OXFORD BULLETIN OF ECONOMICS AND STATISTICS, 76, 4 (2014) 0305–9049
doi: 10.1111/obes.12029

Employed and Unemployed Job Seekers and the Business Cycle*

Simonetta Longhi and Mark Taylor

Institute for Social and Economic Research, University of Essex, Colchester, C04 3SQ, UK (e-mail: slonghi@essex.ac.uk; taylm@essex.ac.uk)

Abstract

The job search literature suggests that on-the-job search reduces the probability of unemployed people finding jobs. However, there is little evidence that employed and unemployed job seekers are similar or apply for the same jobs. We compare employed and unemployed job seekers in their individual characteristics, preferences over working hours, job-search strategies and employment histories, and identify how differences vary over the business cycle. We find systematic differences which persist over the business cycle. Our results are consistent with a segmented labour market in which employed and unemployed job seekers are unlikely to directly compete with each other for jobs.

1. Introduction

As the UK economy struggles to emerge from recession, the unemployment rate is at its highest level for 16 years at 8.4% while about 70% of the UK working age population is in work (ONS, 2012a). These headline rates, however, disguise churning in the labour market as workers move into and out of work and from job to job in an attempt to find a suitable employer and maximize their wages. For example, even during the current economic stagnation, data from the Labour Force Survey suggest that between October and December 2011 more than 400,000 working age people moved from employment to unemployment while 600,000 moved in the opposite direction (ONS, 2012b). During periods of low labour demand, competition for jobs is fierce as an unemployed person has to compete not only with a larger pool of other unemployed people but also with employed job seekers who are looking for either a better worker-firm match or higher wages.

*We thank the Editor and two anonymous Referees for useful comments on earlier versions of this article. We also thank participants at the Micro-Social Change Workshop, University of Essex (April 2010), European Society of Population Economics Conference (Essen, Germany, June 2010), Joint European Association of Labour Economists/Society Of Labor Economists Conference (London, June 2010), Work and Pensions Employment Group Conference (Bristol, July 2010) and to the Search and Matching Workshop, University of Essex (March 2011) for helpful comments. This forms part of the project 'Job search in the UK 1990–2006', funded by the Leverhulme Trust Grant no. F/00 213/O; it is also part of a programme of research funded by the Economic and Social Research Council through their grant to the Research Centre on Micro-social Change at ISER. The support provided by the ESRC and the University of Essex is gratefully acknowledged. LFS and BHPS data are available from the Data Archive at the University of Essex (http://www.data-archive.ac.uk).

JEL Classification numbers: J29, J60.

In theoretical models such as Burdett and Mortensen (1998) and van den Berg and Ridder (1998), both employed and unemployed job seekers apply for the same jobs. Job seekers are homogeneous, with employed and unemployed job seekers differing only in their labour market status, search intensity and effectiveness. As potential employers cannot observe the productivity of job applicants, they may interpret previous or current unemployment as a signal of low productivity. Hence, when receiving applications from employed and unemployed job seekers, employers prefer job applicants who are employed and the presence of employed job seekers should reduce the chances of unemployed people finding work (Eriksson and Gottfries, 2005; Rogerson, Shimer and Wright 2005; Eckstein and van den Berg, 2007). In contrast, Pissarides (1994) characterizes the labour market by 'good' and 'bad' jobs, where employed job seekers only apply for and accept jobs that are better than their current one. The unemployed are more likely to be hired in 'bad' jobs and to engage in on-the-job search after accepting the 'bad' job. Consequently 'good' jobs should be filled by employed people who do not engage in on-the-job search, 'bad' jobs should be filled by employed people looking for a 'good' job, and the unemployed should mostly apply to 'bad' jobs. As they apply to different types of jobs, employed and unemployed job seekers do not directly compete with each other. Empirical evidence on the similarities and differences between employed and unemployed job seekers is scarce, prompting the question of the extent to which they compete for the same jobs.

Our contribution is to compare the characteristics and behaviour of employed and unemployed job seekers over the business cycle. If they are observationally different, then we cannot conclude that they directly compete with each other for the same job vacancies, or that the experience and decisions of one group will influence the outcomes of the other. In this case we would conclude that the labour market is segmented, with the unemployed and employed operating in different labour markets. We first investigate the similarity of employed and unemployed job seekers in terms of their observed characteristics and job search behaviour. For example, unemployment is higher among people with low rather than high education and the probability of on-the-job search also varies with education (Pissarides and Wadsworth, 1994). If employed job seekers have high levels of education and the unemployed have low levels of education, they are unlikely to apply to the same vacancies.

In addition, the extent to which employed job seekers affect the outcomes of the unemployed will depend on the extent to which they search for the same types of job. Ideally, any such comparison should use information on the vacancies to which job seekers apply but this is rarely available. The assumption that employed and unemployed job seekers search for a job in the same occupation than the current (for employed) or previous job (for unemployed) is strong as recent literature has shown substantial occupational mobility among both employed and unemployed job seekers (Kambourov and Manovskii, 2008; Longhi and Brynin, 2010; Longhi and Taylor, 2013a). We instead gauge the degree of competition between employed and unemployed job seekers by identifying differences in their job search behaviour. As there is evidence that employed and unemployed job seekers use different search methods with different chances of success (Gorter, Nijkamp and Rietveld, 1993; Lindeboom, van Ours and Renes, 1994; van Ours, 1995; Weber and Mahringer, 2008), we also explore the extent to which

employed and unemployed job seekers look for the same types of jobs and use similar search methods.

Our second research question investigates the similarity of employed and unemployed job seekers in terms of their job and employment histories, also taking into account unobserved individual heterogeneity. By focusing on employers' perceptions of their job applicants, the recruiting literature suggests that there might be important differences between unemployed and employed job applicants in terms of experience (Atkinson, Giles and Meager, 1996; Rosholm and Svarer, 2004). The literature on unemployment persistence suggests that current employment is strongly related to past unemployment (Arulampalam, Booth and Taylor, 2000; Gregg, 2001; Böheim and Taylor, 2002; Stewart, 2007), even when allowing for observed and unobserved differences between individuals. Hence, the unemployed and employed are also likely to have very different job and employment histories. Furthermore, employed and unemployed job seekers may differ in other unobservable ways, for example in terms of their motivation, reservation wages and the types of jobs they find acceptable.

The level of competition between employed and unemployed job seekers may also vary over the business cycle. Even high-quality workers may lose their jobs during recessions, raising the average quality of the pool of unemployed. If so, we expect differences between employed and unemployed job seekers to fall and competition between them to increase, in periods of recession. But if only employed job seekers with the highest probability of finding a job search during a recession, the average quality of the pool of employed job seekers also will increase and differences between employed and unemployed job seekers will persist over the business cycle. This would suggest that employed and unemployed job seekers are unlikely to directly compete with each other. Our third research question asks whether differences between employed and unemployed job seekers vary over the business cycle and whether there are cyclical differences in the impact that on-the-job search has on unemployed job seekers.

