ISER Working Paper Series

Explaining differences in job search outcomes between employed and unemployed job seekers

Simonetta Longhi
Institute for Social and Economic Research
University of Essex

Mark Taylor
Institute for Social and Economic Research
University of Essex

No. 2011-17
June 2011

INSTITUTE FOR SOCIAL
& ECONOMIC RESEARCH

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

www.iser.essex.ac.uk

Non-technical Summary

At any given point in time, an unemployed person who is looking for a job competes not only with other unemployed people, but also with job seekers who are already employed. Recent evidence suggests that employed and unemployed job seekers differ significantly in their individual characteristics, past employment histories, preferences over working hours, and job search strategies. However, there is little evidence on whether the probability of finding a job is different for unemployed and employed job seekers; and on how the new job found by an unemployed job seeker compares with the new job found by an employed job seeker, for example in terms of wages or permanency.

In this paper we compare the job search outcomes of employed and unemployed job seekers and analyse how their own characteristics and the conditions of the regional labour market contribute to the probability that they receive an acceptable job offer, and/ as well as the characteristics of the accepted job. In particular we use the Labour Force Survey (LFS) to identify both unemployed people and employed workers looking for a job. We first compare the job finding rates of employed and unemployed job seekers and analyse whether any differences between them can be explained by their observed characteristics or their job search behaviour. We then compare job search outcomes for successful employed and unemployed job seekers in terms of wages in their new job, permanency, and working hours.

Our estimates suggest that unemployed job seekers have a higher probability of receiving an acceptable job offer than employed job seekers, and that this difference persists when controlling for observed worker characteristics, job search behaviour, and characteristics of the labour market. We interpret this as showing that employed and unemployed job seekers respond differently to the receipt of job offers.

When comparing successful employed and unemployed job seekers we find that employed job seekers accept jobs paying higher wages than unemployed job seekers, and are less likely to accept temporary jobs and jobs which do not offer the required working hours (i.e. they are less likely to accept a part-time job if they were looking for a full-time job and vice versa). Again, these differences remain when controlling for a range of individual and regional labour market characteristics and search strategy used.

Our research also indicates that the share of employed job seekers in the local labour market has little impact on the probability of unemployed people finding a job or on the quality of the job found, and that the local unemployment rate has little impact on the probability of employed job seekers receiving an acceptable job offer. Furthermore the effectiveness of different search strategies on the probability of finding a job differs between employed and unemployed job seekers. If different types of jobs are advertised in different ways, it is likely that job seekers select the search strategy most efficient at eliciting information about the types of jobs that they are seeking. This evidence suggests that employed and unemployed job seekers are not in direct competition with each other for the same jobs.

Explaining differences in job search outcomes between employed and unemployed job seekers*

Simonetta Longhi and Mark Taylor
Institute for Social and Economic Research
University of Essex[1]

This version: 06 June 2011

Abstract

We use individual data for Great Britain over the period 1992-2009 to compare the probability that employed and unemployed job seekers find a job, and the quality of the job they find. The job finding rate of unemployed job seekers is 50 percent higher than that of employed job seekers, and this difference seems to be due to behavioural differences between employed and unemployed job seekers rather than differences in characteristics. Consistent with search theory, we find that employed job seekers are more selective in evaluating job offers; for example, they are less likely to accept low-wage and temporary jobs, or jobs that do not meet their working hour requirements.

Keywords: on-the-job search, unemployment, job-finding rate
JEL Classification: J01, J20, J29, J62, J64

* We would like to thank participants at the Joint Empirical Social Science Seminar at the University of Essex (February 2011), the Conference of the Scottish Economic Society (April 2011), and at a seminar at the University of Sheffield (May 2011) for helpful comments. 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 are available from the Data Archive at the University of Essex (www.data-archive.ac.uk).
[1] Institute for Social and Economic Research, University of Essex, Wivenhoe Park, Colchester CO4 3SQ, United Kingdom. Email: slonghi@essex.ac.uk (corresponding author); taylm@essex.ac.uk

1. Introduction

At any given point in time, an unemployed person who is looking for a job competes not only with other unemployed people, but also with job seekers who are already employed. Many theoretical models assume that job seekers are homogeneous, with employed and unemployed job seekers differing only in their labour market status and search intensity and effectiveness (e.g. Burdett and Mortensen 1998; van den Berg and Ridder 1998), although recent evidence suggests that employed and unemployed job seekers differ significantly in their individual characteristics, past employment histories, preferences over working hours, and job search strategies (Longhi and Taylor 2010a, 2010b). Most of the empirical literature on job search outcomes focuses on the probability of unemployed people finding a job and only rarely compares outcomes of unemployed people to those of employed job seekers. Consequently there is little theoretical or empirical evidence about the characteristics of the job found by unemployed and employed job seekers. It has been suggested, for example, that even when they are apparently similar, unemployed and employed job seekers might obtain unequal wage offers (Pissarides 1994; Böheim and Taylor 2002; Delacroix and Shi 2006), and that previous unemployment spells might have a long term impact on employment and earnings (Arulampalam et al. 2001; Gregg and Tominey 2005). In this paper we compare the job search outcomes of employed and unemployed job seekers and analyse how both their own characteristics and the conditions of the regional labour market contribute to the probability that they receive an acceptable job offer, and the characteristics of the accepted job.

A large literature analyses the probability of unemployed – and employed – job seekers finding a job using matching functions. Matching functions describe the process through which hiring occurs and are generally estimated using aggregate data on for example the number of vacancies, unemployment rates, and on-the-job search (e.g. Anderson and Burgess 2000). Results from estimating such functions typically suggest an inverse relationship between the proportion of employed job seekers in the labour market and the probability of unemployed people finding a job (Burgess 1993). Aggregate data, however, can only give us a partial understanding of this process, and micro-data are required for a more comprehensive understanding.

One strand of the microeconomic literature uses individual level data to analyse the probability of finding a job, and focuses on the impact of the length of the unemployment spell and of previous unemployment experiences (Arulampalam et al. 2000; Gregg 2001;

Shimer 2008). These typically find evidence of state dependence, duration dependence and occurrence dependence in unemployment, indicating that previous unemployment experiences increase the chances of current or future unemployment, and that the probability of an unemployed worker finding a job falls with the elapsed duration of the unemployment spell. However, because of its focus on the impact of previous unemployment experience, this literature does not draw any conclusions about the other characteristics of successful and unsuccessful unemployed job seekers or how they compare with employed job seekers.

