ISER Working Paper Series

Employed and Unemployed Job Seekers: Are they Substitutes?

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No. 2010-09
March 2010

INSTITUTE FOR SOCIAL & ECONOMIC RESEARCH

E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

www.iser.essex.ac.uk

Non-Technical Summary

Workers move from job to job and into and out of employment as they seek to maximise their wages and search for a suitable employer. Job search theory suggests that employed workers look for jobs that pay a higher wage than their current job, while the unemployed look for jobs that offer wages exceeding their reservation wage (the wage at which the unemployed are indifferent between accepting the job and continuing to search). Most models assume that all job seekers are the same, with employed and unemployed job seekers differing only in their labour force status and in the intensity and effectiveness of their search. Empirically however there is little evidence that employed and unemployed job seekers have similar characteristics. If not, then it prompts the question of whether they compete for the same jobs.

We use data from the British Labour Force Survey from 1984 to 2009 to identify: (1) differences in observable characteristics between employed people who search for another job and those who do not; (2) the extent to which employed and unemployed job seekers have similar individual characteristics, preferences over working hours and job search strategies; and (3) the extent to which this varies over the business cycle. If employed and unemployed job seekers are observationally different, or if they apply to different kinds of jobs, then in contrast to the assumptions made in the theoretical literature we cannot conclude that they are in direct competition for the same vacancies or that the experience and decisions of one group will influence the outcomes of the other.

Our results indicate that employed people who engage in on-the-job search tend to be in worse jobs than employed individuals who are not searching. There is some evidence that unemployed job seekers apply to – or accept – worse jobs than employed job seekers, but continue to search for better opportunities when employed. We also find significant differences in the characteristics of employed and unemployed job seekers, who differ in their preferences in terms of working hours. In addition employed and unemployed job seekers use different search methods, although differences are larger among the more highly educated. These differences persist over the business cycle.

Therefore in contrast to what is typically assumed in the literature, our evidence suggests that employed and unemployed job seekers are systematically different and are unlikely to directly compete for the same vacancies. Consequently the job search activities of employed people should not affect the outcomes of unemployed job seekers.

Employed and unemployed job seekers: Are they substitutes?*

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Abstract
The job search literature suggests that an increase in the proportion of job seekers who are employed reduces the probability of unemployed people finding a job. However, there is little evidence indicating that employed and unemployed job seekers have similar observed characteristics or that they apply for the same jobs. We use the British Labour Force Survey to compare employed and unemployed job seekers, and find differences in their individual characteristics, preferences over working hours, and job search strategies which do not vary with the business cycle. We conclude that unemployed people do not directly compete with employed job seekers.

Keywords: On-the-job search, unemployment, job competition
JEL Classification: J29, J60

* This paper forms part of the project "Job search in the UK 1990–2006", funded by the Leverhulme Trust Grant no. F/00 213/O; it also forms 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 in ISER. The support provided by the ESRC and the University of Essex is gratefully acknowledged. LFS data is available from the Data Archive at the University of Essex (www.data–archive.ac.uk).

1. Introduction

Workers move from job to job and into and out of employment as they attempt to maximise their wages and find a suitable employer. According to job search theory, employed workers look for better paying jobs while the unemployed look for jobs that offer wages exceeding their reservation wage (Burdett and Mortensen 1998). Most models assume that job seekers are homogeneous, with employed and unemployed job seekers differing only in their labour force status and in the intensity and effectiveness of the search. However there is little evidence that employed and unemployed job seekers are similar in their observed characteristics. This prompts the question of whether or not they compete for the same jobs. Our contribution to the literature is to compare and contrast the observable characteristics of employed and unemployed job seekers. If they are observationally different, or if they apply to different kinds of jobs, then in contrast to the assumptions made in the theoretical literature, 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 theoretical models of job search, both employed and unemployed job seekers apply for the same jobs (Burdett and Mortensen 1998; van den Berg and Ridder 1998). 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 (Eriksson and Gottfries 2005). Consequently the presence of employed job seekers should reduce the chances of unemployed people finding work (Rogerson et al. 2005).

The empirical literature has found support for the theoretical predictions that employers prefer hiring applicants who are already in work (Eckstein and van den Berg 2007). Some authors reach this conclusion by estimating matching functions using aggregate data on hirings and flows out of unemployment (e.g. Anderson and Burgess 2000), with a higher proportion of employed job seekers reducing the probability of unemployed people finding a job (Burgess 1993). Furthermore, it has been suggested that regional differences in the outflow from unemployment are related to regional differences in the competitiveness of unemployed compared to employed job seekers (Robson 2001). In this sense, employed and unemployed job seekers are seen as substitutes.

Blau and Robins (1990) use individual data on job search methods in the US and find that employed job seekers receive more job offers than the unemployed. However, they cannot distinguish between unemployment stigma and search intensity. More recently, Eriksson and Lagerstrom (2006) use Swedish data and also conclude that employed people are more likely than unemployed people to be contacted by potential employers, but part of the difference is related to differences in individual characteristics. Andrews et al. (2001) estimate the probability of matching using micro data on job applications and vacancies in England and conclude that employers rank job seekers by their labour market state, although the extent to which employed and unemployed job seekers apply for the same vacancies is still not clear. Finally, using the British Labour Force Survey for 1984, Pissarides and Wadsworth (1994) model the sequential decision of whether to search for a job, followed by the decision of whether to search while employed or unemployed. They compare employed people who search and who do not search, but do not assess differences between employed and unemployed job seekers.

The level of competition between employed and unemployed job seekers might also vary over the business cycle. Empirical research suggests that on-the-job search falls during recessions, and competition for jobs is more likely to come from the unemployed in economic downturns than during periods of economic growth (Burgess 1993; Pissarides 1994). Nevertheless, if employed and unemployed job seekers are observationally different, there is no reason to assume that unemployed people will be more negatively affected by the presence of employed job seekers in periods of growth than during downturns. On the other hand, if employed and unemployed job seekers are similar and unemployment is seen as a negative signal, employers are more likely to discriminate against unemployed job applicants during periods of economic growth when unemployment is low, but less likely to discriminate during an economic recession when a larger proportion of job seekers are likely to be unemployed.

