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Unemployment and occupational mobility at the beginning of employment career in Germany and the UK

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Abstract

The beginning of the employment career is often associated with phases of unemployment. We argue that unemployment has different implications for different educational groups on future employment career depending on institutional settings in the UK and Germany. While search and matching models argue that an unemployment phase might be used for an active job search and might result in a better position, human capital and signalling theory predict status losses. The strongly skill-based and rigid labour market in Germany creates a stigma attached to unemployment and therefore might have negative consequences upon the re-entry into the labour market for all educational groups. The 'trial and error' strategy at the beginning of an employment career in flexible labour markets is common and therefore search and matching models should predict positive outcomes in the UK, especially for high-educated persons. Using the German Socio-Economic Panel and British Household Panel we simultaneously estimate hazard rates and changes in the occupational status.

Zusammenfassung

Gerade am Anfang der Erwerbskarriere ist Arbeitslosigkeit keine Seltenheit. In diesem Artikel argumentieren wir, dass in Abhängigkeit von institutionellen Rahmenbedingungen Arbeitslosigkeit verschiedene Konsequenzen für die zukünftige Erwerbskarriere in Großbritannien und Deutschland hat. Während Such- und Matchingmodelle positive Effekte prognostizieren, sagen die Humankapitaltheorie und Signaltheorie negative Effekte voraus. Der berufsorientierte Arbeitsmarkt in Deutschland mit seinem starken Kündigungsschutz könnte zur Stigmatisierung von Arbeitslosen führen, was sich negativ auf die zukünftige Erwerbskarriere auswirken könnte. Die 'trial and error' Strategie in einem liberalen Arbeitsmarkt wie Großbritannien könnte dagegen die berufliche Position nach der Arbeitslosigkeit verbessern. Bei Auswertung der Daten werden GSEP und BHPS Datensätze benutzt und simultan die Hazardraten und die Veränderung im beruflichen Status geschätzt.

1 Introduction

The transition from school to work and the first years of an employment career is a turbulent and complex phase for young people. The flows between employment and unemployment are a part of allocation processes. While many studies consistently report high job mobility via unemployment at the beginning of the employment career, the implication of unemployment on future career for young people has been less investigated. In this study we argue that, depending on the institutional settings, the phase of unemployment might have different consequences for different educational groups.

In the UK unemployment is a part of an ongoing relocation process. Non-standardized, on-the-job training prevails and screening strategies on the job are common, which induces many job beginners in the UK to start their first job at a low occupational position. A high degree of mismatches combined with low employment protection legislation (EPL) allow many entrants to improve their occupational positions. However, we argue that only highly educated workers might improve their initial positions. Higher aspirations, higher levels of savings and better household support make the better educated more likely to wait until they find a job that improves their occupational position. In contrast, waiting for a better job offer might not be the best strategy for poorly educated workers, because of decreased demand for low skilled labour. In addition, the low level of unemployment benefits from previous salaries, the regime of sanctions linked to the right to receive unemployment benefits, and low household incomes push them to take the first available job.

A strongly skill- and occupation-based labour market with robust EPL creates a strongly segmented insider-outsider labour market in Germany that reduces inter-firm and inter-occupational mobility. The 'trial and error' strategy to improve initial positions in rigid labour markets is less common than in liberal countries. Thus, a phase of unemployment might have a negative impact on all educational groups.

This study contributes to research on job mobility in several aspects. While many studies have tested theoretical models without taking into account the institutional contexts that structure the labour market in Germany and the UK (Abbring/Berg/ Gautier/Lomwel/Ours 1998, Kahn/Low 1982, Boheim/Taylor 2000), we systematically discuss the impact of institutional settings of the British and German labour markets on different educational groups. Other studies do not differentiate between job beginners and older workers (Gangl 2006, Arulampalam 2001, Gregory/Jukes 2001). Since the mechanisms are different for job beginners and workers in their middle and later employment career, we discuss labour market theories for job beginners. Furthermore, studies on the effect of unemployment do not differentiate between educational groups. Since the meaning of unemployment phases might be different for different educational groups, we take a closer look at risk and chances of unemployment for different educational groups.

2 Institutional Settings

Institutional settings have important implications for job search and matching theories and for human capital and signalling theories. Production regimes, educational and vocational system, and EPL are usually identified as key elements of institutional settings when explaining outcomes for the labour market.

First we will discuss the differences in institutional settings between the UK and Germany. Starting with the educational system there are substantial differences early on, at the secondary education level. In the UK comprehensive schools for pupils dominate while in Germany the pupils are separated into three school forms (Hauptschule, Realschule and Gymnasium). While many attempts aiming at the standardization and centralization of general education in Great Britain (Steinmann 1998/1999) have been successfully implemented, the standardization of the vocational system can be considered a failure. The standardization and stratification of general education included cumulative qualifications, along with ability testing, hierarchy of higher educational institutions, a minimum school-leaving age, the introduction of comprehensive schools and of general school qualification, and most importantly, the launch of a national curriculum (Hillmert 2002). The standardization and stratification of vocational training proved difficult to achieve because in Great Britain, like in most uncoordinated market economies, collective actors pursued opposing interests. New measures were likewise met with disapproval from the public. In 1983, the government implemented the Youth Training Scheme (YTS) to facilitate the entry of poorly qualified youth into the labour market. At first glance, the program seems to have been successful, but a closer look reveals problems. The employers used the program as a screening strategy to identify promising workers and to hire them, instead of waiting until they ended their apprenticeships (Bynner 1999). Thus in practice, the information about young people's abilities was more important than their training. Furthermore, the vague content and considerable status variance of YTS failed to provide the employers with reliable information. Some efforts have been made to *classify and standardize* practical and transferable vocational skills (National Vocational Qualifications, NVQ) but these can also be considered a failure.