Another strand of the microeconomic literature uses retrospective data on successful job seekers to compare the effectiveness of the job search methods used by the unemployed and employed (Blau and Robins 1990; Weber and Mahringer 2008). This literature concludes that employed search is more effective than unemployed search. However, since these studies focus only on those who successfully find a job, they do not provide information on how the job finding rate of unemployed people compares with that of employed job seekers.

We use the Labour Force Survey (LFS) for Great Britain to identify both unemployed people and employed workers looking for a job. We first compare the job finding rates of employed and unemployed job seekers and analyse whether any differences between them can be explained by their observed characteristics or their job search behaviour. We find that unemployed job seekers have a higher probability of receiving an acceptable job offer than employed job seekers, and this difference remains when controlling for observed worker characteristics and job search behaviour. This indicates, consistent with search theory, that employed and unemployed job seekers have different reservation wages and different expectations about other job characteristics such as permanency and working hours. We then compare job search outcomes for successful employed and unemployed job seekers in terms of wages in their new job, permanency, and working hours, and find that employed job seekers accept jobs with higher wages than unemployed job seekers, and are more likely than unemployed job seekers to find permanent jobs that meet their working hour requirements.

2. Theoretical Background

There are several theories that help explain why employed and unemployed job seekers might have different probabilities of finding an acceptable job offer, and why unemployed job seekers might accept lower quality jobs than those accepted by employed job seekers. We briefly discuss these theories and their implications here.

Human capital theory suggests that workers accumulate firm-specific (non-transferable) human capital through on-the-job training and work experience; when the job is terminated, this firm-specific human capital is permanently lost and has no value in the new job (Becker 1993). Furthermore, there is no accumulation of firm-specific human capital during a spell of unemployment, and there might be a deterioration in general human capital that is transferrable between firms and jobs (Pissarides 1992). This implies that unemployed job applicants will be less attractive than employed job applicants to potential employers, will have a lower probability of entering work, and will enter a lower quality job relative to employed job seekers.

Signalling theory suggests that, as employers are unable to observe the productivity of job applicants, they might take a worker's previous unemployment experience and unemployment duration as a signal of low productivity (Lockwood 1991; Blanchard and Diamond 1994). Hence, similar to human capital theory, signalling theory would also suggest that unemployed job seekers have a lower probability than employed job seekers of finding a job and a higher probability of finding a low quality job.

Dual or segmented labour market theory suggests that unemployed and employed job seekers are in different labour markets and therefore would not compete with each other for jobs (Piore 1975; Reich et al 1973). Because they are in the primary market, employed job seekers obtain higher quality jobs compared to unemployed job seekers. Therefore according to this theory, the presence of employed job seekers would have no impact on the probability of unemployed people finding a job or on the quality of the job found, and vice versa.

Finally, search theory suggests that employed workers seek jobs paying higher wages than their current job while the unemployed seek jobs that offer wages exceeding their reservation wage (Burdett and Mortensen 1998; Pissarides 1994). This implies that the unemployed have lower reservation wages than employed job seekers, and are therefore more likely to find a similar job offer acceptable. Therefore all else equal, unemployed people are more likely than employed job seekers to find a job, but also more likely to accept a job offer which is of low quality.

In the remainder of the paper, we indirectly test these theories by comparing the probability of unemployed and employed job seekers finding a job and the quality of the job found by each type of job seeker using the quarterly LFS for Great Britain.

3. Data: The Quarterly Labour Force Survey

The LFS is a representative survey of households living in the UK. Data are collected quarterly since 1992 on a large number of individual and household characteristics, focussing on employment status, education, and job characteristics. We use data up to the third quarter of 2009, and exclude Northern Ireland. The data cover periods of both economic growth and recession from the end of the recession of the early 1990s, through the period of economic growth between the second half of the 1990s and the 2000s, to another period of recession starting in 2008.

The LFS has two important features that are relevant for our purposes. Firstly it asks questions on job search to both employed and unemployed respondents, which allows a direct comparison of the two groups of job seekers. Secondly it has a rotating panel structure where people are interviewed for up to five successive quarters, which allows us to identify employed and unemployed job seekers who find a (new) job by the following quarter, and to analyse the characteristics of the job found.

We identify job seekers using a series of questions on job search asked at each quarter. We define them as respondents who fulfil the following criteria: (1) they are looking for paid employment; (2) they have looked for work in the last four weeks; and (3) they 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, inactive people, and the small proportion of the unemployed who do not satisfy these three conditions are excluded from our analysis. Similarly, a small number of employed workers move between jobs even if they were not classified as job seekers in the quarter previous to the move. These are also excluded from our analysis.[2]

We also use the LFS to compute aggregate variables capturing the conditions of the regional labour market. These include the proportion of employed people in each region who engage in on-the-job search, the proportion of new hires over total employment, and the

[2] The LFS selects households based on postcodes and does not follow individuals who change residence. Therefore job seekers who find a job that requires a change of address will drop out of the dataset and are not included in our analysis. Theory suggests that workers only migrate if they receive an associated wage premium, implying that job seekers who move house to accept a job will receive higher wages than stayers, all else equal. However this should not bias our estimates, as long as the proportions of unemployed and employed job seekers who drop out the sample are similar. We find this to be the case.

regional unemployment rate.[3] These are computed over quarters and across the nine Government Office Regions in England, plus Scotland and Wales. This spatial dimension is important as research shows that business cycles might not be synchronised across regions (Decressin and Fatás 1995) and that there are significant regional variations in the ratio of unemployment outflows to vacancy outflows (Robson 2001).

Our selection criteria yield an estimating sample of around 100,000 unemployed job seekers and 63,000 employed job seekers over the period 1992 to 2009. In Table 1 we present summary statistics for a range of relevant variables by job seeker status, as well as our key outcomes of interest. This shows that, as might be expected, unemployed job seekers on average live in regions with comparatively higher unemployment rates than employed job seekers (7.8% compared with 6.9%), although there are no differences in the other regional characteristics. Employed and unemployed job seekers also differ in terms of the main method of search used (see also Longhi and Taylor 2010a). In particular the unemployed are much more likely than employed job seekers to use job centres or private career offices etc (36.1% compared with 15.7%), while employed job seekers are more likely than the unemployed to respond to newspaper advertisements (67.3% compared with 45%). This, however, is the most commonly used method of job search among both groups. The descriptive also indicate that the unemployed on average search longer for a job than employed job seekers – 42.3% of the unemployed have searched for more than 12 months, compared with 28.9% of employed job seekers.