In this paper we use data from the British Labour Force Survey (LFS) to identify (1) differences in observable characteristics between employed people who search for another job and those who do not; (2) the extent to which employed and unemployed job seekers have similar individual characteristics, preferences over working hours, and job-search strategies; and (3) the extent to which this varies over the business cycle. Our results suggest that employed and unemployed job seekers are

significantly different in their individual characteristics (especially education), preferences over working hours, and job-search strategies, and that such differences do not vary substantially over the business cycle. We conclude that, in contrast to the assumptions made in the theoretical literature, unemployed people are unlikely to be in direct competition with employed job seekers.

2. Data

2.1. The Labour Force Survey

We use data from the British LFS, a nationally representative household survey which collects data on a large number of individual and household characteristics, focussing in particular on employment status, education, and job characteristics. The LFS data have been collected annually from 1983 to 1991 and quarterly since 1992.[1] Currently, LFS data are available up to the third quarter of 2009. The advantage of the LFS is that it asks a series of questions on job search to all respondents: not only to the unemployed, but also to employed people and to those classified as temporarily inactive. This allows us to compare and contrast observable characteristics of those in work who search for a new job and those who do not search, as well as of employed and unemployed job seekers. Clearly, there are comparability issues between the annual and quarterly data. Fortunately, the questions on job search activities are rather similar over time; however, although it is possible to identify whether people are searching for a job, fewer details about the type of job sought were asked before 1992.

For the purpose of this analysis, we define job seekers as those who satisfy the following conditions: (1) They are looking for a job as an employee; (2) They have been looking for work in the last four weeks; and (3) Mention at least one method of job search. The small proportion (less than one percent) of unemployed people who do not satisfy these three conditions is excluded from the analysis. We focus on men and women of working age (16–64 for men and 16–59 for women) who are either employed or unemployed. The self-employed, people in government training programs, unpaid family workers and economically inactive people are excluded; these amount to around six percent of all job seekers.

The quarterly LFS data have a rotating panel structure, in which people are interviewed for up to five successive quarters. To avoid repeated observations per

[1] Although LFS data were collected biannually between 1975 and 1983, we use only data from 1984 onwards as prior to 1984 unemployment was not defined according to the ILO standard.

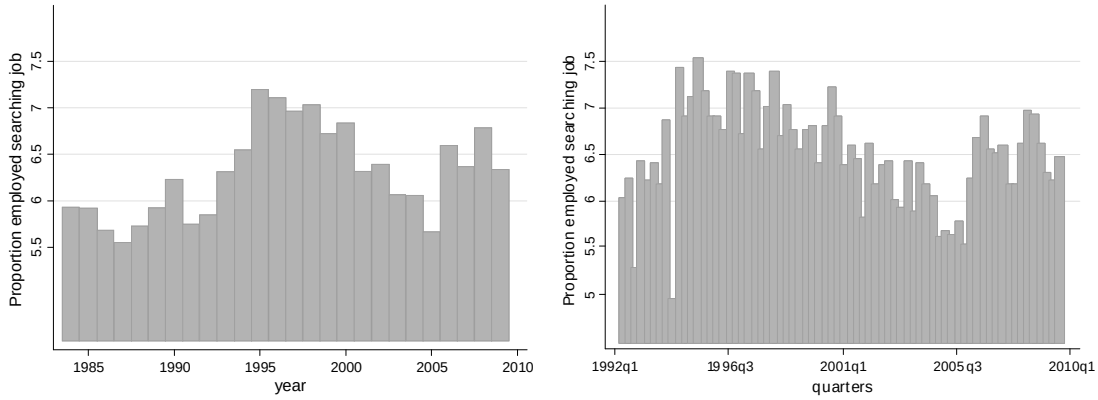
individual for the data from 1992 onwards, in most models we only use data from the first interview within the quarterly panel structure (to avoid problems of attrition); the exception is in models analysing the determinants of on-the-job search for which we only use data from the fifth interview (when questions are asked on wages).

Using the individual sample weights provided in the LFS we can estimate total employment and its variation across quarters at the regional level, the number and proportions of employed people engaging in on-the-job search, and the proportion of job seekers who are employed.

2.2. Descriptive statistics

Figure 1 shows the proportion of employed people who are looking for a job. The right panel shows the quarterly data, and the left panel shows the annual series, in which the 1992–2009 quarters are aggregated by calendar year.

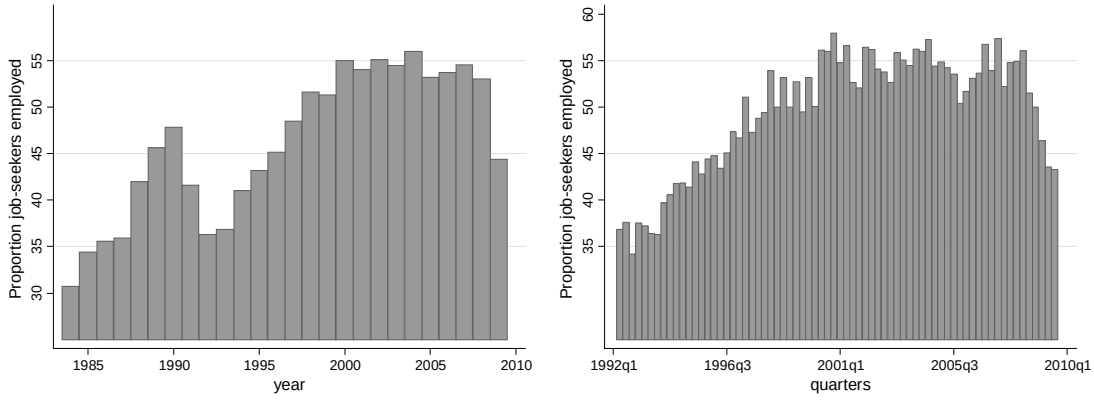
Figure1: Proportion of employed people looking for a job (yearly and quarterly series)



In a given year or quarter, between 5 and 7.5 percent of employed people engage in on-the-job search which is consistent with Pissarides and Wadsworth (1994). The figure suggests that the proportion of employed people engaging in on-the-job search is remarkably stable over time. Furthermore, the variations over time do not coincide with periods of growth and recession. Although there is evidence that on-the-job search increased during the period of economic growth from the early to late 1990s, it subsequently fell through the late 1990s and early 2000s when the economy was still growing. This casts some doubts on the common assumption that on-the-job search increases in periods of growth and decreases in periods of recession (e.g. Mumford and Smith 1999; Anderson and Burgess 2000).