Germany is associated with an exceptionally tight linkage between individual education and job status (Diprete/Degraaf/Luijkx/Tahlin/Blossfeld 1997, Gangl 2004, Kurz/Buchholz/Schmelzer/Blossfeld 2008). The structure of the *vocational system* creates a strongly skill- and occupation-based labour market (Soskice 1999). Such a system trains the majority (about 65 per cent) of the German workforce and provides the labour market with skilled workers, which allows a smooth transition into the labour market. Since in coordinated market economies vocational training standards are partly arranged according to companies' requirements, employers refer to vocational certificates as signals for the employee's key qualifications. Employees use such qualifications as a basis for negotiations for acquiring a suitable entry wage offer. Both sides, employees and employers, are interested in a good match, which allows employees to offset their training costs and employers to save on-the-job training

costs. A high level of standardization lowers the risks of unintended job mismatches[1] and guarantees that acquired human capital will quickly be translated into high productivity.

Production regimes influence industrial relationships in types of work councils, collective bargaining systems, the coordination of vocational institutions, and employment protection legislation (EPL) (Diprete et al. 1997, Soskice 1999, Streeck 1984). In contrast to uncoordinated market economies, coordinated market economies like Germany are characterized by trust transactions (e.g., expressed by long-term financing of firms, functional flexibility of employees, cooperation between employees, firms, and educational institutions etc.) that foster employers' commitment to long-term relationships with their employees. Labour markets in economies with closed employment relations tend to separate the insiders from the outsiders (Sørensen 1983): insiders enjoy certain outcomes of negotiations between unions and employers while for outsiders it is rather difficult to become an insider. High EPL combined with elaborate legal constraints in Germany lead to more screening before hiring, as it is more costly for firms to fire 'bad' workers afterwards. Thus, in the German context, strongly skill-based allocation patterns and strong EPL provide adequate starting occupational positions for those with adequate job allocation. Furthermore, a strongly skill- and occupation-based labour market with elaborate legal constraints on employers generates a strongly segmented insider-outsider labour market that reduces inter-firm and inter-occupational mobility and fosters internal job promotions. Thus, the institutional context in Germany not only provides adequate occupational positions at the beginning of the employment career but also stabilizes earnings trajectories offering internal career ladders for those starting in appropriate positions.

The British employment system is classified as an uncoordinated market economy with decentralized and dualistic industrial relations. Low-trust relationships involve easily monitored and interchangeable workers who have limited scope for influencing firm-internal decisions (Soskice 1999) EPL in the UK is the weakest in Europe. Dismissals or redundancies in the UK are less costly than in Germany (in terms of time, money, and procedural complexity). Because of weak EPL and weak linkage between the vocational and occupational system the transition into the first job is relatively smooth. However, the flip side is the negative impact on the quality of the first job (Wolbers 2007). Since non-standardized, on-the-job training prevails and screening strategies are common, many job beginners start their first jobs in poor occupational positions. Firing costs in the UK and weak signals from academic and vocational certificates lead to more screening on-the-job and higher firing rates. Therefore, many job beginners might start their first jobs in inadequate and precari-

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[1]   Unintended job mismatch means that neither employee nor employer know whether the demands of the job correspond to the employee's skills;. intended job mismatches imply that both parties – employee and employer – are aware of the wrong allocation of an employee.

ous positions with the prospect of working their way up to better and more qualified positions.

On becoming unemployed low unemployment benefits and a strong sanction regime in the UK expose unemployed workers to economic pressure to accept the first available job regardless of its quality. By contrast in Germany low economic pressure allows them to search for a good job match. The replacement rates for unemployment are 0.37 in the United Kingdom and 0.66 in Germany for the average production worker (Scruggs 2005). However, one should bear in mind that many young unemployed are not yet eligible for unemployment benefits because they lack the necessary work experience.

In the last two decades, Germany and especially the UK have experienced a decline in the size of the traditional industrial and agricultural sectors. While at the beginning of the 1970s the UK and Germany displayed the same degree of industrialization (the share of industrial workers was about 35 %), this had already declined to 15 % in the UK and to 25 % in Germany by the year 2000. Lower qualified workers have borne the main burden of these changes. Rapid technological progress in manufacturing led to redundancies among low-qualified male workers in particular, because the manufacturing sector increased its output with fewer, but more highly-qualified workers. Empirical studies indicate that for every four to five manufacturing jobs that were lost in OECD countries through competition with low-wage countries, there was an average of one new manufacturing job created through the production of high-skill-based manufactured goods (Rowthorn/Ramaswamy 1999). The dramatic decline in demand for unskilled and low-skilled workers reduced demand for self-binding commitments by employers towards low-educated entrants and employers are reluctant to invest in low-educated employees (Breen 1997).

