspects and providing activities that mitigate the level or circumvent that these problems constitute over the unemployment spell would reduce the employment gap between short-term and long-term unemployed significantly.

Furthermore, differences in health conditions comprising the ability to work a full day determine 12.52 percent (full sample), 5.28 percent (men) and 1.38 percent (women) of the gap. That means that if long-term unemployed were equal in health and working ability to the short-term unemployed the employment gap of 20.17 percent would be 2.53 percentage points narrowed. Whereas the state of health is important for men, differences in work ability explain the majority of the gap for women with a clearly larger contribution than that of skills or education. Health conditions and working ability are crucial for job finding chances. Compared to the differences in elementary skills and education, health differences and differences in the working ability are more important and policy makers should focus on programs improving the physical (and mental) health of the unemployed in order to increase employment chances. A reason for the work ability problems for women may be a lack of part-time jobs and of jobs with flexible working hours. Thus, creating more flexible jobs and/or mitigating care obligations for women could reduce the gap. In light with the dissatisfying outcomes of many active labor market programs aiming to improve human capital skills, a reorganization of the activities may be arranged at no increase of costs.

The number of *persons living in the household* (persons in household, persons in household squared) explains some part of the gap for men. Moreover, an *age* (age groups) effect could be established for women. Independently of gender differences between long-term and short-term unemployed persons in regards to *personality* (responsibility, social integration) or willingness to make *concessions for a new job* (work place far away, job below formal qualification, change of occupation, lower wage) do not affect the probability of getting a job. Improving those aspects, therefore, will imply hardly any effect. Finally, models 4 and 5 have been estimated to provide a check of the explanatory power of the model when time effects are eliminated. Independently of unemployment duration the variables included in the model are able to explain the variation in the outcomes almost perfectly. The largest part is explained by gender differences or attributes that correlate with these differences (care obligations, differences in elementary skills, or work ability).

6 Conclusion

To lower the risk of long-term unemployment and to reduce the level of unemployment governments in many OECD countries offer various active labor market policy programs. However, evaluations of the effects of these programs have shown that the majority of the activities lead to at best modest 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 and so-called locking-in effects overcompensate positive program effects, or placement of job-seekers to available programs could be inefficient. Indeed, as a further reason programs' effectiveness could suffer from inadequate design to meet the needs of the job-seekers.

The aim of this paper was to identify job-seekers' needs conditional on the job-finding chances. Knowing about the determinants of employability differences between short-term and long-term unemployed persons could help to (re-)arrange programs concentrating on factors of crucial relevance for labor market success. Having access to unique information including usually unobservable items like self-reported job chances, substance abuse, financial debts, care obligations, limitations of working ability of the job-seeker the employment gap has been decomposed into effects due to differences in endowments and effects due to a different valuing of these differences.

The results show that skill differences are an important source of the employment gap but the scope of increasing the employment chances of long-term unemployed by increasing human capital is 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) or Lechner and Wunsch (2008).

Far more relevant for the differences in employment between short-term and long-term unemployed persons are differences in terms of obstacles to employment like substance abuse, financial debts or care obligations for children or frail elderly. Reducing the problem in the group of long-term unemployed persons or circumvention of the formation of these problems over the unemployment spell could reduce the difference in employment, and, thus, increase the employment chances of the long-term unemployed. A further important finding refers to state of health and differences in the working ability of the groups. Mitigating the differences in these characteristics between both groups by offering programs intended to improve physical and/or mental health and creating jobs with flexible working times could narrow the employment gap as well. Up to now, however, these latter aspects are only marginally (if at all) regarded within the placement process in many countries. Revising the goal and purpose of active labor market programs with an explicit consideration of these findings, therefore, could be expected to be of value for employment integration of unemployed persons and reducing the number of long-term unemployed people.

References

Bartel, A., and P. Taubman (1979): "Health and Labor Market Success: The Role of Various Diseases," *Review of Economics and Statistics*, 61(1), 1–8.

Berger, M. C., D. Black, and J. A. Smith (2001): "Evaluating Profiling as a Means of Allocating Government Services," in *Econometric Evaluation of Labour Market Policies*, ed. by M. Lechner, and F. Pfeiffer, vol. 13 of *ZEW Economic Studies*, pp. 59–84. Physica-Verlag, Heidelberg.

Biewen, M., B. Fitzenberger, A. Osikominu, and M. Waller (2006): "Employment Effects of Short and Medium Term Further Training Programmes in Germany in the Early 2000s," Working Paper, Goethe University Frankfurt.

Blinder, A. S. (1973): "Wage Discrimination: Reduced Form and Structural Variables," *Journal of Human Resources*, 8, 436–455.

Blundell, R., M. Costa Dias, C. Meghir, and J. van Reenen (2004): "Evaluating the Employment Impact of a Mandatory Job Search Assistance Program," *Journal of the European Economic Association*, 2(4).