Figure 2 shows the proportion of job seekers who are employed. This varies from 30 percent to more than 50 percent, and more clearly follows variations in the business cycle – a larger proportion of job seekers are employed in periods of growth. However, as Figure 1 suggests that the proportion of employed people engaging in on the job search varies little over time, changes in the proportion of job seekers who are employed are mostly due to changes in the unemployment rate.

Figure 2: Proportion of job seekers who are employed (yearly and quarterly data)



The proportions of the different types of job seekers by gender are shown in Table 1. The sample averages for the quarterly series in the top panel are broadly consistent with those for the annual series (bottom panel). Between six and seven percent of employed workers look for a job, with almost no difference between men and women. Looking at the quarterly series, the vast majority of job seekers are either unemployed or employed and looking for a new job; compared to men, women are more likely to look for an additional job (which reflects the prevalence of part-time employment among women). Among men, the majority of job seekers are unemployed (55%) while among women the majority are employed (53%). Although the longer time series in the bottom panel shows that for both men and women the majority of job seekers are unemployed, this difference is smaller among women than men (52% compared with 59%).

Table 1: Proportion of people searching for a job

Quarterly Data	Men		Women	
Employed not searching	93.68		93.54	
Employed searching new job	5.99	42.56	5.78	47.62
Employed searching additional job	0.33	2.38	0.68	5.56
Unemployed searching		55.06		46.82
Total	100	100	100	100
Annual Data				
Employed not searching	94.09		93.67	
Employed searching a job	5.91	40.49	6.33	48.02
Unemployed searching		59.51		51.98
Total	100	100	100	100

3. Theoretical background

Many theoretical models of job search analyse competition between employed and unemployed job seekers by assuming that they are substitutes and apply to the same vacancies (e.g. Burdett and Mortensen 1998; van den Berg and Ridder 1998). However, others such as Pissarides (1994) might indirectly suggest otherwise. In Pissarides' (1994) model the labour market is characterised by 'good' and 'bad' jobs and employed job seekers only apply for and accept jobs that are better than their current one; unemployed people will be more likely to be hired in 'bad' jobs and to engage in on-the-job search after accepting the 'bad' job. As a consequence, 'good' jobs should be mostly 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; while unemployed people should mostly apply to 'bad' jobs. Employed and unemployed job seekers, therefore, should not directly compete with each other, and people entering the labour market are more likely to compete for 'bad' than for 'good' jobs.

There are other reasons why employed and unemployed job seekers might not directly compete with each other, but for which there are currently no formal theoretical models. First of all, it is well-known that unemployment is much more likely among people with low than people with high education; furthermore, the probability of on-the-job search also varies with education. If most employed job seekers have high levels of education, while most of the unemployed have low levels of education, they are unlikely to apply to the same vacancies. Much less is known, about characteristics of jobs sought, such as occupation, preferences over working

hours, or job search methods. Weber and Mahringer (2008) find self-selection in terms of job-search methods and that the effectiveness of different search methods is related to the labour market status of the job seeker.

Even when they apply for the same jobs, if employed job seekers are preferred to unemployed people, because of for example more occupation-specific human capital (Rosholm and Svarer 2004), differences in the quality of jobs obtained might be partly due to differences in experience and previous careers. On the other hand, if unemployment is interpreted as a negative signal by potential employers, it might generate discrimination against job seekers who are unemployed, thus partly explaining differences in outcomes. There is more scope to discriminate against unemployed job seekers in periods of growth when unemployment is low, while discrimination would be harder in periods of recession when most job seekers are unemployed. Furthermore, during recessions high-quality workers might also lose their job, raising the average quality of unemployed job seekers.

4. Modelling strategy

Our estimation strategy involves three distinct steps. The first is to compare characteristics of employees who engage in on-the-job search with those who do not. The second is to examine the extent to which employed and unemployed job seekers are similar in terms of their individual characteristics, the type of job sought (part- or full-time), and the main method of search used. These models are estimated using the quarterly series of the LFS from 1992 to 2009. The third step is to establish whether or not these patterns vary over the course of the business cycle; these models require the combination of the quarterly and annual series of the LFS from 1984 to 2009. We describe each of these steps in more detail below.

4.1. Who searches on the job?

The first stage of our estimation procedure is to compare the characteristics of employees who participate in on-the-job search with those who do not. The implication from economic theory is that workers who engage in on-the-job search are in worse jobs, with lower wages and less permanent positions than those who do not search. If so, then differences between employed and unemployed job seekers are not merely reflecting differences between employed and unemployed people in general. To analyse the determinants of on-the-job search we use a multinomial probit model

conditional on being employed. We model the probability of employed people of being in one of three mutually-exclusive states *j*: 0 = not searching; 1 = searching for a new job; 2 = searching for an additional job; via the latent variable y_{ij}:

$$y_{ij} = X'_{1i} \beta_j + \varepsilon_{ij} \quad (1)$$

where ε_{ij} are i.i.d. and follow a multivariate normal distribution; *i* represents individuals and *j* represents choices. Hence, the probability of observing individual *i* in state *q* is the probability that $y_{iq} > y_{ij}$ for each $j \neq q$.