The decline of the manufacturing sector (and agriculture) was accompanied by the expansion of the service sector. At the end of the 1990s the proportion of jobs in the service sector was over three-quarters of all jobs (OECD 2000). Newly created jobs in the service sector become the employment domain of younger workers (Fagan/Halpin/O'reilly 2005). However, while highly educated people might have chances to keep up with the technological and structural changes or to switch to service jobs, these chances are very low for dismissed, poorly qualified industrial male workers (Fagan et al. 2005).

3 Hypotheses

In the following sections we discuss the search and matching models, and signal and human capital theories as they might apply to different educational groups in the institutional contexts of the UK and Germany.

We introduce two series of questions. In the first series of questions we discuss the chances of re-entering employment for different educational groups. Since for the first series of questions there is an abundant amount of literature, we will keep this section concise. In the second series we will focus on the post-unemployment occu-

pational status. Though both series represent two sides of the same coin we will discuss them separately.

3.1 Chances of re-employment

Duration of unemployment is usually discussed within the framework of search and matching theories using wages. This argumentation can be also utilized for occupational status. Job finding is a process of job offers arriving sequentially while workers have to decide whether to accept the current offer or to continue job search. In its dynamic version the optimal search strategy is to form an aspiration for occupational status (reservation wage) at the minimum acceptable offer (Mccall 1970, Jovanovic 1984). Job search proceeds as long as opportunities costs are low and as long as the job searcher expects to receive a better job offer. The job search stops when a job offer corresponds to the aspired job (reservation wage). Increasing opportunity costs and low chances of receiving an aspired job reduce the expectation towards the occupational status of the next job.

For better qualified persons we expect better re-entry chances than for the poorly qualified as deindustrialization, the growing importance of the service sector, and technological innovation have reduced the demand for low-educated workers (Breen 1997, Kurz et al. 2008). Therefore, waiting for the next job offer might not result in better outcomes for the poorly qualified. Furthermore, low-educated workers compete with the highly educated and in a labour market with an ample supply of labour, the low-educated might be crowded out to the end of the job queue by the better educated (Thurow 1975).

3.2 Occupational status after unemployment phase

Starting with *job search and matching models* an unemployment phase might be used for an active job search and might result in a better position (Kahn/ Low 1982).

Weak linkage between educational and employment system, the emphasis on formal education and screening on-the-job strategy enhance the probability of unintended (and intended) job mismatches in the UK which results in low starting positions even for high-educated entrants (Hillmert 1999). Many highly educated workers start their positions in "stop gap-jobs" that offer the prospect of improving their initial position. In such a scenario off-the-job search might be used as an active phase to improve occupational position. Weak EPL generates high levels of turnover and job mobility. It implies a higher number of vacancies on the labour market. At the same time because of high turnover on the labour market unemployment might be less stigmatizing than in a rigid labour market. Recent studies emphasize that prolonged searching for work is rewarded with a better job (Boheim/Taylor 2000). However, the job search period depends on the aspiration of job searchers that reflect their productivity, and opportunity costs of the job search (Mccall 1970). Given that higher educated workers with their general skills are more appreciated on the labour market than low-educated people (Breen 1997) and that they are aware of their productivity, they will reject job offers that fall short of their expectations and

remain unemployed. At the same time high-educated workers have better chances of coping with opportunity costs: they receive higher unemployment benefits and profit from savings from previous salaries. Furthermore, they are more likely to experience financial support from their spouses and/or family. Jacob (2005) argues that parental support plays a major role influencing not only the duration of unemployment but also the quality of the subsequent job match. In contrast poorly educated workers have to deal with the high opportunity costs of the job search because of their low allocation of financial resources and a decrease in demand for their skill profiles. High financial pressure on low-educated workers to find a job reduces the aspiration to find a better job position. Dolton and O'Neill (1996) report that invitations for the 'RESTART' program interview coincide with re-integration into any job (which includes short-term, temporary and part-time jobs) but the program fails to re-integrate workers into solid jobs.

Since in Germany institutional linkage between the educational and employment systems is very strong, many entrants start in adequate positions. Thus, there is little scope to improve one's position. Therefore, search and matching theories in the German context are somewhat limited in terms of predicting outcomes after phases of unemployment. Though the share of unintended job mismatches in Germany is relatively low, mismatches where both the employee and the employer are aware of the mismatch (intended mismatch) are not unusual. In Germany those entrants starting in mismatched positions become entrapped in such positions with few prospects of improving their initial positions.

Signalling theory competes with search and matching theories and is often utilized to explain negative effects of unemployment. Lacking information on the productivity of a prospective employee, employers seek signals which convey information on the job applicant (Gibbons/Katz 1991). A (prolonged) unemployment phase is seen as providing employers with a signal of low productivity. For the unemployed this implies fewer chances to re-start in jobs that match their skills. Since EPL in Germany is strict, employers' hiring practices are risk-averse. Therefore, the EPL has consequences for the stigmatization of employees on the micro level (behavioural level of employers) and aggregates to low employer-initiated turn-over in the labour market on the macro level (Gangl 2006). Thus, the stigma attached to unemployment might have negative consequences on future career in Germany.