We find that unemployed and employed job seekers differ significantly in their individual characteristics, past employment histories, preferences over working hours and job-search strategies and that such differences persist over the business cycle. These systematic differences suggest that the unemployed are unlikely to directly compete with employed job seekers. Our results are consistent with a segmented labour market and with a no-pay low-pay cycle, where workers become locked in a sequence of unemployment and low quality jobs.

II. Data and descriptive statistics

To accurately identify whether employed and unemployed job seekers are in direct competition requires data on the extent to which they apply for the same jobs. Since such data are not available, we compare the characteristics and behaviour of employed and unemployed job seekers to identify differences and similarities and draw inferences from these. We combine data from the annual and quarterly Labour Force Survey (LFS) with the British Household Panel Survey (BHPS) in order to address our three questions.

We use data from the LFS for the period 1984–2009, which were collected annually from 1984 to 1991 and quarterly since 1992. The advantage of the LFS is that it asks questions on job search to both employed and unemployed respondents. This allows us

to compare the characteristics of employees who do and do not search for a new job, as well as of employed and unemployed job seekers. Although there are comparability issues between the annual and quarterly data, the questions on job search activities were similar over time. However, fewer details about the type of job sought were asked before 1992.

We define job seekers in the LFS as those who:

(i) are looking for paid employment;
(ii) have looked for work in the last four weeks; and
(iii) mention at least one method of job search.

We focus on men and women of working age (16–59/64) who are either employed or unemployed. The self-employed, people in government training programs, unpaid family workers and inactive people (about 6% of all job seekers) and the small proportion (less than 1%) of unemployed people who do not satisfy the three conditions are excluded from our analysis. The quarterly LFS has a rotating panel structure in which people are interviewed for up to five successive quarters. To avoid repeated observations per individual, in most models we use data from the first interview within the quarterly panel structure; the exception is in models analyzing the determinants of on-the-job search for which we only use data from the fifth interview (when questions are asked on wages).

The BHPS is a nationally representative panel of households in the UK which started in 1991, with the most recent wave available to date referring to 2007. Our BHPS analysis also focuses on people of working age (16–59/64) who are employed or unemployed. The BHPS has two advantages over the LFS. Firstly, it collects job and employment histories between two consecutive interviews (roughly 12 months apart), allowing us to identify different employment histories between the employed and unemployed. Secondly, the BHPS is a panel dataset, allowing us to account for unobserved differences across individuals in estimation. However, like many datasets the BHPS collects data on job search activity only from people who are currently unemployed. Hence, we use information in the quarterly LFS to construct a model of on-the-job search which we then use to predict job search among employees in the BHPS. This step only uses job characteristics that are available in both datasets. Current wages are likely to be key determinants of engaging in on-the-job search and this is only available in the LFS from 1993 onwards. Therefore this part of our analysis is restricted to the period 1993–2007.

We first use LFS data to summarize job search status of LFS respondents (more details are available in Longhi and Taylor, 2013b). The left panel of Figure 1 shows how the proportion of employees in the LFS who are looking for a job varies over time. In a given year, between 5% and 7.5% of employees engage in on-the-job search, consistent with Pissarides and Wadsworth (1994). While there is some evidence that this proportion varies in a procyclical manner, the variation over the business cycle is perhaps smaller than suggested by previous theoretical models (e.g. Mumford and Smith, 1999; Anderson and Burgess, 2000). The right panel of Figure 1 shows the proportion of job seekers who are employed, which varies from 30% to more than 55% and more clearly follows variations in the business cycle: a larger proportion of job seekers are employed in periods of economic growth.

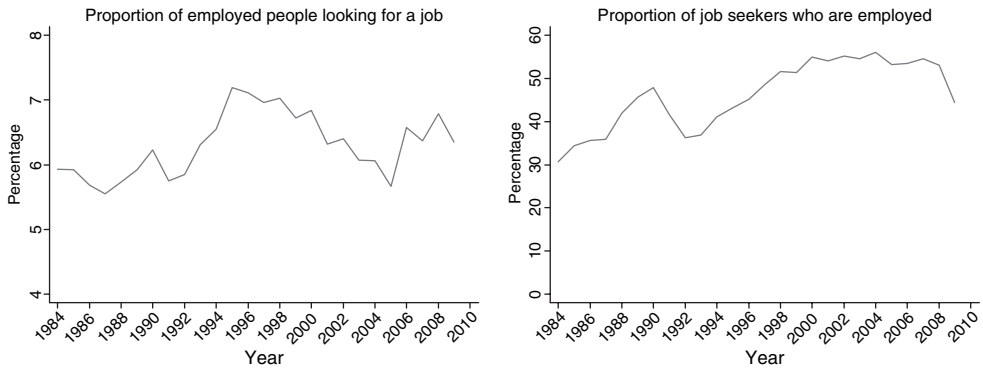

Figure 1. Employed job seekers as a proportion of total employment and of job seekers

TABLE 1

Preferences over working hours by employment status, LFS 1992–2009

	Employed job seeker	*Unemployed*	*All*
Preference for			
Full-time (%)	77.38	56.73	66.26
Part-time (%)	18.10	24.85	21.73
No preference (%)	4.52	18.42	12.01
Observations	38,756	45,235	83,991
Job search method			
Job centre, careers office, job club	14.21	33.53	24.61
Advertising, answering ads in newspapers	63.97	44.77	53.63
Direct approach to employers	8.38	10.27	9.4
Ask friends and relatives	8.45	8.79	8.64
Do anything else	4.99	2.65	3.73
Observations	38,759	45,240	83,999

Note: Column percentages.

Table 1 shows clear differences between employed and unemployed job seekers in their preferences over working hours and in terms of job search methods. For example, 77% of employed job seekers prefer a full-time job (30+ hours per week), 18% prefer a part-time job (less than 30 hours per week) and less than 5% have no preference. A larger proportion of the unemployed than employed prefer a part-time job (25%), while 57% prefer a full-time job and 18% are indifferent between the two. Table 1 also indicates that the majority of employed job seekers (64%) use responding to advertisements as their main method of job search, compared with 45% of unemployed job seekers. The unemployed are twice as likely as employed seekers to use job centres, career offices and job clubs (34% compared with 14%). Between 8–10% of employed and unemployed seekers approach employers directly and use friends and relatives. These descriptive statistics indicate differences between employed and unemployed job seekers in terms of the type of job sought and search methods used, which we investigate more rigorously in the remainder of the article.

III. Estimation

Who searches on the job?