Explanatory variables in X_1 include both individual and job characteristics. Among the individual characteristics we include age, household structure, and education. Job characteristics include job type, sector of employment, occupation, job tenure, wages, and hours of work. The models also include two variables aggregated at the regional level: the quarter-to-quarter change in the number of employees in that region, and the proportion of job seekers that are employed in that quarter and region.[2] These capture local labour market conditions which we expect to influence the decision to engage in on-the-job search (e.g. Pissarides 1994). Dummies for region, year and quarter are also included.

4.2. Differences between employed and unemployed job seekers

We analyse differences in the characteristics of employed and unemployed job seekers by means of a multinomial probit model conditional on search. We model the probability that the job seeker is in one of three mutually-exclusive states *j*: 1 = employed looking for a new job; 2 = employed looking for an additional job; 3 = unemployed looking for a job; via the latent variable z_{ij}:

$$z_{ij} = X'_{2i} \gamma_j + \xi_{ij} \quad (2)$$

where ξ_{ij} are i.i.d. and follow a multivariate normal distribution. Hence, the probability of observing individual *i* in status *q* is the probability that $z_{iq} > z_{ij}$ for each

[2] Besides the variation over time, variation across regions is also important. In his analysis of the matching function Robson (2001) suggests that regional differences in the outflow from unemployment are mostly due to differences in the relative competitiveness of unemployed job seekers rather than in regional variations in hirings. Because we include these aggregate explanatory variables, the standard errors of the models are clustered over time and regions.

$j \neq q$. Explanatory variables in X_2 include the individual characteristics and local labour market conditions variables discussed previously.[3]

If employed and unemployed job seekers have different preferences, then they are unlikely to apply for the same vacancy and they might not, therefore, directly compete with each other for the same jobs. The analysis of whether employed and unemployed job seekers have similar preferences in terms of working hours is based on a multinomial probit model in which the dependent variable distinguishes between three states: 1 = preference for a full-time job, 2 = preference for a part-time job, or 3 = no preference. The explanatory variables are the same used in the previous model, with the exception of the two macro variables which are unlikely to affect preferences over working hours. To analyse differences between the different types of job seekers we introduce variables indicating whether the individual is employed and looking for a new job and employed looking for an additional job, with unemployed used as reference group.

Finally, a similar model is estimated to analyse the extent to which employed and unemployed job seekers use the same search methods. If employed and unemployed job seekers use different methods, with different levels of effectiveness, those using the least effective method are likely to be disadvantaged in their job search. Alternatively, if different types of jobs are advertised using different methods, the choice of search method might be related to the type of job sought.[4] The dependent variable distinguishes between five search methods: 1 = job centre, careers office or private employment agency; 2 = direct approach to employers; 3 = ask friends and relatives; 4 = do anything else; with 5 = advertising and answering adverts in newspapers etc. as reference group. The explanatory variables are the same as in the analysis of preferences over working hours.

4.3. Differences over the business cycle

To estimate whether differences between employed and unemployed job seekers vary over the business cycle, we combine the annual and the quarterly series of the LFS. We then estimate separate models for periods when unemployment rates were increasing and decreasing. This allows us to identify whether the inflow to

[3] Since the aim is to compare employed and non–employed job seekers, no job characteristics can be included in this part of the analysis.

[4] Van Ours (1995) argues that it is by using different recruitment channels for the same vacancy that employers introduce competition between employed and unemployed job seekers.

unemployment makes the unemployment stock more similar to that of employed job seekers in economic downtowns than in periods of economic growth. Periods of increasing unemployment rate include 1984, 1991, 1992, 1993, and the years between 2005 and 2009; all other years are classified as periods of decreasing unemployment.[5] Finally, the quarterly data are pooled into annual data, keeping only one observation per individual. The specification of the models differs slightly from those described previously because of inconsistencies over time in data availability.

5. Empirical results

We first discuss the results from the models analysing the determinants of on-the-job search for the period 1992–2009. We then present two sets of results for models comparing employed and unemployed job seekers. The first relate to 1992–2009, including all information available in the quarterly data. The second relate to a reduced specification covering the period 1984–2009. The latter are then estimated separately for periods of increasing or decreasing unemployment.

5.1. Determinants of on-the-job search

Table 2 presents results from models of the determinants of on-the-job search, estimated separately for men and women. Consistent with the literature, higher wages and longer job tenure reduce the probability of engaging in on-the-job search. Therefore workers in stable, high wage jobs have a lower probability of looking for a new or additional job. On-the-job search increases – non-linearly – with age. Married or cohabiting workers are less likely to engage in on-the-job search, but with large differences between men and women: the coefficient is –0.406 for women looking for an additional job and –0.271 for women looking for a new job, but only –0.183 and –0.064 respectively, for men. Similarly, dependent children reduce on-the-job search, but the regression coefficient is statistically significant only for women. For both men and women, the probability of looking for a new job increases with education. However, qualifications do not seem to have an impact on the probability of looking for an additional job.

[5] Alternatively, we can estimate the models separately for periods with high or low – rather than increasing or decreasing – unemployment. If we use as a threshold an unemployment rate of seven percent, then we would classify the years between 1998 and 2008 as periods of low unemployment, and all the remaining years (from 1984 to 1997, plus 2009) as periods of high unemployment. The results are not sensitive to such changes in the definition of business cycles.