In contrast, EPL in the UK is weak and low occupational positions at the beginning of the employment career are part of an ongoing relocation process; therefore the stigmatization of unemployed workers should be less pronounced than in labour markets with strict EPL. However, the signalling effect of unemployment might vary for different educational groups. The sequential nature of job offers causes job searchers either to accept a job offer immediately or to wait for the next job offer. Highly educated individuals looking for jobs are aware of their productivity and tend therefore not to take the first available job. Rodriguez-Planas (2004) found that highly productive laid-off workers in the US choose unemployment over a low-paid

job as a means of signalling their productivity. Thus, a prolonged unemployment spell for high-educated workers might be interpreted by employers as an indicator of an employee's high aspiration level. Hence, high-educated workers might be less susceptible to status losses upon re-entering the labour market. The low-educated are positioned at the bottom of the job queue and an ample supply of unskilled and low-skilled labour reduces their chances of receiving a 'good' position. Thus, waiting for a better job offer might not be the best strategy, as they will probably not receive such an offer. Thus, a prolonged job search is interpreted by employers not as a signal of their high aspirations, but of their unemployability.

Human capital theory also contradicts the predictions of search and matching theories. The scarring effect is mainly explained by devaluation of job-specific skills when changing firms. Thus, unemployment scarring is particularly relevant for status losses of high-tenure workers with a large stock of firm-specific human capital. Because in the UK on-the-job training provides employees with firm-specific human capital the scar effect due to devaluation of firm-specific human capital should be more pronounced in the UK than in Germany.

As a coordinated market economy with a high degree of manufacturing industrialization, Germany provides more workers with clear-cut occupational profiles. In the UK the demand for general human capital in the service sector is high and the education system has quickly adjusted its capacities to meet this demand. Since devaluation of general human capital proceeds more slowly than the devaluation of occupation profiles in manufacturing industries, the prolonged duration of unemployment is more scarring for workers holding middle and higher educational degrees in Germany than in the UK. General human capital is more easily transferable across firms and is mainly acquired through formal education. Thus, when comparing the high- and low-educated in the UK, we can also expect that the high-educated are in a better position since their broad academic skills make them less dependent on the accumulation of job-specific skills, at least at the beginning of their employment career.

Summary of Hypotheses
Confronting human capital and signal models with search and matching models against the institutional context in the UK and Germany we have formulated the following hypotheses.

Since in the UK EPL is weak and linkage between educational and employment system is weak, wrong job allocations at the beginning of employment is a part of the employment career. The unemployment phase in the UK might be used to improve occupational position.

H1 a: We expect, however, that only high-educated workers will improve their occupational position in the UK. The increasing demand for high-educated workers enhances their chances to find a better job match. The high-educated workers are

aware of their productivity and their chances on the labour market and thus have high expectations towards the occupational position of the next job.

H1 b: For the same reason we expect that prolonged job search might improve their occupational positions. The sequential nature of job offers causes job searchers either to accept a job offer immediately or to wait for the next job offer. The less clear-cut occupational profiles in the UK make waiting for the next job offer rationally appealing. Higher previous salaries and savings, higher unemployment benefits from previous gross salaries, and higher household incomes allow the high-educated to cope with opportunity costs arising from the job search. High-educated workers might also choose unemployment over a low-paid job as a means of signalling their productivity. Thus waiting for a better job offer might be a good strategy to improve their occupational positions.

H1 c: In contrast, the low-educated are positioned at the bottom of the job queue and an ample supply of unskilled and low-skilled labour reduces their chances of receiving a 'good' position. Furthermore, the low unemployment benefits from previous salaries, the sanction regime for the right to receive unemployment benefits, and low household incomes do not buffer their opportunity searching costs, forcing them to reduce their job aspirations. A prolonged job search might be interpreted by employers not as a signal of their high aspirations, but of their unemployability. Thus, we expect that unemployment will not improve their occupational position.

H1 d: By the same token, waiting for a better job offer might not be the best strategy, as they will probably not receive such an offer. Therefore, a prolonged job search might have a negative impact on the post-unemployment occupational status.

H2 a: Due to human capital and signalling theories we expect a negative effect of unemployment on occupational status for all educational groups in Germany.

H2 b: The rapid depreciation of occupational skills might be especially scarring for highly educated workers compared with low-educated workers. Thus, a prolonged job search might have a negative effect on occupational status.

H3: Considering the re-entry chances we expect that compared to high-qualified workers the decreased demand for low-skilled labour reduces the re-entry chances of low-qualified workers in both countries.

H4: Service sector jobs have become the main destination for young women in both countries. Non-employed women are also more likely to restart in service jobs than men (Fagan et al. 2005). Since the human capital in the service sector is also more easily transferable than in manufacturing industries, we expect that women should perform better than men in improving their occupational positions upon re-entering the labour market.