Pissarides (1994) suggests that workers engaging in on-the-job search are in worse, less permanent jobs with lower wages than those who do not search. If so then differences between employed and unemployed job seekers do not merely reflect differences between employed and unemployed people in general. To examine this we estimate a probit model *conditional on being employed*, where the dependent variable y_i equals one if the employed worker (i) is searching for a job and zero if not searching. The model is specified as:

$$y_i^* = X_i'\beta_1 + W_i'\beta_2 + \beta_3 NE_i + \beta_4 PE_i + \varepsilon_i, \tag{1}$$

where y_i^* denotes the unobservable propensity for the employed worker to search for a new job. Explanatory variables include both individual (X_i) and job-related (W_i) characteristics. Individual characteristics include age, household structure and education. Job characteristics include employment type (temporary or permanent), sector (private or public), occupation, job tenure, wages and hours worked. The models also include two variables aggregated at the regional level: the quarterly change in the number of employees in the region (NE_i) and the proportion of job seekers that are employed in the quarter and region (PE_i). These capture regional labour market conditions which we expect to influence the decision to engage in on-the-job search. Region, year and quarter identifiers are also included.

Differences between employed and unemployed job seekers

We next examine factors associated with being an employed rather than an unemployed job seeker using a probit model *conditional on job search*. Here, the dependent variable z_i equals one if the job seeker is employed, and zero if unemployed. The model is specified as:

$$z_i^* = X_i'\alpha_1 + \alpha_2 NE_i + \xi_i, \tag{2}$$

where z_i^* denotes the unobservable propensity for a job seeker to be employed. Explanatory variables include individual characteristics (including the length of job search) and the quarterly change in the number of employees in the region.[1]

Preferences and search behaviour of employed and unemployed job seekers

We investigate whether employed and unemployed job seekers have similar preferences in terms of working hours using a multinomial probit model in which the dependent variable distinguishes between three states (j): 1 = preference for a full-time job, 2 = preference for a part-time job, or 3 = no preference, via the latent variable pref_i^*:

$$\text{pref}_i^* = X_i'\gamma_{1j} + \gamma_{2j} E_i + \eta_{ij}, \tag{3}$$

where η_{ij} are i.i.d. and follow a multivariate normal distribution. The probability of observing individual i having preference j is the probability that $\text{pref}_{ij} > \text{pref}_{iq}$ for each

[1] As we are not interested in the outcome of the search, search intensity is not relevant in this context.

$j \neq q$. Differences between job seekers are captured using a binary variable identifying whether a job seeker is employed (E_i) with unemployed being the reference group. The explanatory variables are the same as in equation (2).

A similar model is used to identify whether employed and unemployed job seekers use the same search methods. If employed and unemployed job seekers use different methods which have different levels of effectiveness, those using the least effective method will be disadvantaged in their job search. If different types of jobs are advertised using different methods, the choice of search method might be related to the type of job sought and if employed and unemployed job seekers use different methods of search it suggests that they are not applying for the same jobs. Our dependent variable in this case distinguishes between five search methods: job centre, careers office or private employment agency; direct approach to employers; ask friends and relatives; do anything else; with advertising and answering adverts in newspapers etc. as the reference group.[2] All these models are estimated using the quarterly series of the LFS from 1992 to 2009.

The impact of employment histories on job search

We next identify whether any differences in observable characteristics between unemployed and employed job seekers persist after controlling for employment histories and unobserved individual-specific characteristics, by combining the BHPS and LFS. Unobserved characteristics are likely to be important if, for example, more motivated or inherently able job seekers remain employed while engaging in job search, while previous research indicates that the employed and unemployed have different employment histories. If these are correlated with other observables, or are perceived by potential employers as signals of worker productivity, then this will bias estimated coefficients.

Employed job seekers are not directly identifiable in the BHPS. Therefore, we predict who among employed BHPS respondents are most likely to engage in on-the-job search using models estimated on LFS data. Given the random, nationally representative nature of both data sets, it seems reasonable to assume that the relationship between on-the-job search and job characteristics estimated using the LFS sample can also be applied to respondents in the BHPS sample. We estimate a probit model for engaging in on-the-job search similar to equation (1) using the LFS sample. The dependent variable distinguishes between employed people not searching and employed people searching for a new job. Explanatory variables that are available and comparable in both datasets include whether the job is temporary, part-time, in the public sector, occupation dummies, job tenure, weekly earnings and hours of work. The model also includes the proportion of job seekers who are employed by quarter and region to capture regional labour market conditions.

We use estimates from this model to predict the probability that each employed respondent in the BHPS engages in on-the-job search. As shown in Figure 1, on average

[2] Using the Internet to search for a job is not one of the possible options. It is likely that people using the Internet classify this as 'advertising and answering adverts in newspapers' or 'do anything else', which is the residual category in the LFS questionnaire.

6% of employees in the LFS engage in on-the-job search (varying between 5%–7.5% over the business cycle). Therefore, for each year we identify employed job seekers in the BHPS as the 6% of respondents with the highest probability of engaging in on-the-job search.

Having identified the group of employed job seekers in the BHPS, we can examine the impact of past employment histories on the probability of being an employed rather than an unemployed job seeker. We account for individual unobserved heterogeneity by estimating a random effects logit model and relax the typical (and restrictive) assumption of independence between observed characteristics and unobservables by including within-individual means of the time-varying covariates (Mundlak, 1978).[3] We model the probability that job seeker i is employed ($E=1$) rather than unemployed ($E=0$) at time t via the latent variable E_{it}^{*}:

$$E_{it}^{*}=x_{it}'\beta+\bar{x}_i'\gamma+u_i+v_{it}, \tag{4}$$

where E_{it}^{*} denotes the unobservable propensity for the job seeker to be employed at time t and x is a vector of observable characteristics that influence E_{it}^{*}. A job seeker is observed in employment when his/her propensity to be employed is greater than zero. $\bar{x}_i$ refers to the vector of individual means of time-varying covariates over time, u_i denotes the individual-specific unobservable effects and v is random error, which is i.i.d. and follows a logistic distribution. Explanatory variables in x include age, household structure, education, region and year identifiers, plus variables summarizing the previous (un)employment and job history of the job seeker. These capture whether or not the job seeker had an unemployment or inactivity spell in the previous 12 months (distinguishing between spells lasting less and more than 3 months), variables capturing earlier unemployment or inactivity spells that lasted more than three months and recent and earlier occupational change.

Differences over the business cycle

Finally, we examine whether or not differences between employed and unemployed job seekers and hence the nature of the potential competition between them, vary over the business cycle. We combine the annual and quarterly series of the LFS by grouping quarterly data into years. We then re-estimate models of job search behaviour [equation (2)] and method of job search [equation (3)] separately for periods when unemployment rates were increasing and decreasing. This allows us to identify whether the unemployed are more similar to employed job seekers in economic downtowns than in periods of economic growth. Periods of increasing unemployment include 1984, 1991, 1992, 1993 and between 2005–9; all other years are classified as periods of falling unemployment. Model specifications differ slightly from those described previously because of inconsistencies over time in data availability.