Bundesagentur für Arbeit (2007): *Arbeitsmarkt 2006*vol. 55 of *Amtliche Nachrichten der Bundesagentur für Arbeit*, Nuremberg.

Calmfors, L. (1994): "Active Labour Market Policy and Unemployment - A Framework for the Analysis of Crucial Design Features," *OECD Economic Studies*, 22, 7–47.

Contoyannis, P., and N. Rice (2001): "The Impact of Health on Wages: Evidence from the British Household Panel Survey," *Empirical Economics*, 26(4), 599–622.

Crépon, B., M. Dejemeppe, and M. Gurgand (2005): "Counseling the unemployed: does it lower unemployment duration and recurrence?," Working Paper No. 2005-27, Paris-Jourdan Sciences Economiques.

Cutler, D. M., and E. Glaeser (2005): "What Explains Differences in Smoking, Drinking, and Other Health-Related Behaviors?," *American Economic Review (Papers and Proceedings)*, 95(2), 238–242.

Fairlie, R. W. (2005): "An extension of the Blinder-Oaxaca decomposition technique to logit and probit models," *Journal of Economic and Social Measurement*, 30, 305–316.

Forslund, A., P. Johansson, and L. Lindqvist (2004): "Employment Subsidies - A Fast Lane from Unemployment to Work?," Working Paper 2004:18, IFAU, Uppsala.

Gill, A. M., and R. J. Michaels (1992): "Does Drug Use Lower Wages?," *Industrial and Labor Relations Review*, 45(3), 419–434.

Gomulka, J., and N. Stern (1990): "The Employment of Married Women in the United Kingdom 1970-83," *Economica*, 57, 171–199.

Heckman, J. J., R. J. LaLonde, and J. A. Smith (1999): "The Economics and Econometrics of Active Labor Market Programs," in *Handbook of Labor Economics*, ed. by O. Ashenfelter, and D. Card, vol. 3A, chap. 31, pp. 1865–2097. Elsevier, Amsterdam.

Hujer, R., S. L. Thomsen, and C. Zeiss (2006a): "The Effects of Short-Term Training Measures on the Individual Unemployment Duration in West Germany," Discussion Paper No. 06-65, ZEW, Mannheim.

——— (2006b): "The Effects of Vocational Training Programmes on the Duration of Unemployment in Eastern Germany," *Allgemeines Statistisches Archiv*, 90(2), 299–322.

Jann, B. (2007): "FAIRLIE: Stata module to generate nonlinear decomposition of binary outcome differentials," Stata module. Statistical Software Components, Boston College Department of Economics.

Kluve, J. (2006): "The Effectiveness of European Active Labor Market Policy," Discussion Paper No. 2018, IZA, Bonn.

Lechner, M., and J. Smith (2007): "What is the Value Added by Caseworkers," *Labour Economics*, 14(2), 135–151.

Lechner, M., and C. Wunsch (2008): "What Did All the Money Do? On the General Ineffectiveness of Recent West German Labour Market Programmes," *Kyklos*, 61(1), 134–174.

Levine, P. B., T. A. Gustafson, and A. D. Velenchik (1997): "More Bad News for Smokers? The Effects of Cigarette Smoking on Wages," *Industrial and Labor Relations Review*, 50(3), 493–509.

Lorentzen, T., and E. Dahl (2005): "Active Labour Market Programmes in Norway: Are They Helpful for Social Assistance Recipients?," *International Journal of Social Welfare*, 14, 86–98.

Martin, P., and D. Grubb (2001): "What Works and for Whom: A Review of OECD Countries Experiences with Active Labour Market Policies," *Swedish Economic Policy Review*, 8, 9–56.

Montgomery, J. D. (1991): "Social Networks and Labor-Market Outcomes: Toward an Economic Analysis," *The American Economic Review*, 81(5), 1408–1418.

Oaxaca, R. (1973): "Male-Female Wage Differentials in Urban Labor Markets," *International Economic Review*, 14, 693–708.

Oaxaca, R., and M. Ransom (1994): "On discrimination and the decomposition of wage differentials," *Journal of Econometrics*, 61(1), 5–21.

OECD (2007a): "Activating the Unemployed: What Countries Do: Further Material," http://www.oecd.org/dataoecd/53/41/38976231.pdf.

OECD (2007b): *OECD Employment Outlook*Paris.

Rosholm, M., and M. Svarer (2004): "Estimating the Threat Effect of Active Labor Market Programs," Working Paper No. 2004-06, University of Aarhus.

Stephan, G., S. Rässler, and T. Schewe (2006): "Wirkungsanalyse in der Bundesagentur für Arbeit - Konzeption, Datenbasis und ausgewählte Befunde," Discussion Paper No. 07/2006, IAB.