4 Data and methods

4.1 Data

The analyses of this acticle are based on representative longitudinal data from the German Socio-economic Panel (GSOEP), conducted by the German Institute for Economic Research (DIW) in Berlin and from the British Household Panel Survey (BHPS), conducted by the Institute for Social and Economic Research (ISER). Additionally for the UK study we use retrospective data since 1985 (Maré 2006). The analysis is based on people aged between 16 and 30 at the entry into the labour market after the last completed education and who became unemployed between 1985 and 2006. The time horizon in the sample is the first 10 years after entering the labour market. Those respondents who entered employment after the age of 30 are excluded from the sample. The marginally employed are not considered as an entry into the labour market. Therefore, only those with an unemployment spell who had worked in a solid job are included in the sample. Employment spells lasting less than 12 months and lying between two educational spells are not considered as the first job. Jobs before military (civil) service are also not considered as the first job. In defining unemployment, we adopt the ILO definition of being jobless but available for paid employment.

Since our focus is the effect of unemployment a spell of unemployment following other interruption spells (for example: additional education => unemployment spell) are excluded from our sample. The rationale behind such a definition is that other states might trigger the event of unemployment. Those employment interruptions (inactivity and additional education) that follow an unemployment spell are not excluded from the sample but are controlled for. The final sample consists of 781 people with 15343 person month observations for Germany and 751 persons and 9384 year observations for the UK.

4.2 Statistical model

Though the job search theory was formulated in terms of wages we will utilize this concept for occupational status. The aspiration status w_r (reservation wage) is defined by the following equation:

$$w_r = z_r \beta_r + u_r \tag{1}$$

A person accepts the job offer with observed status w_o if $w_o > w_r$ with:

$$w_o = x_o \beta_o + u_o \tag{2}$$

The value of w_o is observable if w_o exceeds the value of w_r. Since the threshold level is unknown this threshold level is formalized by the latent variable d (Long 1997).

$$d = \begin{cases} 1 & \text{if } w_0 > w_r \\ 0 & \text{if } w_0 \leq w_r \end{cases}$$

$$w_0 = \begin{cases} w_0 & \text{if } d = 1 \\ missing & \text{if } d = 0 \end{cases}$$

In an article of 1988 Petersen formalized a model with continuous dependent variable that estimates hazard rates at the shift of the dependent variable and the change of the value of the dependent variable in one model. However, his study does not go beyond theoretical formalization of the model. In his study he estimates the hazard rate with conventional event history analysis in the first step and the status change in dependent variable w_o by using OLS regression in the second step. In his study (1988) he assumes that $E(u_o|x_o, z_r, u_r) = 0$. Such an assumption is thoroughly justifiable when modelling the upward and downward status mobility for on-the-job search framework (job-to-job mobility) because given the transition (the shift of status value) one also observes the change in value of dependent variable. However, selection upon re-entry into the labour market in the off-the-job framework (mobility via unemployment) might bias the results, as for example some unemployed persons might prefer to stay unemployed when the job offers do not correspond to the aspiration level (reservation wages). Furthermore, as Gangl (2002) correctly notifies, the status outcomes might be conditionally dependent on the re-employment rate and therefore suggests to use Hackman's selection model and also to account for selection bias and to test for conditional independence between re-employment rates and status outcomes. By properly arranging the data structure we will utilize full-information maximum likelihood estimator (FIML) estimator for event history analysis. For these reason we split the data on the monthly basis to apply Heckman's FIML estimator for discrete event history analysis. Using FIML estimator we also avoid the practical problem of identification for Heckman's two step estimator when the variables in both equations are the same ($x_o = z_r$) and the linearity between λ(.) and values $β_r z_r$ (Wooldridge 2002).

Since some characteristics of an individual might influence re-entry chances and at the same time have an impact on status outcome, the equation (2) might lead to biased results.

If the mean value of u_o is not zero then the expected value of w_o is:
$$E(w_o|x_o, z_r, u_r) = x_o\beta_o + E(u_o|x_o, z_r, u_r) \tag{3}$$

Under joint normality assumption of u_o and u_r we will estimate equation (3) using FIML estimator. An individual contributes to log-likelihood with two parts: (1) The likelihood contribution from observations with d = 0, i.e. the probability of not yet being observed in the regression equation; (2) The likelihood contribution from observations with event d = 1, i.e. the probability of being observed multiplied with the conditional density of the observed value.

The probability at time point t not to observe the outcome variable w_o is (for details see Long 1997):
$$P(d = 0|z_r) = P(u_r \leq -\beta_r z_r) = 1 - P(u_r \geq -\beta_r z_r) \tag{4}$$

Taking that u_r is normally standard distributed than:
$$P(d = 0|z_r) = 1 - \Phi(\beta_r z_r) \qquad \text{with } \sigma = 1 \tag{5}$$

with Φ as distribution function of the standard normal distribution. Since sigma is not identifiable it is set to 1.