[3] We prefer random effects to fixed effects estimation for two reasons. Firstly a fixed effects model would be identified by individuals who participated in both employed and unemployed job search over the period, which would substantially reduce the effective sample size. Secondly, one of our key explanatory variables is education level which is time invariant and its effect would not be directly estimated in fixed effects estimation.

IV. Results[4]

Determinants of on-the-job search

Column (1) of Table 2 presents estimates from the model of on-the-job search [(equation 1)]. Consistent with the literature, the probability of engaging in on-the-job search falls with wages and job tenure. Earning £10 more per hour is associated with a two percentage point lower probability of searching on-the-job. Ten more years of job tenure reduces the probability by three percentage points for men and two percentage points for women. On-the-job search is also more likely among older workers. Married women are two percentage points less likely than single women to search on-the-job, but marriage only reduces the probability by 0.5 percentage points for men. Dependent children reduce on-the-job search among women. For both men and women, the probability of searching on-the-job increases with education – having a degree is associated with a five percentage point higher probability of searching on-the-job relative to having no qualifications.

Having a temporary job increases the probability of searching on-the-job by between four and five percentage points relative to a permanent job as does working in a part-time rather than full-time job among men (see also Pissarides and Wadsworth, 1994). This suggests that the part-time job is unsatisfactory in terms of labour supply preferences and is consistent with non-standard forms of employment such as part-time and temporary jobs being 'bad' jobs (McGovern, Smeaton and Hill, 2004). Workers may accept part-time jobs to escape unemployment, even though they preferred a full-time job.

Our estimates suggest that the probability of on-the-job search is independent of total employment, although men are more likely to engage in on-the-job search when a larger proportion of job seekers are employed. Hence we find that consistent with theory, workers engaging in on-the-job search are in different (possibly worse) jobs than those not searching. For example, they have lower wages and are more likely to be in temporary or part-time work.

The determinants of being an employed rather than unemployed job seeker

Column (2) of Table 2 presents the estimates of the determinants of being an employed rather than unemployed job seeker [equation (2)]. These show that the probability of being an employed rather than unemployed job seeker increases with age for both men and women, although the relationship is nonlinear. It is also higher if married (by 17 percentage points for men and six percentage points for women) and increases with education. Having a degree increases the probability of being an employed job seeker by 36–38 percentage points relative to having no qualifications. This is consistent with studies of recruitment behaviour, which find that one of the reasons why the unemployed do not get a particular job is that they do not meet the job requirements in terms of qualification and experience levels (Gorter *et al.*, 1993; Behrenz, 2001). Dependent children reduce the probability of being an employed job seeker by 13 percentage points for women and three percentage points for men.

[4]We have run a full set of sensitivity analyses to verify the robustness of our results. Space limitations prevent detailed discussion of these, but full analysis can be found in Longhi and Taylor (2013b).

TABLE 2

Determinants of on-the-job search, LFS 1993–2009

	(1)		(2)	
	Men	*Women*	*Men*	*Women*
Age [/10 for Column (1)]	0.063*	0.034*	0.036*	0.034*
	(0.005)	(0.006)	(0.001)	(0.001)
Age^2 [/100 for Column (1)]	0.009*	0.005*	−0.001*	0.000*
	(0.001)	(0.001)	(0.000)	(0.000)
Married/cohabiting	−0.005*	−0.023*	0.173*	0.064*
	(0.002)	(0.002)	(0.006)	(0.006)
Whether dependent children	−0.002	−0.004**	−0.035*	−0.134*
	(0.002)	(0.002)	(0.005)	(0.005)
University degree or higher	0.050*	0.049*	0.377*	0.358*
	(0.004)	(0.004)	(0.007)	(0.008)
Other higher	0.026*	0.031*	0.263*	0.259*
	(0.004)	(0.004)	(0.007)	(0.009)
GCSE, A levels	0.024*	0.022*	0.213*	0.203*
	(0.004)	(0.004)	(0.007)	(0.007)
Other qualifications	0.016*	0.017*	0.153*	0.130*
	(0.004)	(0.004)	(0.008)	(0.008)
Job temporary	0.049*	0.046*		
	(0.003)	(0.003)		
Part-time	0.031*	0.003		
	(0.004)	(0.003)		
Gross hourly wage £/10	−0.021*	−0.020*		
	(0.002)	(0.002)		
Job tenure years/10	−0.033*	−0.023*		
	(0.003)	(0.004)		
Job tenure square years/100	0.001	0.001		
	(0.001)	(0.002)		
Public sector	−0.003	−0.003		
	(0.002)	(0.002)		
Usual hours/10	0.002**	0.002		
	(0.001)	(0.001)		
Searching for 3–12 months			−0.056*	−0.046*
			(0.005)	(0.006)
Searching for >12 months			−0.134*	−0.110*
			(0.005)	(0.007)
Quarter-to-quarter change in the number of employees in the region	−0.019	−0.105	0.769*	0.796*
	(0.068)	(0.090)	(0.242)	(0.249)
Proportion job seekers who are employed (%)	0.001*	0.000		
	(0.000)	(0.000)		
Log-likelihood	−25,856	−20,764	−27,941	−24,745
Observations	122,707	97,336	47,786	39,757

Notes: Column (1): marginal effects from a probit model where the dependent variable is 1 if an employee searches for a job and 0 if she does not, Column (2): marginal effects of a probit model where the dependent variable is 1 if job seeker is employed and 0 if unemployed. Standard errors, clustered by years/quarters × regions, in parentheses. All models also include occupation, region, year, and quarter dummies. *Statistically significant at 1%; **statistically significant at 5%.

We also find that the probability of being an employed job seeker falls with the length of the search spell. This suggests that employed job seekers tend to search for short periods while the unemployed are more likely to search for longer and that competition between employed and unemployed job seekers falls with the length of search. Local labour market characteristics are also important. The probability of engaging in employed rather than unemployed search increases with the increase in the number of employees in the region. This suggests that on-the-job search is pro-cyclical relative to unemployment, consistent with Figure 1. A larger proportion of job seekers are employed in periods of economic growth.

Hence, we find systematic and large, differences in the characteristics of employed and unemployed job seekers in terms of age, family status and education. This is first evidence suggesting that employed and unemployed job seekers are different and may not compete for the same jobs.

Preferences in working hours and differences in job search methods

Table 3 presents estimated marginal effects associated with being an employed rather than unemployed job seeker from models of preferences over working hours [(equation (3)].[5] As education is a key determinant of the employment status of job seekers, we estimate models of work hour preferences and of search methods used separately by education.