Table 2: Determinants of on-the-job search

	Men		Women	
Reference: Employed not searching	Employed searching new job	Employed searching additional job	Employed searching new job	Employed searching additional job
Age	0.077 ***	0.080 ***	0.048 ***	0.013
	(0.006)	(0.018)	(0.007)	(0.017)
Age square	–0.001 ***	–0.001 ***	–0.001 ***	–0.000
	(0.000)	(0.000)	(0.000)	(0.000)
Married/cohabiting	–0.064 ***	–0.183 **	–0.271 ***	–0.406 ***
	(0.021)	(0.071)	(0.022)	(0.053)
Whether dependent children	–0.023	–0.101	–0.049 **	–0.143 **
	(0.020)	(0.061)	(0.023)	(0.059)
NVQ level 4 and above	0.636 ***	0.217	0.675 ***	0.146
	(0.046)	(0.157)	(0.050)	(0.112)
NVQ level 3	0.320 ***	0.140	0.419 ***	0.116
	(0.045)	(0.142)	(0.050)	(0.106)
NVQ level 2 and below	0.302 ***	0.112	0.316 ***	–0.075
	(0.044)	(0.146)	(0.048)	(0.099)
Other qualifications	0.202 ***	0.217	0.250 ***	–0.026
	(0.046)	(0.158)	(0.052)	(0.114)
Job temporary	0.618 ***	0.222 **	0.575 ***	0.315 ***
	(0.035)	(0.093)	(0.034)	(0.073)
Part–time	0.288 ***	1.106 ***	–0.034	0.290 ***
	(0.049)	(0.119)	(0.031)	(0.099)
Gross hourly wage	–0.026 ***	–0.029 ***	–0.028 ***	–0.012
	(0.002)	(0.010)	(0.003)	(0.009)
Job tenure	–0.041 ***	–0.043 ***	–0.027 ***	–0.033 ***
	(0.004)	(0.012)	(0.005)	(0.013)
Job tenure square	0.000	0.001	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.001)
Public sector	–0.053 **	0.164 **	–0.053 **	0.127 **
	(0.025)	(0.073)	(0.022)	(0.052)
Usual hours	–0.001	–0.009 **	0.003 ***	–0.020 ***
	(0.001)	(0.004)	(0.001)	(0.004)
Quarter-to-quarter change in number of employees in region	0.095	–1.293	–1.015	–2.737
	(0.862)	(2.977)	(1.140)	(2.438)
Proportion job seekers who are employed (%)	0.011 ***	–0.018 *	0.005	0.004
	(0.003)	(0.010)	(0.004)	(0.009)
Log likelihood	–27541		–22425	
Observations	125399		98225	

Standard errors in parenthesis are clustered by quarters x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: occupation (pre- and post- 2000), region, year, and quarter dummies.

Having a temporary job increases the probability of looking for a new – and to a lesser extent – an additional job. Those in part-time jobs are much more likely to be looking for an additional job, suggesting that the part-time position is unsatisfactory in terms of meeting labour supply preferences; and this is especially the case for men (with a regression coefficient of 1.106). One could speculate that such workers might

have accepted part-time jobs to escape unemployment, even though they might have preferred a full-time job.[6] People employed in the public sector are less likely to look for a new job but more likely to look for an additional job. Working longer hours reduces the probability of looking for an additional job and, for women, it increases the probability of looking for a new job.

In contrast to what is suggested in the literature, an increase in total employment does not increase the probability of engaging in on-the-job search. An increase in the proportion of job seekers who are employed has a positive impact on the probability of employed men looking for a new job, and a negative impact on their probability of looking for an additional job, but does not have any impact on job search activities of women.

These results suggest that, consistent with theory, employed people engaging in on-the-job search tend to be in worse jobs than employed people not searching. They have lower wages, are more likely to be in temporary or part-time work and in lower skilled occupations than those not searching. Descriptive statistics from the LFS support this conclusion: among people moving from job to job, the proportion of those whose new job is temporary is 23 percent, while the proportion of temporary jobs among those who move from unemployment into paid employment is 34 percent. Part-time work is also higher among those moving from unemployment into employment (41 percent) than among those moving from job to job (26 percent). Finally, among those moving from job to job 8.5 percent keep looking for a new job, while 1 percent keep looking for an additional job. Among those moving from unemployment into employment these proportions increase to 15 and 2 percent.

In the next section we analyse the extent to which employed and unemployed job seekers are similar, look for similar types of jobs in terms of working hours, and use similar search methods.

5.2. Differences between employed and unemployed job seekers

Table 3 presents estimates from models comparing the characteristics of employed and unemployed job seekers. The results show that the unemployed are on average

[6] Descriptive statistics from the LFS suggest that 18 percent of unemployed people who were looking for a full–time job accepted a part–time job, while 12 percent of those looking for a part–time job accepted a full–time job. Less than ten percent of job–to–job movers were looking for full–time work but accepted a part–time job, while the proportion of those looking for a part–time job who accepted a full–time job is 19 percent.

younger than employed job seekers, although the relationship is non-linear. Compared to the unemployed, employed job seekers are more likely to be married and less likely to have dependent children, and have on average higher levels of education.

Table 3: Similarities between employed and unemployed job seekers

	Men		Women	
Reference: Unemployed searching job	Employed searching new job	Employed searching additional job	Employed searching new job	Employed searching additional job
Age	0.143 ***	0.043 ***	0.138 ***	0.050 ***
	(0.005)	(0.009)	(0.006)	(0.009)
Age square	–0.002 ***	–0.001 ***	–0.002 ***	–0.001 ***
	(0.000)	(0.000)	(0.000)	(0.000)
Married/cohabiting	0.782 ***	0.421 ***	0.308 ***	0.105 ***
	(0.025)	(0.045)	(0.023)	(0.034)
Whether dependent children	–0.159 ***	–0.029	–0.566 ***	–0.113 ***
	(0.020)	(0.036)	(0.020)	(0.029)
NVQ level 4 and above	1.687 ***	1.052 ***	1.484 ***	0.868 ***
	(0.031)	(0.061)	(0.033)	(0.050)
NVQ level 3	1.194 ***	0.806 ***	1.079 ***	0.725 ***
	(0.032)	(0.058)	(0.036)	(0.050)
NVQ level 2 and below	0.960 ***	0.603 ***	0.849 ***	0.495 ***
	(0.029)	(0.055)	(0.029)	(0.044)
Other qualifications	0.693 ***	0.508 ***	0.541 ***	0.360 ***
	(0.034)	(0.063)	(0.034)	(0.054)
Quarter-to-quarter change in number of employees in region	1.386	2.530	1.854 *	–0.135
	(0.977)	(1.719)	(0.974)	(1.482)
Proportion job seekers employed (%)	0.043 ***	0.021 ***	0.036 ***	0.034 ***
	(0.003)	(0.006)	(0.004)	(0.005)
Log likelihood	–32606		–31818	
Observations	47916		39846	

Standard errors in parenthesis are clustered by quarters x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: region, year and quarter dummies.