The probability to observe the status (uncensored observations) is:

$$P(d = 1|z_r) = \Phi(\beta_r z_r) \qquad \text{with } \sigma = 1 \tag{6}$$

The conditional density of the observed value is: $f(w_o|d = 1, \mathbf{z})$. Note vector $\mathbf{z}$ represents covariates for reemployment rates z_r and covariates x_o for the outcome variable w_o (occupational status). Using Bayes rule:

$$f(w_o|d = 1, \mathbf{z}) = P(d = 1|w_o, z_r)f(w_o|x_o)/P(d = 1|z_r)$$

The observed part contributes to maximum likelyhood estimator:

$$P(\beta_r, \beta_o, \sigma_o, \rho_{or}|d = 1) =$$
$$P(d = 1|z_r)f(w_o|d = 1, \mathbf{z}) =$$
$$P(d = 1|z_r)P(d = 1|w_o, z_r)f(w_o|x_o)/P(d = 1|z_r) = \tag{7}$$
$$= \Phi\left(\frac{\beta_r z_r + \rho_{or}/\sigma_o(w_o - \beta_o x_o)}{\sqrt{1 - \rho_{or}}}\right)\frac{1}{\sigma_o}\phi\left(\frac{w_o - \beta_o x_o}{\sigma_o}\right)$$

One individual contributes to maximum log-likelihood with unobserved part (5) and observed part (7) with log probability:

$$lnP(\beta_r, \beta_o, \sigma_o, \rho_{or}) = \sum_{d=0}\sum_{t=1}^{T-1}ln[1 - \Phi(\beta_r z_r)] + \sum_{d=1}ln\left[\frac{1}{\sigma_o}\phi\left(\frac{w_o - \beta_o x_o}{\sigma_o}\right)\right]$$
$$+ \sum_{d=1}ln\left[\Phi\left(\frac{\beta_r z_r + \rho_{or}/\sigma_o(w_o - \beta_o x_o)}{\sqrt{1 - \rho_{or}}}\right)\right] \tag{8}$$

Note that in a single episode framework of discrete event history analysis the event (observed part) can occur only once when being at risk. Thus, the observed part (d=1) of the equation (8) is identical to Hackman's correction estimator. In contrast, until the event occurs an individual might contribute several times with unobserved part (d=0) to maximum log-likelihood. Thus, the unobserved part is the sum of log probabilities of those who not yet have experienced an event and reflects the concept of survival function.

Using the Heckman's estimator we simultaneously estimate the parameters (β_r) for hazard part of the model and the change of occupational status (β_o). We investigate the status change ($\Delta w_o = w_{o\ upon\ re\text{-}entry}$ - $w_{o\ before\ job\ loss}$) because the focus of this study is not the absolute occupational standing after unemployment but whether the job searcher loses or improves their occupational status via unemployment. We measure mobility with a Socio-Economic Index of Occupational Status (ISEI) and not by hourly wage for several reasons (ISEI scale, see Ganzeboom/Treiman 1996).[2] First of all, while the wage growth at the beginning of the employment career is a "natural" phenomenon in Germany and especially in the UK (as well as in other coun-

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[2] Status scores are assigned to occupational titles (on the basis of information from the ISCO-88 classification) according to a scale that ranges from 16 for occupations with the lowest status to 90 for occupations with the highest status.

tries), the occupational status measured in the ISEI score reflects the improvement of occupational positions. Secondly, the retrospective data for the UK does not include wage information, which leaves us with low case numbers (especially for high-educated individuals). Thirdly, not all employment episodes in the BHPS sample contain working hours, which makes the reconstruction of the hourly gross wage a difficult task. ρ_{or} reflects whether the status outcomes are conditionally dependent on the reemployment rate.

In the following models we use the following variables. Educational groups based on CASMIN classification: (primary = inadequately completed or completed compulsory education without any qualification; basic vocational education = general elementary education and vocational qualification; academic secondary = secondary education does not provide any occupational qualification, i.e. is designed to provide an access to tertiary education; technical secondary = secondary or post-secondary non-tertiary programs providing vocational qualification; tertiary: lower stage of tertiary education with occupation-oriented programs and traditional university); Region (four regions created from twelve official regions: North, South, Middle, Scotland or UK and three regions for Germany: South Germany, North Germany and East Germany); Gender; Duration of the job search (in months); Branch of industry prior to unemployment (based on a modified (Singelmann 1978) classification by collapsing transformative or distributive industries); Firm size of previous job for Germany;[3] Age at the labour market entry; Dummy variables for the years of interview; and Dummies for ethnicity variable (German = 1, British = 1). We also control for employment interruptions (inactivity, additional training, maternity leave, and taking care of relatives) that follow the phase of unemployment.

The models will be introduced in the following way: in the first equation, that reflects the hazard part, we introduce all control variables starting from the first model. In the second equation, that reflects the status change (Δw_o), we introduce variables stepwise.

5 Results[4]

In the model 1 we introduced in the linear part (AV=occupational status) the dummy variables for education (see Table).[5] Year dummies and variables for additional

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[3] For the UK the firm size is not available for retrospective data.

[4] Due to the tendency of unemployment gap closure in retrospective data in the UK the comparison between the cohorts belonging to retrospective and panel data provides less reliable results. For these reason, we estimated models using panel data only. The results with and without retrospective data are virtually identical.