Estimates indicate that employed job seekers are significantly more likely than the unemployed to prefer full-time jobs. Among men, employed job seekers are between 10–13 percentage points more likely than the unemployed to prefer a full-time job, while among women, they are between 18–25 percentage points more likely. Among men educated to below General Certificate Secondary Education (GCSE) level, employed job seekers have a higher probability of also preferring a part-time job (by 1–2 percentage points). However among more highly qualified men, employed job seekers are up to three percentage points less likely than the unemployed to prefer a part-time job. This suggests that the low educated unemployed have no preference between full- and part-time jobs and are less restrictive than employed job seekers in terms of jobs that they find acceptable. This is further, suggestive, evidence that employed and unemployed job seekers may not directly compete for the same jobs.

Descriptive statistics on labour market transitions from the quarterly LFS provide further support for this conclusion. The unemployed are more likely than job-to-job movers to enter a temporary or part-time job (34% enter a temporary job and 41% enter a part-time job compared with 23% and 26% of job-to-job movers). They are also more likely to engage in on-the-job search in the new job (15% compared with 8%). This is in line with Booth, Francesconi and Frank (2002) who find that, though undesirable, temporary jobs are stepping stones to better jobs.

Table 4 presents estimated marginal effects associated with being an employed rather than an unemployed job seeker with main search method used as the dependent variable, again estimated separately by education level. These indicate that employed job seekers are

[5] For brevity, we only present the marginal effects on the variable of interest, which identifies whether the job seeker was employed rather than unemployed. Full sets of estimates are available from the authors on request.

TABLE 3

The impact of being an employed rather than unemployed job seeker on preferences over working hours, LFS 1992–2009

	Men	*Women*
University degree or higher (*N*)	9,929	9,136
Looking for full-time job	0.098*	0.193*
	(0.006)	(0.009)
Looking for part-time job	−0.015*	−0.093*
	(0.004)	(0.009)
Other higher (*N*)	10,435	6,544
Looking for full-time job	0.132*	0.248*
	(0.008)	(0.011)
Looking for part-time job	−0.031*	−0.147*
	(0.006)	(0.011)
GCSE, A levels (*N*)	12,694	13,830
Looking for full-time job	0.129*	0.224*
	(0.008)	(0.007)
Looking for part-time job	−0.006	−0.108*
	(0.005)	(0.008)
Other qualifications (*N*)	6,709	5,231
Looking for full-time job	0.118*	0.234*
	(0.010)	(0.012)
Looking for part-time job	0.012**	−0.091*
	(0.006)	(0.012)
No qualifications (*N*)	10,319	6,961
Looking for full-time job	0.132*	0.187*
	(0.012)	(0.013)
Looking for part-time job	0.018*	−0.071*
	(0.006)	(0.013)

Notes: Marginal effects associated with being an employed rather than unemployed job seeker, estimated from multinomial probit models where the dependent variable is 1 if job seeker prefers a full-time job, 2 if prefers a part-time job and 3 if has no preference (reference category). Standard errors, clustered by years/quarters × regions in parentheses. All models also include age, dummies for marital status, presence of dependent children in the household, for length of search, region, year and quarter. * Statistically significant at 1%; ** statistically significant at 5%.

less likely than the otherwise similar unemployed to use job centres, career offices or job clubs across all education levels for both men and women. However these differences are smaller for more highly educated than for less educated job seekers. Among the more highly educated, employed job seekers are also less likely than the unemployed to directly approach employers. Employed job seekers are more likely to do anything else and among those with low qualifications, to ask friends and relatives. This suggests that the unemployed rely more than employed job seekers on employment agencies and more formal job search channels, rather than engaging in proactive (or informal) job search behaviour. If different types of job vacancies are filled via different channels, as indicated by the literature (Gorter *et al.*, 1993; Lindeboom *et al.*, 1994), then this again suggests that employed and unemployed job seekers may not directly compete for the same jobs. However, our estimates also suggest

TABLE 4

Impact of being employed rather than unemployed job seeker on job search method, LFS 1992–2009

	Men	*Women*
University degree or higher (N)	9,929	9,139
Job centre, careers office, job club	−0.107*	−0.082*
	(0.008)	(0.007)
Direct approach to employers	−0.017*	−0.011
	(0.006)	(0.007)
Ask friends and relatives	−0.002	0.003
	(0.006)	(0.006)
Do anything else	0.034*	0.027*
	(0.007)	(0.007)
Other higher (N)	10,438	6,545
Job centre, careers office, job club	−0.190*	−0.124*
	(0.008)	(0.009)
Direct approach to employers	−0.027*	−0.034*
	(0.006)	(0.007)
Ask friends and relatives	0.005	−0.008
	(0.006)	(0.006)
Do anything else	0.025*	0.027*
	(0.004)	(0.006)
GCSE, A levels (N)	12,696	13,833
Job centre, careers office, job club	−0.238*	−0.147*
	(0.008)	(0.007)
Direct approach to employers	0.003	−0.010
	(0.005)	(0.005)
Ask friends and relatives	0.024*	0.014*
	(0.005)	(0.004)
Do anything else	0.036*	0.026*
	(0.004)	(0.004)
Other qualifications (N)	6,711	5,235
Job centre, careers office, job club	−0.273*	−0.159*
	(0.012)	(0.012)
Direct approach to employers	0.000	−0.012
	(0.008)	(0.007)
Ask friends and relatives	0.022**	0.022*
	(0.009)	(0.008)
Do anything else	0.027*	0.025*
	(0.005)	(0.006)
No qualifications (N)	10,320	6,962
Job centre, careers office, job club	−0.298*	−0.160*
	(0.012)	(0.012)
Direct approach to employers	0.002	−0.001
	(0.007)	(0.007)
Ask friends and relatives	0.046*	0.027*
	(0.008)	(0.008)

(*continued*)

TABLE 4
(Continued)

	Men	*Women*
Do anything else	0.018*	0.017*
	(0.004)	(0.005)

Notes: Marginal effects associated with being an employed rather than unemployed job seeker, estimated using multinomial probit models where the dependent variable is 1 if main method of job search is using a job centre etc, 2 if uses direct approach to employers, 3 if asks friends/relatives, 4 if does anything else and 5 if responds to adverts in newspapers (reference category). Standard errors, clustered by years/quarters × regions, in parentheses. All models also include age, dummies marital status, presence of dependent children in the household, dummies for the length of search, region, year and quarter. *Statistically significant at 1%; **statistically significant at 5%.

that differences in search methods used by employed and unemployed job seekers are smaller for women than for men, which may indicate that competition between employed and unemployed job seekers is higher for women than men.