In terms of individual characteristics, the table illustrates that employed job seekers are more likely than the unemployed to be women (47.1% compared with 37.8%) and to be married or cohabiting (42.8% compared with 32.4%). Also, on average unemployed job seekers have lower levels of education; for example, only 11.4% of the unemployed have NVQ level 4 – equivalent to a university degree – or above compared to 32.5% of employed job seekers, while 26.5% have no qualifications compared to 7.8% of employed job seekers.

The final section of Table 1 summarises the job search outcomes in the following quarter for employed and unemployed job seekers, which form the dependent variables in our analysis. This indicates that on average 5.4% of unemployed people find a job by the following quarter, compared with 3.7% of employed job seekers who enter a new job in the following quarter. Therefore the unemployed are more likely than employed job seekers to

[3] New hires are estimated here by exploiting the panel component of the LFS to compute the number of workers who start a new job between two subsequent interviews. To ensure representativeness all the aggregate variables are computed using sample weights.

have found a (new) job by the following quarter – suggesting that, consistent with search theory, the unemployed have lower reservation wages than employed.

Table 1: Descriptive statistics for unemployed and employed job seekers

	Unemployed job seekers	Employed job seekers
Number of Observations	99,921	62,945
Characteristics of the labour market:		
Prop employed seeking	0.059	0.059
Prop new hirings	0.028	0.028
Unemployment rate	0.078	0.069
Main search method		
Job centres, private career offices etc	0.361	0.157
Ads in newspapers	0.450	0.673
Direct approach employers	0.089	0.067
Ask friends/relatives	0.086	0.076
Do anything else	0.013	0.027
Average number search methods used	4.7	3.8
Searching 0-3 months	0.167	0.300
Searching 3-12 months	0.410	0.411
Searching > 12 months	0.423	0.289
Age	34	34
Female	0.378	0.471
Married/cohabiting	0.324	0.428
Children (18 or younger)	0.439	0.416
Education level		
NVQ level 4 and above	0.114	0.325
NVQ level 3	0.174	0.207
NVQ level 2 and below	0.291	0.281
Other qualifications	0.156	0.108
No qualifications	0.265	0.078
Outcomes of interest		
Proportion finding a job (%)	5.4	3.7
Quality of the new job found		
Hourly wage (2010q1£)	6.80	8.48
Temporary job	0.346	0.243
Part/Full-time as desired	0.861	0.891

Notes: LFS 1992Q3–2009Q3 excluding Northern Ireland. Men and women of working age.

The subsequent rows of the table suggest that the quality of the jobs found by unemployed and employed job seekers differ considerably. For example, the average hourly wages in the jobs that unemployed job seekers entered are £6.80, while the average hourly wages in the new job entered by employed job seekers are £8.48.[4] This is further initial evidence suggesting that employed job seekers have higher reservation wages than unemployed job seekers. The other characteristics of the accepted job support the hypothesis that employed

[4] In Table 1 wages are deflated at prices of the first quarter of 2010 using the consumer price index (CPI) provided by the Office for National Statistics (ONS).

job seekers on average require a better offer than the unemployed in order to accept a job. For example, Table 1 shows that 34.6% of unemployed job seekers find a temporary job, compared to 24.3% of employed job seekers. Our final measure of job quality relates to whether or not the job found corresponds to the stated job search criteria in terms of working hours. The LFS asks job seekers whether they are looking for a full-time job, for a part-time job, or are indifferent between the two. We define the job quality variable to take the value one for those job seekers who accepted a part-time (full-time) job and were looking for a part-time (full-time) job or were indifferent between the two. In case of a mismatch the variable takes the value zero. Table 1 shows that 86% of unemployed job seekers accepted a job offering the sought working hours (in terms of part-time or full-time), compared with 89% of employed job seekers. It should also be noted that a larger number of unemployed – compared to employed – job seekers is indifferent between part- and full-time jobs (see also Longhi and Taylor 2010a) and so by definition will never be classified as mismatched. Hence, these differences are likely to be larger than it appears from this analysis. In summary, employed job seekers are more likely than the unemployed to enter permanent jobs and jobs that match their preferences in terms of working hours. This is consistent with previous evidence that suggests that the unemployed apply to and accept different (worse) jobs than employed job seekers, but then keep searching for better opportunities once employed (Longhi and Taylor 2010a).

In Table 2 we provide more detailed descriptive statistics of the patterns of job search outcomes over the sample period. The first column shows that on average 62.5% of new hires were previously unemployed, and therefore that on average more than one third of new hires are people moving between jobs. Over the sample period, the percentage of new hires that were previously unemployed ranges from 47.3% to 81.5%. As shown in Figure 1, this percentage was lowest during the period of economic growth between 1996 and 2006 and highest in the periods of recession in the early 1990s and 2008–2009. This may be because there are relatively few unemployed job seekers in periods of economic growth, or due to the fact that people who are unemployed during periods of economic growth are likely to be the least productive workers and therefore to have a relatively low probability of finding a job.

The picture looks quite different if we compare the relative job finding rates of unemployed and of employed job seekers, shown in the last two columns of Table 2. On average over the sample period, 5.4% of the unemployed find a job each quarter, although this varied from 2.8% (during the recent recession) to 9.0% (at the peak of the economic cycle in 2002). This compares with 3.7% of employed job seekers who change jobs each

quarter, which ranges from 1.2% (again during the recent recession) and 6.3%. The patterns over time in the job finding rates are shown in Figure 2, which illustrates that the difference between employed and unemployed job seekers is apparent across the period under study but has increased since 1999.