Thomsen, S. L. (2007): *Evaluating the Employment Effects of Job Creation Schemes in Germany*, vol. 36 of *ZEW Economic Studies*. Physica-Verlag.

van den Berg, G. J. (2001): "Duration Models: Specification, Identification, and Multiple Durations," in *Handbook of Econometrics*, ed. by J. J. Heckman, and E. Leamer, vol. 5, chap. 55, pp. 3381–3462. North-Holland, Amsterdam.

van Ours, J. C. (2004): "The Locking-In Effect of Subsidized Jobs," *Journal of Comparative Economics*, 32(1), 37–52.

Yun, M. (2004): "Decomposing differences in the first moment," *Economics Letters*, 82, 275–280.

——— (2005): "Hypothesis test when decomposing differences in the first moment," *Journal of Economic and Social Measurement*, 30, 295–304.

A Appendix

Table A.1: Logit Estimates on Employment for Different Samples

	Full Sample	Men	Women	Short-term Unemployed	Long-term Unemployed
	Coeff.	Coeff.	Coeff.	Coeff.	Coeff.
Soft skills					
capacity for teamwork	0.8565	1.0907	0.6006	0.4818	–
learning aptitude	0.7127*	0.6669	0.9250	1.3829**	-0.8864
Elementary skills (references: poor skills)					
reading (satisfactory)	1.5451	17.2537***	-1.3174	17.0048***	-0.5680
reading (good)	1.2757	16.9595***	-1.5113	16.8616***	-1.2472
calculating (satisfactory)	-0.6583	-0.2341	-0.9400	-1.0976*	16.3600***
calculating (good)	-0.1827	0.2156	-0.3769	-0.6319	16.8537***
internet (satisfactory)	0.1622	-0.0484	0.3220	-0.0071	0.9589*
internet (good)	0.1177	-0.2935	0.5947**	0.0110	0.6205
Education (reference: low-skilled)					
medium-skilled	0.2363	0.2596	0.1833	0.2187	0.6203
high-skilled	0.2432	0.4522*	-0.0764	0.2655	0.4921
Personality					
responsibility	0.1332	-0.0977	0.3381	0.4833	-0.1138
socially integrated	0.0256	0.0724	-0.0314	0.1197	-0.4563
Experience and network					
work experience	0.2316	0.2857	0.2020	0.1766	0.3454
social network	0.2319*	0.2709	0.2557	0.2378*	0.2687
Obstacles to employment					
drug abuse	-1.5585	-0.9636	–	-1.2227	–
financial debts	-0.4356	-0.6731	0.2904	-0.3433	-0.2378
care obligations	-0.7217***	-0.5238	-0.9007***	-0.6354***	-1.4633*
Health (reference: poor)					
health (satisfactory)	0.3036	0.2329	0.4688	0.2332	0.7178
health (good)	0.4293	0.3097	0.5916	0.3546	0.6966
Working ability (reference: 8 hours or more)					
less than 6 hours	-0.9116**	–	-0.5426	-0.7014*	-1.6616
6 to 8 hours	-0.6890***	-0.6355*	-0.6129**	-0.6873***	-0.6355
Concessions for a new job					
work place far away	-0.0767	-0.2055	0.0771	-0.1287	0.2673
job below qualification	-0.1604	-0.0839	-0.3312	-0.1872	0.2233
change of occupation	-0.1544	0.1565	-0.5267**	-0.2262	0.1667
significantly lower wage	0.1091	0.1081	0.1543	0.2138	-0.3704
Socio-demographics (reference age group: 18 to 24 years)					
women	-0.1785	–	–	-0.2272	0.0145
no. of persons in hh	0.1874	0.2311	0.1641	0.1587	0.4088
no. of persons in hh (squared)	-0.0274	-0.0319	-0.0223	-0.0213	-0.0849
25 to 34 years	0.0514	0.5341*	-0.3678	0.0003	-0.2592
35 to 44 years	-0.0419	0.3536	-0.3982	-0.0093	-0.8220
45 to 57 years	-0.1345	0.2230	-0.4447	-0.1410	-0.7266
Regions (reference: West Germany, urban)					
West Germany, rural	0.2208	0.0746	0.4442*	0.1165	1.0899**
East Germany, urban	-0.1366	-0.1789	-0.1128	-0.2164	0.4925
East Germany, rural	0.0302	0.1713	-0.2037	-0.0523	0.3184
Self-assessed job chances					
Good job chances	0.2677*	0.3851*	0.0844	0.3475**	–
Group[a]	-1.1219***	-1.1121***	-1.1347***	–	–
Constant	-4.3628***	-20.7372	-1.5385	-19.8514	-18.6195
pseudo R^2	0.1144	0.1018	0.1265	0.0674	0.1501
no. of obs.	1,841	916	864	1,273	487

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

[a] Group is a dummy taking value 1 if person in long-term unemployed in columns 1 to 3.