Interestingly, the difference between unemployed and employed job seekers looking for a new job is often larger than the difference between unemployed and employed job seekers looking for an additional job. This suggests that unemployed job seekers are more similar to the employed who seek an additional job than the employed who seek a new job. In terms of education, for example, the coefficient for the dummy for the highest level of education (NVQ level 4 and above) for men is 1.687 for employed people looking for a new job, but 1.052 for those looking for an additional job; for women the coefficients are 1.484 and 0.868. This pattern is repeated with all other levels of education.

Table 4 presents results from models comparing preferences of employed and unemployed job seekers over working hours. Since Table 3 suggests that different types of job seekers have very different levels of education, we estimate models of preferences over working hours and of search methods used, separately by levels of education.[7] For brevity, we only show the coefficients on the variables of interest: the dummies identifying the type of job seeker.

Table 4: Preferences over working hours

Reference: No preference between part- and full time	Looking for full-time job	Looking for part-time job	Looking for full-time job	Looking for part-time job
NVQ level 4 and above	Men (n = 9910)		Women (n = 9121)	
Employed searching new job	1.437 ***	0.405 ***	1.492 ***	0.369 ***
	(0.072)	(0.101)	(0.063)	(0.071)
Employed searching add. job	–0.668 ***	1.976 ***	–0.231	1.722 ***
	(0.163)	(0.166)	(0.159)	(0.145)
NVQ level 3	Men (n = 10418)		Women (n = 6536)	
Employed searching new job	1.469 ***	0.355 ***	1.461 ***	0.175 **
	(0.073)	(0.091)	(0.069)	(0.074)
Employed searching add. job	–0.764 ***	1.734 ***	–0.100	1.269 ***
	(0.172)	(0.170)	(0.157)	(0.142)
NVQ level 2 and below	Men (n = 12672)		Women (n = 13808)	
Employed searching new job	1.561 ***	0.745 ***	1.452 ***	0.376 ***
	(0.071)	(0.087)	(0.048)	(0.049)
Employed searching add. job	–0.669 ***	2.332 ***	–0.178	1.332 ***
	(0.167)	(0.169)	(0.116)	(0.106)
Other qualifications	Men (n = 6702)		Women(n = 5229)	
Employed searching new job	1.503 ***	0.566 ***	1.482 ***	0.446 ***
	(0.099)	(0.125)	(0.082)	(0.082)
Employed searching add. job	–0.686 ***	2.769 ***	–0.049	1.338 ***
	(0.232)	(0.242)	(0.177)	(0.172)
No qualifications	Men (n = 110299)		Women (n = 6953)	
Employed searching new job	1.452 ***	0.856 ***	1.128 ***	0.321 ***
	(0.102)	(0.127)	(0.072)	(0.075)
Employed searching add. job	–0.900 ***	2.186 ***	–0.232	0.983 ***
	(0.218)	(0.206)	(0.158)	(0.148)

Standard errors in parenthesis are clustered by quarters x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: age, dummies for married/cohabiting, singles, presence of dependent children in the household, region, year and quarter.

The coefficients are in this case very similar across levels of education. Employed people looking for a new job have a strong preference for full-time positions (with regression coefficients all large than one) but are also more likely than unemployed people to say that they are looking for a part-time job. The employed looking for an

[7] The LFS suggests that among those with at least NVQ level 4 almost seven percent of employed people engage in on–the–job search; this proportion decreases to slightly less than six percent among those with NVQ level 3 and NVQ level 2 and below; to 5.5 percent among those with other qualifications; and to less than four percent among those with no qualifications.

additional job are much more likely than unemployed job seekers to be looking for a part-time job, and less likely to be looking for a full-time job. Unemployed people are most likely to answer that they have no preference between part- and full-time jobs, suggesting that this characteristic of the job is not important in deciding to which vacancy to apply. This reinforces the previous conclusions that unemployed job seekers are more likely to accept 'bad' jobs, and are not in direct competition with employed job seekers.

Tables 5a and 5b show the impact of being an employed and unemployed job seeker on the main method used to search for a job separately for men and women.

Table 5a: Job search method (men)

Reference: Advertising and answering ads in newspapers	Job centre Careers office Job club	Direct approach to employers	Ask friends and relatives	Do anything else
		NVQ level 4 and above (n = 9910)		
Employed searching new job	–0.579 ***	–0.325 ***	–0.210 ***	0.103
	(0.047)	(0.056)	(0.060)	(0.064)
Employed searching additional job	–0.308 ***	0.453 ***	0.515 ***	0.407 **
	(0.143)	(0.138)	(0.145)	(0.159)
		NVQ level 3 (n = 10421)		
Employed searching new job	–1.008 ***	–0.543 ***	–0.358 ***	–0.093 *
	(0.043)	(0.049)	(0.047)	(0.056)
Employed searching additional job	–0.467 ***	–0.091	0.208	0.050
	(0.126)	(0.135)	(0.135)	(0.162)
		NVQ level 2 and below (n = 12674)		
Employed searching new job	–1.043 ***	–0.335 ***	–0.185 ***	0.050
	(0.040)	(0.045)	(0.044)	(0.054)
Employed searching additional job	–0.961 ***	0.117	0.032	0.117
	(0.120)	(0.114)	(0.123)	(0.140)
		Other qualifications (n = 6704)		
Employed searching new job	–1.246 ***	–0.489 ***	–0.382 ***	–0.102
	(0.056)	(0.067)	(0.059)	(0.076)
Employed searching additional job	–1.156 ***	–0.156	–0.038	0.099
	(0.165)	(0.182)	(0.166)	(0.207)
		No qualifications (n = 10300)		
Employed searching new job	–1.258 ***	–0.507 ***	–0.324 ***	–0.189 **
	(0.053)	(0.066)	(0.057)	(0.083)
Employed searching additional job	–1.195 ***	–0.172	0.079	–0.133
	(0.182)	(0.194)	(0.170)	(0.248)

Standard errors in parenthesis are clustered by quarters x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: age, dummies for married/cohabiting, singles, presence of dependent children in the household, region, year and quarter.