Figure 1: Proportion of hires from unemployment

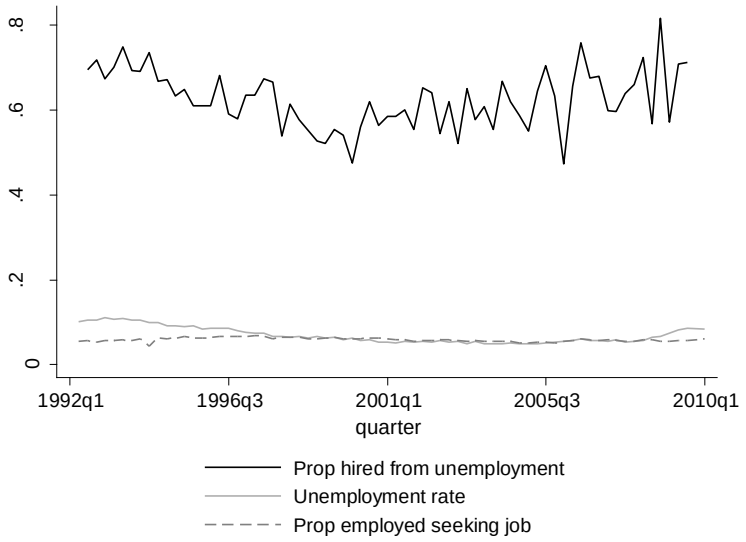

Figure 2: Proportion of employed and unemployed job seekers finding a job

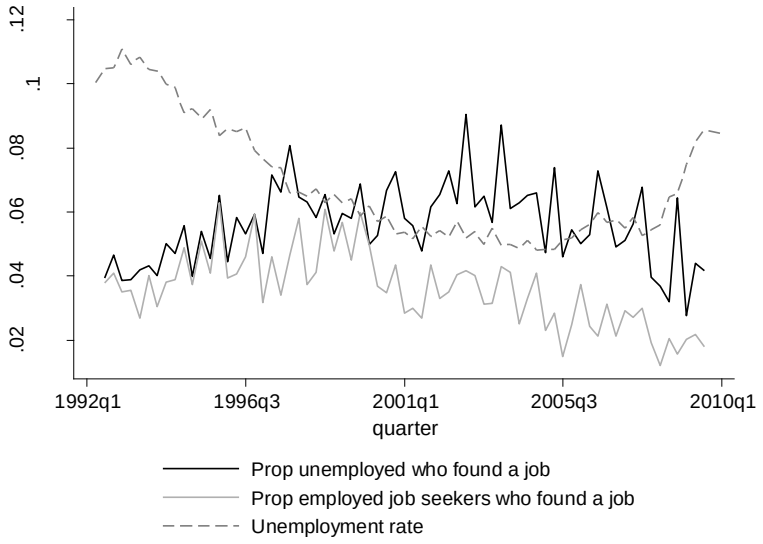

Table 2: Hires among employed and unemployed job seekers (within the sample)

	Percentage of unemployed among newly hired	Percentage of unemployed finding a job	Percentage of employed job seekers finding a job
Overall	62.5	5.4	3.7
Min (quarter)	47.3 (2006q1)	2.8 (2009q1)	1.2 (2008q2)
Max (quarter)	81.5 (2008q4)	9.0 (2002q4)	6.3 (1995q4)
First observation: 1992q3	69.4	3.9	3. 8
Last observation: 2009q3	71.2	4.2	1.8

Notes: LFS 1992Q3–2009Q3 excluding Northern Ireland. Men and women of working age.

These descriptive statistics therefore indicate that unemployed job seekers have a higher probability of accepting a job offer than employed job seekers, but the jobs they accept on average are of a lower quality. However, employed and unemployed job seekers are likely to differ on a range of other characteristics including job search behaviour (see Longhi and Taylor 2010b), while employed job seekers are likely to be a very heterogeneous group. For example, some may be relatively passive job-seekers exerting minimal effort in their job search strategy and therefore have a correspondingly low probability of finding a new job. This heterogeneity may reduce the average job-finding rate of employed job seekers relative to the unemployed, who are likely to suffer disutility from being unemployed and therefore to exert more effort in their job search. On the other hand, the job search efforts of some employed job seekers might be relatively high, but high reservation wages could reduce the probability of receiving an acceptable job offer. In the next section we tackle these issues by estimating multivariate models which incorporate worker characteristics as well as the method and length of job search.[5]

4. Model Estimation

We estimate two sets of models in addressing our research questions. The first set models the probability that employed and unemployed job seekers receive an acceptable offer and therefore enter a (new) job. The second set focuses on the quality of the job attained, in terms of hourly wages, job permanency, and whether or not the hours of work in the accepted job match the preferred working hours during the search process. We now discuss our approach to estimating each of these sets of models.

[5] Unfortunately a detailed analysis of search intensity is not possible with these data because of lack of information on search effort.

4.1. Job-Finding Rates

Our initial aim is to compare the job finding rate of unemployed and employed job seekers, which we define as their probability of finding a (new) job by the following quarter. To estimate this, we define the dependent variable to be binary, taking the value 1 if a worker finds a job by the following quarter, and zero if they remain searching for a job. This variable is observed at most at four quarterly interview dates (we lose a quarterly observation because we need to observe the job search outcome in the subsequent interview). We specify the model for individual *i* as follows:

$$Y_{it}^{*} = X_{it}^{'}\beta_Y + S_{it-1}^{'}\theta_Y + J_{it-1}^{'}\delta_Y + Z_{rt}^{'}\gamma_Y + \varepsilon_{it} \qquad [1]$$

Where Y_{it}^{*} denotes the unobservable individual propensity to have entered a (new) job in the subsequent quarter, X_{it} is a vector of individual and search-related characteristics affecting Y_{it}^{*}, J_{it-1} is a vector of search-related characteristics, S_{it-1} is a binary variable indicating whether or not the job seeker was employed rather than unemployed, and Z_{rt} is a vector of regional labour market characteristics. ε_{it} is the unobservable error term. An individual is observed to have entered a (new) job when his propensity to enter a job exceeds zero. We assume that $\varepsilon_{it} \sim IN\left(0,\sigma_{\varepsilon}^{2}\right)$ and use a probit model in estimation. A positive estimate for θ_Y would indicate that employed job seekers are more likely than otherwise similar unemployed job seekers to find a (new) job, while a negative estimate would indicate the opposite. The vector of individual characteristics X_{it} includes age and its square, whether the worker is married or cohabiting, the presence of children younger than 18 in the household and highest education level. The vector of search-related characteristics (J_{it-1}) includes the main job search method used and length of job search (or unemployment duration). We estimate the models separately for men and women, because of well known gender differences in job mobility and patterns of employment.