[5] We estimated also OLS regression. While coefficients for educational groups of OLS are identical with coefficients of FIML estimotr for the UK, these coefficients are hevealy downward biased in OLS regression in Germany, especially for tertiary education (aout 5 points). Indeed, the likelihood-ratio test between an independent probit model for the selection equation and a regression model on the observed outcome variable (occupational status) against the Heckman model justifies application of Heckman`s selection correction for Germany while for UK the likelyhood-ratio test proved to be not significant.

education and inactivity following unemployment are controlled for (coefficients are not shown).[6] While we find substantial losses for workers with tertiary education (about 6 points), the losses for other educatinonal groups in Germany are less pronounced.[7] Thus, we can only partly confirm the hypotheses H2 a (status losses *for all* educational groups). We can confirm hypotheses for the UK: H1 a while the results are clearly pronounced (and significant) for persons holding tertiary education and (about 6 points), H1 c the status gains for lower qualified persons are small (and not significant). In model 2 we introduced variables for number of unemployment interruptions, gender, job tenure in the last job, and duration of unemployment. We also control in model 2 for branch of industry, firm size (in Germany), and regions. Each unemployment phase reduces the occupational status by 2 points for Germany and by 1 point in the UK (though not significant). It is also interesting that each unemployment phase enhances the re-entry chances in the UK and worsens re-entry chances in Germany (see coefficient in the hazard rate part). These results support the main assumption of this study: while unemployment phase has no negative effect on the future career in the UK, we find path-dependencies for Germany. Compared to men, women improve their occupational positions in both countries by about two points. We trace these results back to de-industrialization: dismissed manufacturing workers are disproportionally men who find it more difficult to find adequate positions (H4). Job tenure of the last job has no effect on occupational status in Germany but does in the UK. We interpret these results in the light of job-specific human capital. In the UK vocational skills are very often learned on the job that makes job-specific human capital an important component of human capital in the UK. In Germany job-specific skills are less important than vocational skills that are highly standardized.

Considering the re-entry chances we argued that the decreased demand for low-skilled labour reduce the re-entry chances of low-educated workers compared to the high-educated workers in both countries (H3). Indeed, according to the hazard part of the model the higher-qualified workers are more likely to re-enter the labour market than lower-qualified workers in both countries (Model 1 – Model 4).

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[6] Since short-term unemployment duration might be endogenous – the job searcher might have already a better position in a new job before terminating the old job – we also estimated models keeping only those workers who spend more than one month in unemployment. While for the UK the coefficients in question do not differ considerably, we find substantial differences for Germany: in the model with all unemployed workers we find no status losses in Germany (model not shown), the results change if we exclude those workers with one month (or two months) in unemployment (Model 1). In the proceeding models for Germany we will therefore confine our sample only for those who were more than one month unemployment.

[7] We added the coefficients for educational achievements with constant (0.87 + 4.65 ≈ 6 points).

Table

Unemployment duration and changes in post-unemployment occupational status

Δ occupational status	Germany			UK		
	Model 1	Model 2	Model 3	Model 1	Model 2	Model 3
Constant	-0.87	39.77***	38.18***	0.09	30.82***	31.42***
Education (ref. primary)						
Basic vocational	-2.77+	-3.70*	-2.66	0.05	0.58	0.67
Academic secondary	-1.92	0.00	-0.16	2.41	1.91	1.41
Technical secondary	-1.55	-4.68**	-1.63	1.33	-1.16	-0.94
Tertiary	-4.65*	-7.28**	-4.76	5.50*	4.31+	2.66
Number of unempl.		-2.10+	-2.37*		-1.23	-1.28
Woman (=1)		2.09*	1.96+		1.78	1.77
Full-time tenure		-0.09	-0.09		-0.25***	-0.25***
Full-time tenure (sq)		0.00*	0.00*		0.00**	0.00**
Part-tenure tenure		-0.05	-0.06		-0.18*	-0.17*
Unempl. experience		-0.54**	-0.35+		0.12+	0.10
Unempl. experience x						
Basic vocational			-0.09			-0.02
Academic secondary			0.00			0.07
Technical secondary			-0.20***			-0.10
Tertiary			-0.21+			0.34*
Unempl. exp. (sq.)		0.02**	0.01*			
Unempl. exp. (cub) x 10^3		-0.01**	-0.01*			
Hazard part						
Constant	-1.28***	-1.30***	-1.30***	-1.60***	-1.63***	-1.63***
Education (ref. primary)						
Basic vocational	0.16**	0.16**	0.16**	-0.03	-0.03	-0.03
Academic secondary	0.10	0.11	0.11	0.09	0.08	0.08
Technical secondary	0.27***	0.29***	0.29***	0.23**	0.23**	0.23**
Tertiary	0.45***	0.48***	0.48***	0.22**	0.23**	0.23**
Number of unempl.	-0.15**	-0.15**	-0.15**	0.12**	0.12**	0.12**
Woman	-0.05	-0.04	-0.04	-0.01	-0.01	-0.01
Full-time tenure	-0.01*	-0.01*	-0.01*	0.00	0.00+	0.00+
Full-time tenure (sq)	0.00**	0.00**	0.00**	-0.00	-0.00	-0.00
Part-tenure tenure	-0.01***	-0.01***	-0.01***	0.00	0.00	0.00
Unempl. experience	-0.02***	-0.02***	-0.02***	-0.04***	-0.03***	-0.03***
Unempl. exp. (sq.) x 10^3	0.08***	0.08***	0.08***	0.01***	0.01***	0.01***
Unempl. exp. (cub) x 10^4	-0.06***	-0.06***	-0.06***			
Rho (u_r, u_o)	0.04	-0.16	-0.18	-0.06	-0.87***	-0.88***
N of subjects at risk	1148	1148	1148	1347	1347	1347
Numeber of failures	752	752	752	940	940	940
Number of observations	15343	15343	15343	9384	9384	9384
LL	-5788.57	-5760.17	-5752.58	-6838.30	-6818.70	-6815.86