All employed job seekers are less likely than the unemployed to use job centres, career offices, or job clubs, although differences between employed and unemployed job seekers with at least NVQ Level 4 is smaller than that among job seekers with

lower levels of education (especially for men). In fact a general conclusion from these results is that employed people looking for a new job are more likely to use advertisements in newspapers etc. (the reference category) than unemployed people, and are less likely to use all other methods. Among those with NVQ Level 4 or above, employed job seekers looking for an additional job are more likely than unemployed job seekers to directly approach potential employers, to ask friends and relatives, and to do 'anything else'. This emerges for both men and women.

Table 5b: Job search method (women)

Reference: Advertising and answering ads in newspapers	Job centre Careers office Job club	Direct approach to employers	Ask friends and relatives	Do anything else
		NVQ level 4 and above (n = 9124)		
Employed searching new job	–0. 606 ***	–0. 245 ***	–0. 115 *	0. 067
	(0. 052)	(0. 057)	(0. 068)	(0. 063)
Employed searching additional job	–0. 157	0. 385 ***	0. 348 ***	0. 349 ***
	(0. 118)	(0. 104)	(0. 126)	(0. 124)
		NVQ level 3 (n = 6537)		
Employed searching new job	–0. 716 ***	–0. 484 ***	–0. 335 ***	0. 020
	(0. 053)	(0. 058)	(0. 063)	(0. 072)
Employed searching additional job	–0. 735 ***	–0. 079	–0. 052	0. 161
	(0. 110)	(0. 114)	(0. 123)	(0. 130)
		NVQ level 2 and below (n = 13811)		
Employed searching new job	–0. 739 ***	–0. 297 ***	–0. 127 ***	0. 065
	(0. 038)	(0. 044)	(0. 047)	(0. 049)
Employed searching additional job	–0. 619 ***	0. 111	0. 455 ***	0. 409 ***
	(0. 084)	(0. 085)	(0. 084)	(0. 093)
		Other qualifications (n = 5233)		
Employed searching new job	–0. 728 ***	–0. 282 ***	–0. 077	0. 141 *
	(0. 066)	(0. 076)	(0. 075)	(0. 082)
Employed searching additional job	–0. 657 ***	–0. 249	0. 197	–0. 069
	(0. 131)	(0. 156)	(0. 134)	(0. 164)
		No qualifications (n = 10300)		
Employed searching new job	–0. 700 ***	–0. 168 **	–0. 029	0. 060
	(0. 057)	(0. 069)	(0. 068)	(0. 080)
Employed searching additional job	–0. 567 ***	–0. 050	0. 058	0. 114
	(0. 111)	(0. 139)	(0. 124)	(0. 163)

Standard errors in parenthesis are clustered by quarters x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: age, dummies for married/cohabiting, singles, presence of dependent children in the household, region, year and quarter.

The tables show differences between levels of education. Employed people looking for a new job use different search methods from unemployed people irrespective of education level. However those looking for an additional job use different methods from unemployed job seekers if they have the highest levels of education (NVQ Level 4 or above), while they use similar search methods if they have lower levels of education (where the coefficients of all search methods except

the use of job centres are not statistically significant). This pattern is more evident among men than women, which might suggest that competition between female employed and unemployed job seekers might be higher than the level of competition among male employed and unemployed job seekers.

In the next section we use the combined annual and quarterly parts of the LFS to analyse whether such differences between employed and unemployed job seekers vary over the business cycle, i.e. whether employed and unemployed job seekers are more similar to each other in periods of increasing unemployment

5.3. Differences over the business cycle

The results of the models analysing similarities between employed and unemployed job seekers over the business cycle are shown in Table 6, while the results of the models comparing job search methods used by employed and unemployed job seekers are shown in Table 7. The models are estimated for the whole period (1984–2009), and separately for the periods when the unemployment rate was increasing and falling.[8]

The results in Table 6 are consistent with those using the quarterly data in Table 3. Employed job seekers are on average older than unemployed job seekers and more likely to be married (although the coefficient is not statistically significant for women). Unemployed job seekers have on average lower education than those who are employed, and the differences are slightly larger among men than women. This once again confirms the low degree of substitution between unemployed and employed job seekers. Although differences between job seekers in terms of education are smaller in periods of increasing unemployment than in periods of decreasing unemployment, these differences are marginal. Therefore there is little evidence that differences between employed and unemployed job seekers are sensitive to the business cycle.

[8] It can be argued that the most recent recession is essentially different from previous ones as it is the first in which the UK has a flexible labour market. As a sensitivity analysis, we have run the models using the quarterly data, and excluding previous recessions. In this case the period of decreasing unemployment runs from the first quarter of 1994 to the second quarter of 2005, while the period of increasing unemployment runs from the third quarter of 2005 to the most recent quarter. The results are robust to this and the estimated regression coefficients change only marginally.

Table 6: Similarities between employed and unemployed job seekers over the business cycle

Reference: unemployed job seekers	All years	Increasing Unemployment	Decreasing unemployment
Men			
Age	0.117 ***	0.114 ***	0.119 ***
	(0.004)	(0.008)	(0.005)
Age square	–0.002 ***	–0.002 ***	–0.002 ***
	(0.000)	(0.000)	(0.000)
Married/cohabiting	0.632 ***	0.594 ***	0.651 ***
	(0.018)	(0.032)	(0.022)
Degree or higher	1.813 ***	1.684 ***	1.869 ***
	(0.027)	(0.044)	(0.033)
Lower qualifications	1.017 ***	0.922 ***	1.057 ***
	(0.017)	(0.027)	(0.021)
Prop. job seekers employed (%)	0.037 ***	0.036 ***	0.037 ***
	(0.001)	(0.002)	(0.001)
Log likelihood	–50883	–16129	–34721
Observations	89390	28349	61041
Women			
Age	0.094 ***	0.082 ***	0.100 ***
	(0.004)	(0.007)	(0.005)
Age square	–0.001 ***	–0.001 ***	–0.001 ***
	(0.000)	(0.000)	(0.000)
Married/cohabiting	0.016	0.052	0.000
	(0.021)	(0.036)	(0.026)
Degree or higher	1.503 ***	1.460 ***	1.523 ***
	(0.029)	(0.052)	(0.034)
Lower qualifications	0.784 ***	0.765 ***	0.790 ***
	(0.018)	(0.031)	(0.023)
Prop. job seekers employed (%)	0.032 ***	0.037 ***	0.030 ***
	(0.002)	(0.004)	(0.002)
Log likelihood	–46844	–14599	–32231
Observations	73607	23001	50606

Standard errors in parenthesis are clustered by year x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%. Other explanatory variables: region and year dummies.