As well as estimating whether employed and unemployed job seekers have a different probability of finding a job, it is also important to ascertain whether the returns to individual characteristics, job search methods, length of search, and the conditions of the labour market differ for employed and unemployed job seekers. For example, we might expect particular types of job search methods to be more successful for employed rather than unemployed job

seekers, while others to be more successful for the unemployed. Similarly, if employed and unemployed job seekers operate in segmented labour markets, the presence of employed job seekers will have no impact on the probability of the unemployed finding a job and vice versa. However signalling theory suggests that the presence of employed job seekers will reduce the probability of the unemployed finding a job, while unemployed people should have no impact on the probability of employed job seekers finding a job. Hence, we also model the probability that the job seeker finds a job by the following quarter separately for unemployed and employed job seekers, via the latent variables U_{it}^{*} and E_{it}^{*} respectively:

$$\begin{aligned} U_{it}^{*} &= X_{it}^{'}\beta_U + J_{it-1}^{'}\delta_U + Z_{rt}^{'}\gamma_U + \varepsilon_{itU} \\ E_{it}^{*} &= X_{it}^{'}\beta_E + J_{it-1}^{'}\delta_E + Z_{rt}^{'}\gamma_E + \varepsilon_{itE} \end{aligned} \qquad [2]$$

where $\varepsilon_{itj} \sim IN\left(0,\sigma_{\varepsilon}^{2}\right)$ and U_{it}^{*} and E_{it}^{*} are defined analogously to Y_{it}^{*}. Again, we estimate these separately for men and women using a probit model.

4.2. Quality of the job entered

Our second research question relates to the quality of the job found by employed and unemployed job seekers, conditional on finding a (new) job. We explore three measures of job quality. The first relates to wages in the job – higher quality jobs will be associated with higher wages. The second relates to contractual status, and we assume that permanent jobs are of higher quality than temporary or fixed-term contract jobs. The third relates to whether or not the job found corresponds to the stated job search criteria in terms of working hours. We first directly compare the quality of the jobs entered by employed and unemployed job seekers, where job quality is measured in terms of log wages (W_{it}), permanency, and whether or not the actual working hours match the job search criteria (Q_{it}^{*}):

$$\begin{aligned} W_{it} &= X_{it}^{'}\beta_W + J_{it-1}^{'}\delta_W + S_{it-1}^{'}\theta_W + Z_{rt}^{'}\gamma_W + \varepsilon_{itW} \\ Q_{it}^{*} &= X_{it}^{'}\beta_Q + J_{it-1}^{'}\delta_Q + S_{it-1}^{'}\theta_Q + Z_{rt}^{'}\gamma_Q + \varepsilon_{itQ} \end{aligned} \qquad [3]$$

In these models, the vector of individual characteristics (X_{it}) includes age and its square, whether or not the worker is married or cohabiting, the presence of children younger than 18

in the household, and highest education level, together with part-time and temporary job indicators where appropriate.[6] Other vectors are defined as previously. The models are estimated separately for men and women using OLS (for log wages) and probit models (for temporary rather than permanent job, and for whether actual work hours correspond to the stated job search criteria). Positive estimates for θ_W and θ_Q indicate that employed job seekers enter higher quality jobs than unemployed job seekers, while negative estimates indicate the opposite.

Again, we also assess whether or not the returns to the individual and regional labour market characteristics differ by the employment status of the job seeker by estimating these job quality models separately for employed and unemployed job seekers. Human capital and signalling theory predicts that the duration of job search will have negative consequences for job quality among the unemployed, but will not have any implications for employed job seekers.

5. Empirical Results

We present the estimates from our models in Tables 3, 4, 5 and 6. We initially focus discussion on the probability of finding a job before examining the quality of the jobs that employed and unemployed job seekers enter.[7]

5.1 Probability of Finding a Job

Table 3 presents the estimates from equations [1] and [2], which investigate the relative probabilities of employed and unemployed job seekers finding a job, and the determinants of these probabilities. Column (1) presents the results from including in the specification a binary variable indicating whether the job seeker was employed rather than unemployed,

[6] There are issues related to selection that are potentially relevant here – we only observe the job quality outcomes for job seekers who are successful in their job search. This may cause biases if such selection is non-random. To allow for selection requires an instrument – i.e. a variable that determines whether or not a job seeker is successful in receiving an acceptable job offer but not the quality of the job conditional on receipt of the offer. It is difficult a priori to define a suitable instrument. Empirically we find that the regional labour market characteristics may be suitable instruments, as they have an impact on the probability of finding an acceptable job (see Table 3) but not on wages (Table 4). We have estimated Heckman selection models using these as identifying variables and the results are similar to those presented here.

[7] It could be argued that unemployed and employed job seekers are just different types of people, or at different stages of their careers. We deal with this to some extent by controlling for a range of socio-demographic characteristics. We have also estimated models comparing the unemployed to employed job seekers in temporary jobs, on the basis that these may be more similar to unemployed people. Although this reduces significantly the sample sizes for employed job seekers, the results are little changed from those we present here.

while columns (2) and (3) present the results from models estimated separately for unemployed and employed job seekers respectively. We present marginal effects rather than estimated coefficients, which indicate the change in the probability of entering a (new) job associated with a one unit increase in the relevant explanatory variable.

The results in column (1) indicate that even when controlling for differences in search strategy, search duration and a range of demographic characteristics, employed job seekers have a lower probability than unemployed job seekers of entering a (new) job. For men, their probability is 3.4 percentage points lower than for the unemployed, while for women it is 4.5 percentage points lower. Therefore all else equal, unemployed job seekers are more likely than employed job seekers to receive an acceptable job offer. This is consistent with search theory which predicts that the unemployed will have lower reservation wages than employed job seekers and are therefore more likely to receive acceptable job offers.

Estimates on the regional labour market characteristics indicate that among men, the probability of finding a job increases with the proportion of the employed in the region that are seeking a new job. A ten percentage point increase in the proportion of employed that are searching for a job increases the probability of a job seeker accepting a job offer by five percentage points. The estimates in columns (2) and (3) indicate that this effect emerges only for unemployed men – a larger proportion of employed people seeking a new job in the region increases the probability of an unemployed man accepting a job offer. This may reflect either the greater job search activity that occurs during periods of economic growth, or that unemployed men reduce their reservation wages when there is more competition from employed job seekers. The estimates also indicate that a higher proportion of new hires in the region increases the probability of finding a job, and this emerges for both unemployed and employed job seekers. A ten percentage point increase in the proportion of new hires in the region increases the probability of an unemployed man (woman) finding a job by nine (fifteen) percentage points, and the probability of employed job seekers accepting a new job by seventeen percentage points. This suggests that employed job seekers benefit more than unemployed job seekers from periods of economic growth when firms are hiring workers, and this difference is larger among men than women. A higher unemployment rate is associated with a lower job finding probability among both men and women – a ten percentage point increase in the unemployment rate reduces the probability of finding a job by about three and two percentage points respectively. However the estimates in columns (2) and (3) indicate that these effects are concentrated on unemployed job seekers, and particularly unemployed men.