Notes:

+ p<0.10, * p<0.05, ** p<0.01, *** p<0.001

Full set of control variables: kind of employment interruption following phase of unemployment, firm size (for Germany), gender, region, branch of industry of the last job, dummies for ethnicity variables, dummy variables for the years of interview.

Source: GSEP: 1984-2006; BHPS: 1991-2006.

As we argued in the theoretical section the duration of the search might have different consequences for different educational groups in both countries. In the UK the prolonged job search might have positive consequences for high-educated workers (H1 b). For those in the labour market with less clear-cut occupational profiles, waiting for a better job offer might be a good strategy to improve their occupational positions. Higher previous salaries and savings, higher unemployment benefits from previous gross salaries, and higher household incomes allow the high-educated to

cope with opportunity costs arising from the job search. In contrast, an ample supply of unskilled and low-skilled labour combined with low unemployment benefits, the sanction regime, and low family support buffer their opportunity searching costs, forcing them to take the first available job (H1 d). In Germany young people start in higher positions than in the UK and the devaluation of occupational skills is more pronounced for high-educated persons than for low-educated workers (H2 b). To test these hypotheses we interacted the duration of unemployment with educational variables (in $\Delta w_{o \; occupational \; status}$).[8] All in all we can confirm the hypotheses. In Germany those with tertiary and technical secondary achievements lose in status with each month of unemployment. In the UK prolonged job search rewards persons with tertiary education but not other groups: persons with tertiary education improve their status by 0.46 points a month (significant at p < 0.001 level).[9]

6 Summary and Discussion

Taking countries with two different institutional settings we contribute to the research on occupational mobility for young people in several aspects. First, we systematically discuss the impact of institutional settings of the British and German labour markets on re-employment for different educational groups. While many tther studies do not differentiate between job beginners and older workers (Gangl 2006, Arulampalam 2001, Gregory/Jukes 2001), we discuss labour market theories for job beginners. Furthermore, since the meaning of unemployment phases might be different for different educational groups, we take a closer look at risk and chances of unemployment for different educational groups.

Non-standardized, on-the-job training and screening strategies on the job are common in UK, which results in low occupational starting positions. A high degree of mismatches and low employment protection legislation (EPL) assign the employment careers in the UK a transitory character with the prospect of working the way up to better and more qualified positions. However, we argued that only the highly-educated workers might improve their initial positions. Higher aspirations, higher levels of savings and better family support make high-educated people wait until they find an adequate job. For low-educated workers, waiting for a better job offer might be not the best strategy. The low level of unemployment benefits from previous salaries, the regime of sanctions linked to the right to receive unemployment benefits, and low family support push them to take the first available job.

In Germany a strongly skill- and occupation-based labour market with robust EPL creates a strongly segmented insider-outsider labour market that reduces overall occupational mobility. The 'trial and error' strategy to improve initial positions in rigid

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[8] Note we also introduced unemployment duration squared and it cubic form. However, we use only those polynominals that turns out to be significant in our models.

[9] The main effect of the job search was added with the interaction effect and tested with Wald Test Statistic for significance.

labour markets is less common than in liberal countries and the stigma attached to unemployment might penalize all workers irrespective their educational achievements.

We can confirm our expectation regarding the UK: only high-educated workers improve their occupational positions, while there are no improvements (but also no status losses) for lower educational groups. According to our expectations we also find that each month of unemployment search rewards high-educated workers but not low-educated workers. For Germany our expectations are less clear-cut: we find slight penalties for all educational groups (though not significant). However, when we close short unemployment gaps we find substantial losses in occupational status for workers holding tertiary education. We find also that each month of unemployment penalizes only high-educated workers, which is in accordance with our argumentation: devaluation of occupational skills is more rapid for high-qualified than for low-qualified educational groups.

Summarizing the results it becomes evident that the application of labor market theories should be applied with caution in different institutional contexts. Strong EPL and a tight linkage between vocational training and skill demands create a strongly skill-based labor market that guarantees adequate job positions and good job perspectives in Germany. An unemployment spell aggregates to a negative signal that leads to necative outcomes for all educational groups. In contrast, in liberal countries weak EPL and weak linkage between vocational and occupational system make job beginners start their first jobs in inadequate positions with the prospect of working their way up to better and more qualified positions.

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