Introducing employment histories and unobserved individual-specific effects

Thus far, all models have ignored potential unobserved differences between employed and unemployed job seekers and any differences in previous employment histories. We now extend the analysis to introduce previous employment experiences and unobserved individual-specific effects. The first stage in this process is to identify employed job seekers in the BHPS by estimating models of on-the-job search using LFS data and applying the estimated coefficients to BHPS respondents. We then use these estimated coefficients to predict who among employed BHPS respondents are most likely to engage in on-the-job search. We then can use the BHPS to investigate the role of unobserved individual heterogeneity and past employment histories in shaping differences between employed and unemployed job seekers.[6]

The results from introducing unobserved heterogeneity and previous employment histories into models of being an employed rather than unemployed job seeker are shown in Table 5. This presents odds ratios, so that estimated effects of less than (more than) one indicate that the characteristics reduce (increase) the probability of a job seeker being employed. The estimates in column (1) refer to a logit model pooling observations over years and are consistent with our previous analysis of factors associated with being an employed or unemployed job seeker (Column (2) of Table 1).

The estimates in column 2 of Table 5 are from random effects logit models which incorporate time invariant unobserved individual heterogeneity into the specifications. Although some individual characteristics (e.g. marital status) lose explanatory power in this specification, the impact of the level of education remains large and statistically significant.

[6] Space limitations prohibit more detailed discussion of this process, but these are available in Longhi and Taylor (2013b). This provides evidence that our procedure is successful in distinguishing between employees who do and do not search and that the average characteristics of employees identified as seekers and non-seekers in the BHPS are similar to those in each status in the LFS.

TABLE 5

Determinants of being an employed rather than unemployed job seeker, BHPS 1993–2007

	(1) Logit model		*(2) Random effect Logit model*		*(3) Random effect Logit model*	
	Men	*Women*	*Men*	*Women*	*Men*	*Women*
Age	0.975	1.009	1.627**	1.600	1.577**	1.568
	(−1.40)	(0.30)	(2.55)	(1.11)	(2.34)	(0.98)
Age^2	1.000	1.000	1.000	1.002	1.000	1.002
	(1.20)	(−0.26)	(0.11)	(1.17)	(0.25)	(1.40)
Married	1.470*	1.472*	1.128	1.331	1.180	1.325
	(4.47)	(3.52)	(0.55)	(0.75)	(0.75)	(0.68)
Children 0–15	0.675*	1.221	0.629*	0.843	0.621*	0.826
	(−5.51)	(1.87)	(−2.64)	(−0.47)	(−2.66)	(−0.48)
Qualification (reference: no qualifications)						
First/higher degree	3.474*	4.493*	5.418*	9.380*	5.987*	9.628*
	(9.96)	(7.16)	(8.48)	(6.74)	(8.86)	(6.13)
Other higher	2.524*	2.373*	3.632*	3.802*	3.536*	4.096*
	(8.12)	(4.44)	(7.33)	(4.58)	(7.25)	(4.36)
GCSE, A levels	2.323*	2.461*	3.211*	3.779*	3.109*	4.278*
	(8.21)	(5.00)	(7.23)	(4.93)	(7.12)	(4.86)
Recent unemployment spell $\leqslant$ 3 months					2.168*	2.023**
					(4.54)	(2.10)
Recent unemployment spell > 3 months					2.052*	3.937*
					(4.95)	(3.60)
Recent inactivity spell $\leqslant$ 3 months					0.519**	0.659
					(−2.31)	(−0.85)
Recent inactivity spell > 3 months					0.382*	0.308*
					(−4.16)	(−2.88)
Recent occupational change					0.761	1.017
					(−1.89)	(0.05)
Earlier unemployment spell $\leqslant$ 3 months					1.525*	0.994
					(2.99)	(−0.02)
Earlier inactivity spell > 3 months					1.649**	5.395*
					(2.28)	(4.05)
Earlier occupational change					0.953	0.747
					(−0.31)	(−0.90)
Log-likelihood	−3720	−1454	−3491	−1403	−3397	−1354
Observations	5,980	2,307	5,980	2,307	5,980	2,307

Notes: Odds ratios from (random effects) logit models where the dependent variable is 1 if the job seeker is employed and 0 if unemployed. *T*-statistics in parenthesis, standard errors are clustered by individuals in the logit model. All models also include region and year dummies and means of time-varying covariates over time. *Statistically significant at 1%; **statistically significant at 5%.

Therefore education affects the probability of being an employed rather than unemployed job seeker even when accounting for unobserved individual characteristics. Given the strong correlation between past and current unemployment (Arulampalam *et al.*, 2000; Gregg 2001), this could be related to the lower probability of the highly educated experiencing unemployment in the past. We examine this in column (3) by adding information on employment histories. However, the estimates on the education variables in column (3) are very similar to those in column (2), indicating that the impact of education on the employment status of job seekers is not related to differences in employment histories of people with different educational outcomes. Education still plays a statistically and economically significant role. For example, a man with a degree is six times more likely than an otherwise similar man with no qualifications to be an employed rather than unemployed job seeker.

The coefficients on the previous labour market experience variables are also revealing. Past experiences of unemployment increase the probability that the job seeker is employed rather than unemployed: those with a previous unemployment spell are more likely to be currently employed and seeking a new job. This is consistent with turnover in unemployment and the unemployed being on average recruited into low quality jobs. They find a job but keep searching for a better job while employed. Table 5 also shows that – especially for women – the impact on the status of job seekers of longer unemployment spells is larger than the impact of shorter unemployment spells, and that earlier spells are less important than recent ones. This is consistent with a no-pay low-pay cycle. Those who suffered recent unemployment spells are more likely than those who did not to be searching on-the-job, while women who experience unemployment more than one year previously are just as likely to be an employed as an unemployed job seeker. A recent inactivity spell reduces the probability that a male job seeker is employed rather than unemployed. Men may move from economic inactivity into unemployment and then from unemployment into a (bad) job in which they keep searching for a new (good) job. Earlier spells of inactivity have positive effects for both men and women. People with an inactivity spell more than one year ago are more likely to be employed job seekers rather than unemployed job seekers, consistent with people moving from economic inactivity to unemployment and then into a job from which they continue to search. Occupational changes reduce the probability that the job seeker is employed rather than unemployed, suggesting an unstable career history, although the odds ratios are not statistically significant.

Differences over the business cycle

Our final contribution is to use the combined annual and quarterly LFS to examine whether differences between employed and unemployed job seekers vary over the business cycle. This provides evidence on whether the unemployed compete more with employed job seekers during periods of economic growth than recessions. Here we use annual LFS data from 1984 onwards to be able to identify any effects from the recession of the early 1990s. Table 6 presents marginal effects from probit models where the dependent variable takes the value one if the job seeker is employed and zero if unemployed. Table 7 presents marginal effects from models of search method used. These are estimated for the whole period (1984–2009) and separately for the sub-periods of increasing and decreasing unemployment.