Table 3: The determinants of unemployed and employed job seekers finding a job

	(1) Probability of finding a job		(2) Probability that Unemployed seeker finds a job		(3) Probability that employed job seeker finds a job	
	Men	Women	Men	Women	Men	Women
Prop of employed seeking job	0.468*	0.198	0.544*	0.332	0.293	0.069
	(0.116)	(0.213)	(0.170)	(0.339)	(0.274)	(0.115)
Proportion of new hires	1.168*	1.610*	0.866*	1.523*	1.724*	1.741*
	(0.174)	(0.327)	(0.292)	(0.514)	(0.386)	(0.296)
Unemployment rate	-0.300^{+}	-0.182^{+}	-0.369*	-0.278	-0.110	0.032
	(0.129)	(0.080)	(0.101)	(0.166)	(0.279)	(0.122)
Employed job seeker	-0.034*	-0.045*				
	(0.002)	(0.002)				
Search method (ref: job centres, career offices etc):						
Ads in newspapers	0.017*	0.005	0.025*	0.022*	-0.006^{+}	-0.020*
	(0.002)	(0.004)	(0.003)	(0.005)	(0.003)	(0.004)
Direct approach employers	0.011^{+}	0.003	0.015*	0.014*	-0.003	-0.015*
	(0.004)	(0.003)	(0.004)	(0.004)	(0.006)	(0.004)
Ask friends/relatives	0.015*	0.000	0.021*	0.017*	-0.006	-0.025*
	(0.003)	(0.006)	(0.003)	(0.006)	(0.005)	(0.006)
Do anything else	0.011*	-0.013^{+}	0.029*	0.005	-0.022*	-0.036*
	(0.004)	(0.006)	(0.005)	(0.010)	(0.008)	(0.004)
Searching 3-12 months	-0.037	-0.043*	-0.043*	-0.052*	-0.027*	-0.029*
	(0.001)	(0.003)	(0.002)	(0.004)	(0.002)	(0.003)
Searching > 12 months	-0.060*	-0.068*	-0.069*	-0.079*	-0.035*	-0.047*
	(0.001)	(0.003)	(0.002)	(0.005)	(0.002)	(0.003)
Age (10 years)	-0.008	-0.007	0.001	0.002	-0.025*	-0.023*
	(0.004)	(0.005)	(0.005)	(0.0090)	(0.006)	(0.006)
Age (10 years) square	0.000	0.000	-0.001	-0.001	0.003*	0.003*
	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)	(0.001)
Married/cohabiting	0.008*	0.004^{+}	0.018*	0.008*	-0.007*	-0.002
	(0.002)	(0.002)	(0.003)	(0.002)	(0.002)	(0.002)
Children (18 or younger)	-0.003	-0.015*	-0.006*	-0.021*	0.002	-0.007*
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.001)
Education level (ref: NVQ level 4 and above)						
NVQ level 3	-0.010*	-0.017*	-0.020*	-0.039*	0.001	-0.003
	(0.001)	(0.003)	(0.001)	(0.006)	(0.002)	(0.002)
NVQ level 2 and below	-0.015*	-0.024*	-0.029*	-0.052*	0.002	-0.000
	(0.002)	(0.003)	(0.002)	(0.004)	(0.003)	(0.003)
Other qualifications	-0.017*	-0.033*	-0.033*	-0.063*	0.005	-0.002
	(0.002)	(0.003)	(0.002)	(0.006)	(0.003)	(0.003)
No qualifications	-0.043*	-0.055*	-0.060*	-0.086*	-0.005	-0.016*
	(0.002)	(0.003)	(0.002)	(0.005)	(0.005)	(0.003)
Log likelihood	-15769	-13023	-10688	-8247	-4852	-4603
Observations	95,460	67,406	62,137	37,784	33,323	29,622
Probability of finding a job, illustrative job seeker			4.9%	3.0%	0.9%	0.9%

Notes: Marginal effects of a probit model, dependent variable = 1 if job seeker entered a (new) job by the subsequent quarter, and = 0 otherwise; standard errors in parenthesis are clustered by region. Other explanatory variables: dummies for region, year, and quarter. The illustrative job seeker is a married person aged 34 with dependent children, with NVQ level 3 looking for a job in London in the third quarter of 2009, when the proportion of employed job seekers was 6.1 percent, hires were 1.8 percent, and the unemployment rate was 9.8 percent. This person has been searching for a period of 3-12 months, and is currently using ads in newspapers as main method of search. + Significant at 5%, * Significant at 1%.

These estimated impacts of regional labour market conditions on job finding probabilities indicate that the job finding rate of employed job seekers is not affected by competition from unemployed job seekers (the regional unemployment rate has no statistically significant impact for employed job seekers), and that competition from employed job seekers does not reduce the probability of unemployed job seekers finding a job (in fact it has the opposite effect). This suggests that, consistent with Longhi and Taylor (2010a), employed and unemployed job seekers do not directly compete for the same jobs, and is evidence of a segmented labour market where employed and unemployed job seekers search for jobs in different sectors.

The next group of covariates relate to the primary search method used by job seekers (with the reference category being job centres, careers offices or employment agencies). The estimated coefficients indicate that generally using job centres, careers offices or employment agencies is the least effective primary search method among men – the estimated coefficients on the other methods are all positive and statistically significant. Search method has little impact among women. However the estimates in columns (2) and (3) suggest that the impacts differ by type of job seeker. For the unemployed all job search methods increase the probability of finding a job relative to the use of job centres – by between 1.5 and three percentage points among men and by between 1.4 and 2.2 percentage points among women. We might speculate that the unemployed who do not rely mainly on job centres for their search are likely to be more proactive in their job search and therefore more highly motivated to find a job: they need to use job centres in order to receive Job Seeker's Allowance but also expend effort using at least one other method of search. Hence this does not necessarily imply that job centres are ineffective in matching the unemployed to jobs, but that they should be used as part of a wider search strategy. Among employed job seekers, however, the estimated coefficients have the opposite sign – all other search methods reduce the probability of finding a job compared to the use of job centres or employment agencies and these estimates are statistically significant (particularly among women). Using other search methods reduces the probability of accepting a job offer by between 1.5 and 3.6 percentage points among women, and by up to 2.2 percentage points among men. Private career offices and employment agencies are an effective method of job search for women employees in particular, who may obtain all their jobs from such agencies as part of a career spent in temporary or agency work.