Table 7: Impact of being an employed job seeker on job search method over the business cycle, by gender and qualification level

	Increasing unemployment					
	Men			Women		
Reference: Advertising and answering ads in newspapers	Degree or higher (n=3690)[#]	Lower qualifications (n=12797)	No qualifications (n=5058)	Degree or higher (n=3709)	Lower qualifications (n=11141)	No qualifications (n=3538)
Job centre, careers office, job club	–0.652 ***	–1.243 ***	–1.373 ***	–0.725 ***	–0.820 ***	–0.744 ***
	(0.083)	(0.061)	(0.089)	(0.083)	(0.044)	(0.082)
Direct approach to employers	–0.204 *	–0.418 ***	–0.495 ***	–0.172 **	–0.327 ***	–0.166 *
	(0.119)	(0.047)	(0.109)	(0.083)	(0.050)	(0.096)
Ask friends and relatives	–0.068	–0.179 ***	–0.257 ***	–0.064	–0.080	–0.014
	(0.107)	(0.052)	(0.086)	(0.109)	(0.052)	(0.101)
Do anything else	0.178 *	–0.015	–0.223 *	0.223 **	0.213 ***	0.093
	(0.105)	(0.065)	(0.131)	(0.105)	(0.054)	(0.112)
	Decreasing unemployment					
	(n=8588)	(n=33494)	(n=18847)	(n=7065)	(n=30595)	(n=12839)
Job centre, careers office, job club	–0.832 ***	–1.347 ***	–1.470 ***	–0.671 ***	–0.789 ***	–0.630 ***
	(0.064)	(0.036)	(0.045)	(0.065)	(0.029)	(0.038)
Direct approach to employers	–0.424 ***	–0.460 ***	–0.434 ***	–0.296 ***	–0.283 ***	–0.048
	(0.072)	(0.029)	(0.053)	(0.069)	(0.031)	(0.054)
Ask friends and relatives	–0.324 ***	–0.443 ***	–0.422 ***	–0.181 **	–0.252 ***	–0.140 **
	(0.068)	(0.030)	(0.052)	(0.076)	(0.032)	(0.054)
Do anything else	–0.013	–0.174 ***	–0.371 ***	–0.053	0.005	–0.007
	(0.078)	(0.039)	(0.070)	(0.077)	(0.037)	(0.058)

Standard errors in parenthesis are clustered by year x regions; * Significant at 10%, ** Significant at 5%, *** Significant at 1%

[#] Excludes Northern Ireland. All coefficients refer to the dummy for employed job seekers (vs. unemployed job seekers); other explanatory variables: age, dummies for married/cohabiting, singles, presence of dependent children in the household, levels of education, region, and year.

In terms of job search methods used, the results in Table 7 are consistent with those using the quarterly data (shown in Table 5). The coefficients presented are those for being an employed relate to an unemployed job seeker, with models estimated separately for each level of education. Once again, employed people looking for a new job are more likely than unemployed people to answer advertisements in newspapers etc., and less likely to use all the other methods. There are some differences between periods of economic growth and recession in the effect of being an employed job seeker on the probability of 'asking friends and relatives' and 'doing anything else'. Employed job seekers are less likely to use these methods of job search in periods of decreasing than increasing unemployment. Overall, however, although differences between employed and unemployed job seekers in search methods used fall in periods of increasing unemployment, the differences are small.

In summary, in contrast to our expectations, differences between employed and unemployed job seekers persist over the business cycle. This suggests that the low degree of substitution between different types of job seekers does not change in relation to economic conditions or the size of the stock of unemployed job seekers. Both in periods of growth and of recession, unemployed job seekers do not appear to compete with employed job seekers.

6. Conclusions

We use the British Labour Force Survey from 1984 to 2009 to analyse the extent to which employed and unemployed job seekers are similar in their individual characteristics, preferences over working hours, and job search strategies. This analysis relates to the job search literature suggesting that competition between employed and unemployed job seekers has a negative impact on job opportunities available to the unemployed, and which assumes that these two types of job seekers have similar individual characteristics and apply to the same jobs.

Our analysis of the determinants of on-the-job search suggests that employed people engaging in on-the-job search tend to be in worse jobs than those who are not searching. There is some evidence that unemployed job seekers apply to – or accept – different (worse) jobs than employed job seekers, but then keep searching for better opportunities once in the new job.

We also find significant differences in the characteristics of different types of job seekers. Employed job seekers looking for a new job have on average much

higher levels of education than unemployed job seekers, and, conditional on the level of education, they also seem to have different preferences in terms of working hours. In particular employed people looking for a new job have much stronger preferences toward full-time jobs than unemployed people have, and these differences persist across levels of education. This is consistent with the idea that unemployed people have lower expectations in terms of job sought than employed people, and suggests that employed and unemployed job seekers are unlikely to be close substitutes and to apply to similar jobs. In addition, employed and unemployed job seekers use different search methods, although differences among highly educated job seekers are much larger than differences among job seekers with low education. Finally, we find that differences between employed and unemployed job seekers do not change substantially over the business cycle.

Therefore contrary to what often assumed in the literature, our evidence suggests that employed and unemployed job seekers are systematically different and are unlikely to directly compete with each other for the same jobs. Consequently it is unlikely that the job search activities of employed people will have an impact on unemployed job seekers.

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