TABLE 6

Determinants of being an employed rather than unemployed job seeker over the business cycle, LFS 1984–2009

	All years	*Decreasing unemployment*	*Increasing unemployment*
Men			
Age	0.030*	0.031*	0.028*
	(35.00)	(31.88)	(16.67)
Age^2	0.000*	0.000*	0.000*
	(−39.75)	(−36.37)	(−19.06)
Married/cohabiting	0.136*	0.140*	0.127*
	(34.58)	(29.34)	(18.57)
Degree or higher	0.389*	0.399*	0.366*
	(72.85)	(61.27)	(39.30)
Other qualifications	0.216*	0.223*	0.199*
	(59.31)	(50.95)	(31.89)
Prop. job seekers employed (%)	0.008*	0.008*	0.008*
	(28.92)	(26.16)	(15.55)
Searching for 3–12 months	−0.063*	−0.063*	−0.064*
	(−14.37)	(−11.34)	(−8.65)
Searching for >12 months	−0.153*	−0.162*	−0.131*
	(−30.12)	(−24.62)	(−21.01)
Log-likelihood	−49,329	−33,660	−15,631
Observations	88,294	60,435	27,859
Women			
Age	0.026*	0.028*	0.022*
	(24.97)	(22.23)	(12.35)
Age^2	0.000*	0.000*	0.000*
	(−23.10)	(−20.67)	(−11.28)
Married/cohabiting	−0.007	−0.012	0.004
	(−1.31)	(−1.81)	(0.49)
Degree or higher	0.380*	0.386*	0.368*
	(57.50)	(49.85)	(29.74)
Other qualifications	0.197*	0.198*	0.193*
	(43.36)	(36.20)	(23.77)
Prop. job seekers employed (%)	0.008*	0.007*	0.009*
	(16.41)	(14.52)	(8.92)
Searching for 3–12 months	−0.063*	−0.067*	−0.053*
	(−12.40)	(−11.33)	(−5.69)
Searching for >12 months	−0.133*	−0.141*	−0.114*
	(−20.18)	(−17.39)	(−10.58)
Log-likelihood	−45,473	−31,375	−14,081
Observations	72,203	49,806	22,397

Notes: Marginal effects from a probit model where the dependent variable is 1 if job seeker is employed and 0 if unemployed. *T*-statistics in parenthesis, standard errors are clustered by year × regions. All models also include region and year dummies. *Statistically significant at 1%; **statistically significant at 5%.

TABLE 7

The impact of being an employed rather than unemployed job seeker on main job search method used over the business cycle, LFS 1984–2009

Base: Advertising and answering ads in newspapers	*Men* *Degree or higher* ($N = 3,708^{\#}$)	*Other qualifications* ($N = 12,843$)	*No qualifications* ($N = 5,078$)	*Women* *Degree or higher* ($N = 3,724$)	*Other qualifications* ($N = 11,173$)	*No qualifications* ($N = 3,546$)
Increasing unemployment						
Job centre, careers office, job club	−0.134*	−0.281*	−0.325*	−0.113*	−0.176*	−0.184*
	(0.016)	(0.012)	(0.018)	(0.011)	(0.009)	(0.020)
Direct approach to employers	−0.007	−0.002	0.004	−0.008	−0.014*	0.003
	(0.012)	(0.005)	(0.008)	(0.009)	(0.005)	(0.009)
Ask friends and relatives	0.008	0.030*	0.043*	0.005	0.012*	0.024**
	(0.009)	(0.005)	(0.009)	(0.008)	(0.004)	(0.010)
Do anything else	0.038*	0.032*	0.018*	0.041*	0.033*	0.018*
	(0.010)	(0.004)	(0.005)	(0.011)	(0.004)	(0.006)
	Degree or higher ($N = 8,555$)	*Other qualifications* ($N = 33,189$)	*No qualifications* ($N = 18,691$)	*Degree or higher* ($N = 7,033$)	*Other qualifications* ($N = 30,135$)	*No qualifications* ($N = 12,637$)
Decreasing unemployment						
Job centre, careers office, job club	−0.161*	−0.295*	−0.317*	−0.101*	−0.177*	−0.159*
	(0.011)	(0.007)	(0.009)	(0.010)	(0.006)	(0.009)
Direct approach to employers	−0.019*	0.007**	0.020*	−0.015**	−0.003	0.011*
	(0.007)	(0.003)	(0.004)	(0.007)	(0.003)	(0.004)
Ask friends and relatives	−0.007	0.008*	0.028*	−0.001	0.000	0.008
	(0.005)	(0.003)	(0.004)	(0.006)	(0.002)	(0.005)
Do anything else	0.028*	0.024*	0.012*	0.014	0.020*	0.009*
	(0.007)	(0.002)	(0.002)	(0.008)	(0.002)	(0.003)

Notes: Marginal effects associated with being an employed rather than unemployed job seeker, estimated using multinomial probit models where the dependent variable is 1 if main method of job search is using a job centre etc, 2 if uses direct approach to employers, 3 if asks friends/relatives, 4 if does anything else and 5 if responds to adverts in newspapers (reference category). Standard errors, clustered by years/quarters × regions, in parentheses. All models also include age, dummies for marital status, presence of dependent children in the household, for the length of search, region, year and quarter. #Excludes Northern Ireland. *Statistically significant at 1%; **statistically significant at 5%.

Estimates in Table 6 are consistent with those using quarterly data in Table 1: Column (2). The probability of being an employed rather than unemployed job seeker increases with age (at a declining rate), with education and with marriage (although the effect is not statistically significant for women). Having no qualifications increases the probability of being an unemployed job seeker. This is again suggestive of a low degree of substitution between unemployed and employed job seekers. A comparison of the estimates in periods of rising and falling unemployment suggests that education has smaller impacts in periods of increasing than of decreasing unemployment, but these differences are not large.

In terms of job search methods used, estimates in Table 7 are consistent with those using quarterly data (Table 3). Employed job seekers are more likely than the unemployed to answer advertisements in newspapers etc. and do anything else and less likely to use all other methods. Estimates differ in periods of falling and rising unemployment – differences between employed and unemployed job seekers in search method used are generally less pronounced in periods of increasing than falling unemployment. Again however such differences are small.

We find that differences between employed and unemployed job seekers are smaller during recessions, suggesting that unemployed and employed job seekers become more similar during economic downturns than periods of economic growth. Nevertheless differences remain and remain statistically significant. The persistence in differences over the business cycle suggests that the low degree of substitution between employed and unemployed of job seekers does not change substantially with economic conditions or with the stock of unemployed.

V. Conclusions

We use data from the LFS from 1984 to 2009 and from the BHPS from 1991 to 2007 to investigate the extent to which employed and unemployed job seekers have similar individual characteristics, preferences over working hours and job search strategies. The job search literature suggests that competition with employed job seekers reduces the job opportunities available to the otherwise similar unemployed and assumes that both compete for the same jobs. We investigate the extent to which employed and unemployed job seekers are similar – and therefore compete for the same jobs. We find systematic differences between them in terms of their individual characteristics, employment histories, job search strategies and preferences in terms of working hours. Our interpretation is that this contradicts the assumption that employed and unemployed job seekers compete for the same jobs.