The estimated coefficients on the duration of search indicate that the probability that a job seeker finds a job falls with elapsed search duration. Although this emerges for both

unemployed and employed job seekers, the estimated effects are larger for the unemployed. For this group having searched for more than twelve months reduces the probability of finding a job by seven percentage points for men and eight percentage points for women relative to searching for less than three months. This is approximately double the effect for employed job seekers. For the unemployed this is evidence of negative duration dependence (and is consistent with human capital theory and signalling theory), while for employed job seekers it suggests that those who search for longer may have higher requirements for their new job.

The estimated coefficients on the individual demographics indicate that the probability of receiving an acceptable job offer is associated with age, but only for employed job seekers. For this group, the probability of accepting a job offer falls initially with age, but at a declining rate. Marriage or cohabitation increases the probability of finding a job for both men and women (but by less than one percentage point), although this is confined to the unemployed. This may reflect the financial responsibilities associated with partnership which increases the necessity to work. Among employed job seekers, being married reduces the probability of accepting a job offer among men. The presence of dependent children reduces the probability of finding a job, particularly among the unemployed and also among women. This may indicate that job seekers with family ties search for jobs in a smaller geographical area, thus reducing the probability of receiving an acceptable offer. This is more likely among working mothers who, for childcare reasons, may be less able to commute long distances.

The final set of covariates measures job seekers' level of education. The estimated coefficients on these variables indicate that the probability of finding a job is greatest for the most highly qualified (to NVQ Level 4 or above – equivalent to a university degree). Having no qualifications reduces the probability by four percentage points among men and by 5.5 percentage points among women relative to having a university a degree. The sizes of these effects are larger among the unemployed, indicating that education is a key driver of job search success among this group. In particular, having no qualifications reduces the probability of finding a job by six percentage points for men and by almost nine percentage points among women, relative to having a university degree. These educational gradients may be due to more highly educated workers having a larger range of jobs to which they can apply and to searching in a larger labour market. In contrast, qualification level has little impact on

the probability of accepting a job offer among employed job seekers – the estimated coefficients are generally not statistically significant.[8]

To put the relative sizes of these effect into context, and to help identify the extent to which differences in the job finding rate between employed and unemployed job seekers are due to differences in individual characteristics or in returns to these characteristics (the estimated coefficients), the final row of the table reports the probability that a illustrative job seeker finds a job. We have defined the illustrative job seeker as a married person of 34 years of age, with dependent children, with NVQ Level 3 education, living in London in the third quarter of 2009 when the proportion of employed job seekers was 6.1%, hires were 1.8% and the unemployment rate was 9.8%. This person has been searching for between three and twelve months and is using advertisements in newspapers as the main method of search. These indicate that the illustrative unemployed man has a 4.9% probability of finding a job by the subsequent quarter, compared with a 0.9% probability for the illustrative employed job seeker. Among women, the relative probabilities are 3.0% and 0.9% respectively. Therefore the unemployed man is more than five times more likely to find an acceptable job than the employed man, while the unemployed woman is about 3.3 times more likely. This suggests that the differences in job finding rates between employed and unemployed job seekers is primarily due to differences in returns to characteristics, rather than the characteristics themselves, and can therefore be attributed to differences in behaviour. This is consistent with employed and unemployed job seekers having different reservation wages, or threshold levels, for acceptance of offered jobs.

We therefore find that, consistent with search theory, unemployed job seekers have a higher probability of accepting a job offer than employed job seekers and that this difference in job finding rates between employed and unemployed job seekers persists when controlling for a range of individual, search method, and regional labour market characteristics. In the remainder of the paper we examine the extent to which employed and unemployed job seekers accept jobs of differing quality.

[8] We have tried including interaction terms between education and a range of other covariates, particularly relating to the regional labour market. However these interactions were generally not statistically significant and so we do not report them here.

5.2. Differences in the Quality of the Job Found

Tables 4, 5 and 6 present the estimated coefficients from models of the quality of the job found by employed and unemployed job seekers. We first discuss the results from wage equations, presented in Table 4.

The estimates in column (1) indicate that employed job seekers on average accept jobs with higher wages than unemployed job seekers, and this applies to both men and women. In particular, among men employed job seekers accept jobs with wages that are almost 13% higher than jobs accepted by the unemployed, while among women the difference is 10%. Therefore we find that even when controlling for individual demographics, education, job search strategy used, occupation and a range of local labour market characteristics, employed job seekers enter jobs with higher wages than unemployed job seekers. This may be due to higher reservation wages while searching, but could also be explained by human capital theory (unemployment being associated with a deterioration in skills), signalling theory (the unemployed being offered low wage jobs as firms interpret their unemployment as a signal of low productivity), or because unemployed and employed job seekers operate in different labour markets (dual labour market theory). We are unable to distinguish between these competing explanations with these data.

The second observation to make is that the variables measuring the conditions of the regional labour market do not have any statistically significant effect on entry wages. This suggests that the proportion of employed people looking for a job, the proportion of new hires, and the unemployment rate do not have any impact on the wages of jobs accepted by employed and unemployed job seekers. From this we conclude that entry wages are determined by individual level characteristics rather than the local labour market environment – and that the quality of the job entered is independent of the level of competition from other employed and unemployed job seekers.

We also find that the main search method used in looking for the job has little impact on the wages in the accepted job – the estimated coefficients are generally statistically insignificant. The exception is among men who asked friends and relatives. Using this job search method is associated with earning wages 10% higher relative to using job centres or employment agencies. Furthermore, this effect is concentrated among employed job seekers – employed men who asked friends and relatives about job opportunities received wages some 14% higher than those using employment agencies. This suggests that men enjoy relatively large wage returns to such informal labour market networks. We find wage penalties associated with the duration of job search among both men and women. Among unemployed

men, those searching for between three and twelve months accept jobs with wages that are 5.4% lower than those who had been searching for less than three months. For men searching for more than twelve months the relative wage penalty approaches 13%. This may reflect the fact that unemployed men lower their reservation wage as the unemployment spell lengthens (and hence accept lower wage jobs), that the length of the unemployment spell is interpreted by employers as a signal of worker productivity, or that a person's skills deteriorate with the length of the unemployment spell. Again, we are unable to distinguish between these competing explanations with these data. Among women, it is employed job seekers who have been searching for more than twelve months that accept lower wage jobs. In particular, employed women who have searched for a job for more than twelve months accept jobs with wages that are 9% lower than those who searched for less than three months. This suggests that employed women who seek alternative employment lower their reservation wages with elapsed search duration.