Our initial analysis suggests that employed job seekers are in worse jobs than employees who do not search. There is evidence that the unemployed apply to and accept different (worse) jobs than employed job seekers and keep searching for better employment opportunities once employed. We also find significant differences in the characteristics of employed and unemployed job seekers. The highly educated are much more likely to be employed rather than unemployed job seekers and conditional on the level of education, employed and unemployed job seekers have different preferences in terms of working hours. Employed job seekers have much stronger preferences for full-time jobs than the unemployed. Employed and unemployed job seekers also use different search methods.

These differences largely persist over the business cycle. This evidence is consistent with the unemployed having lower expectations in terms of job sought than employees and suggests that employed and unemployed job seekers are unlikely to apply for similar jobs.

Our estimates also indicate that employed and unemployed job seekers have different employment histories and suggest that the unemployed transit into 'bad' jobs from which they keep looking for a 'good' job. Employed job seekers may have accepted job offers which were not ideal in order to exit unemployment and then engage in on-the-job search. However, they tend to be in unstable jobs, with few chances to find a 'good' job and therefore to stop searching. Such people might be locked in a low-pay no-pay cycle, while others, with comparatively worse individual characteristics, might never find a job at all.

Hence, contrary to what is often assumed in the literature, we find evidence that employed and unemployed job seekers are systematically different and unlikely to directly compete with each other. This is consistent with a segmented labour market in which the job search activities of employees are unlikely to affect unemployed job seekers, even during periods of low labour demand. Our estimates indicate that the higher competition that the unemployed face in periods of recession comes from other unemployed people rather than from people engaging in on-the-job search – who tend to search for different types of jobs. This suggests that policies should focus on creating job opportunities to allow the unemployed to return to work, while ensuring that these jobs provide the platform for more stable and lasting employment. This will facilitate progression into 'good' jobs in the primary sector and minimize the risk of no pay-low pay cycles.

References

Anderson, P. M. and Burgess, S. M. (2000). 'Empirical matching functions: estimation and interpretation using state-level data', *The Review of Economic and Statistics*, Vol. 82, pp. 93–102.

Arulampalam, W., Booth, A. L. and Taylor, M. P. (2000). 'Unemployment persistence', *Oxford Economic Papers*, Vol. 52, pp. 24–50.

Atkinson, J., Giles, L. and Meager, N. (1996). Employers, Recruitment and the Unemployed, Report 325, Institute for Employment Studies, Brighton, UK.

Behrenz, L. (2001). Who Gets the Job and Why? An Explorative Study of Employers' Recruitment Beahavior. *Journal of Applied Economics* IV(2): 255–278.

van den Berg, G. J. and Ridder, G. (1998). 'An empirical equilibrium search model of the labor market', *Econometrica*, Vol. 66, pp. 1183–1221.

Böheim, R. and Taylor, M. P. (2002). 'The search for success: do the unemployed find stable employment?' *Labour Economics*, Vol. 9, pp. 717–735.

Booth, A. L., Francesconi, M. and Frank, J. (2002). 'Temporary jobs: stepping stones or dead ends?' *The Economic Journal*, Vol. 112, pp. F189–F213.

Burdett, K. and Mortensen, D. T. (1998). 'Wage differentials, employer size, and unemployment', *International Economic Review*, Vol. 39, pp. 257–273.

Eckstein, Z. and van den Berg, G. J. (2007). 'Empirical labor search: a survey', *Journal of Econometrics*, Vol. 136, pp. 531–564.

Eriksson, S. and Gottfries, N. (2005). 'Ranking of job applicants, on-the-job search, and persistent unemployment', *Labour Economics*, Vol. 12, pp. 407–428.

Gorter, C., Nijkamp, P. and Rietveld, P. (1993). 'The impact of employers' recruitment behaviour on the allocation of vacant jobs to unemployed job seekers', *Empirical Economics*, Vol. 18, pp. 251–269.

Gregg, P. (2001). 'The impact of youth unemployment on adult unemployment in the NCDS', *The Economic Journal*, Vol. 111, pp. F626–F653.

Kambourov, G. and Manovskii, I. (2008). 'Rising occupational and industry mobility in the United States: 1968–97', *International Economic Review*, Vol. 49, pp. 41–79.
Lindeboom, M., van Ours, J. C. and Renes, G. (1994). 'Matching employers and workers: an empirical analysis on the effectiveness of search', *Oxford Economic Papers*, Vol. 46, pp. 45–67.
Longhi, S. and Brynin, M. (2010). 'Occupational change in Britain and Germany', *Labour Economics*, Vol. 17, pp. 655–666.
Longhi, S. and Taylor, M. (2013a). 'Occupational change and mobility among employed and unemployed job seekers', *Scottish Journal of Political Economy*, Vol. 60, pp. 71–100.
Longhi, S. and Taylor, M. (2013b). 'Employed and unemployed job seekers and the business cycle', Working Paper 2013-02, Institute for Social and Economic Research, University of Essex.
McGovern, P., Smeaton, D. and Hill, S. (2004). 'Bad jobs in Britain: nonstandard employment and job quality', *Work and Occupations*, Vol. 31, pp. 225–249.
Mumford, K. and Smith, P. N. (1999). 'The hiring function reconsidered: on closing the circle', *Oxford Bulletin of Economics and Statistics*, Vol. 61, pp. 343–364.
Mundlak, Y. (1978). 'On the pooling of time series and cross section data', *Econometrica*, Vol. 46, pp. 69–85.
ONS (2012a). *Labour Market Statistics: February 2012*, Statistical Bulletin, Office for National Statistics, London, UK.
ONS (2012b). *Labour Market Flows: February 2012 (Experimental Statistics)*, Office for National Statistics London, UK.
van Ours, J. C. (1995). 'An empirical note on employed and unemployed job search', *Economics Letters*, Vol. 49, pp. 447–452.
Pissarides, C. A. (1994). 'Search unemployment with on-the-job search', *Review of Economic Studies*, Vol. 61, pp. 457–475.
Pissarides, C. A. and Wadsworth, J. (1994). 'On-the-job search. Some empirical evidence from Britain', *European Economic Review*, Vol. 38, pp. 385–401.
Rogerson, R., Shimer, R. and Wright, R. (2005). 'Search-theoretic models of the labor market: a survey', *Journal of Economic Literature*, Vol. 43, pp. 959–988.
Rosholm, M. and Svarer, M. (2004). 'Endogenous wage dispersion in a search-matching model', *Labour Economics*, Vol. 11, pp. 623–645.
Stewart, M. (2007). 'The interrelated dynamics of unemployment and low wage employment', *Journal of Applied Econometrics*, Vol. 22, pp. 511–531.
Weber, A. and Mahringer, H. (2008). 'Choice and success of job search methods', *Empirical Economics*, Vol. 35, pp. 153–178.