The estimates on other covariates are consistent with the literature and suggest that older workers tend to accept jobs with higher wages – although the relationship is non linear – but the returns to age (and hence experience) are lower for unemployed job seekers than for employed job seekers. Consistent with previous literature, we find that married or cohabiting men on average have higher wages than single men (by 10%), while for women marital status has no statistically significant impact.[9] As expected, entry wages increase with the level education. Although there is little difference in the returns to education in jobs accepted by employed and unemployed job seekers for men, among women the returns to education are lower for unemployed than employed job seekers. This is consistent with human capital theory (indicating that skills deteriorate when unemployed), but also dual labour market theory (suggesting that unemployed and employed women with similar skill levels accept jobs with different wages). We find a wage penalty associated with entering part-time work among male employed job seekers, and a wage penalty associated with entering a temporary job among female employed job seekers. In contrast, there is a wage premium associated with entering a temporary job for female unemployed job seekers.

[9] Bardasi and Taylor (2008) investigate the reasons for the marriage wage premium among men.

Table 4: Determinants of wages in jobs entered by employed and unemployed job seekers

	(1) Pooled		(2) Unemployed job seekers		(3) Employed job seekers	
	Men	Women	Men	Women	Men	Women
Prop. employed seeking job	0.828	-1.723	0.621	-1.291	0.445	-1.955
	(1.540)	(1.360)	(1.998)	(1.826)	(2.491)	(2.050)
Proportion of new hires	-0.128	0.216	-3.335	-0.164	5.019	0.114
	(2.879)	(2.495)	(3.883)	(3.446)	(4.292)	(3.627)
Unemployment rate	0.957	-1.114	0.905	-1.158	2.434	-0.574
	(1.239)	(1.061)	(1.612)	(1.455)	(1.966)	(1.563)
Employed job seeker	0.127*	0.099*				
	(0.016)	(0.014)				
Search method (ref: job centres, career offices etc):						
Ads in newspapers	-0.032	-0.014	-0.014	-0.009	-0.058	-0.020
	(0.018)	(0.017)	(0.024)	(0.023)	(0.030)	(0.027)
Direct approach employers	0.030	0.002	0.015	0.012	0.054	-0.018
	(0.026)	(0.025)	(0.034)	(0.032)	(0.042)	(0.039)
Ask friends/relatives	0.100*	-0.010	0.073	0.021	0.138*	-0.062
	(0.028)	(0.029)	(0.038)	(0.040)	(0.041)	(0.043)
Do anything else	0.075	0.041	0.084	0.020	0.097	0.065
	(0.056)	(0.048)	(0.084)	(0.072)	(0.074)	(0.065)
Searching 3-12 months	-0.030*	-0.017	-0.054^{+}	-0.027	-0.003	-0.020
	(0.017)	(0.015)	(0.023)	(0.020)	(0.025)	(0.022)
Searching > 12 months	-0.093*	-0.039	-0.129*	-0.019	-0.026	-0.088^{+}
	(0.023)	(0.024)	(0.031)	(0.034)	(0.035)	(0.036)
Age (10 years)	0.700*	0.490*	0.649*	0.444*	0.785*	0.577*
	(0.042)	(0.041)	(0.054)	(0.054)	(0.068)	(0.064)
Age (10 years) square	-0.083*	-0.061*	-0.075*	-0.056*	-0.097*	-0.071*
	(0.006)	(0.006)	(0.007)	(0.008)	(0.009)	(0.009)
Married/cohabiting	0.105*	0.029	0.100*	0.032	0.104*	0.028
	(0.022)	(0.017)	(0.031)	(0.023)	(0.031)	(0.024)
Children (18 or younger)	-0.050*	-0.038^{+}	-0.056^{+}	-0.030	-0.038	-0.052^{+}
	(0.017)	(0.015)	(0.023)	(0.021)	(0.025)	(0.022)
Education level (ref: NVQ level 4 and above)						
NVQ level 3	-0.098*	-0.078*	-0.085^{+}	-0.021	-0.103*	-0.132*
	(0.024)	(0.023)	(0.034)	(0.033)	(0.033)	(0.031)
NVQ level 2 and below	-0.172*	-0.142*	-0.151*	-0.105*	-0.181*	-0.178*
	(0.024)	(0.021)	(0.034)	(0.030)	(0.034)	(0.028)
Other qualifications	-0.232*	-0.174*	-0.223*	-0.137*	-0.203*	-0.194*
	(0.029)	(0.028)	(0.040)	(0.037)	(0.044)	(0.043)
No qualifications	-0.224*	-0.202*	-0.190*	-0.167*	-0.277*	-0.230*
	(0.033)	(0.029)	(0.043)	(0.039)	(0.060)	(0.048)
Part-time	-0.037	-0.007	-0.009	0.006	-0.077^{+}	-0.026
	(0.021)	(0.016)	(0.026)	(0.022)	(0.039)	(0.023)
Temporary job	0.001	0.019	0.009	0.075*	-0.015	-0.064*
	(0.017)	(0.015)	(0.022)	(0.020)	(0.028)	(0.023)
R^2	0.453	0.443	0.390	0.379	0.490	0.474
Observations	3830	3905	2,321	2,208	1,509	1,697
Average wage (£), illustrative job seeker			10.68	11.29	16.45	12.46

Notes: OLS regression estimates, dependent variable = log wages in job entered. Standard errors in parenthesis; Other explanatory variables: dummies for occupations, region, year, and quarter. The illustrative worker is a married person aged 34 with dependent children, with NVQ level 3, who finds a job in London in the third quarter of 2009, when the proportion of employed job seekers was 6.1 percent, hires were 1.8 percent, and the unemployment rate was 9.8 percent. This person had been looking for 0-3 months using newspaper ads, and found a permanent full-time in a associate professional and technical occupation. + Significant at 5%, * Significant at 1%.

Table 4 also shows the average wage accepted by the illustrative job seeker. This is defined as a married person aged 34 with dependent children, with NVQ level 3, who lives in London and works in a permanent full-time job in a associate professional and technical occupation in the third quarter of 2009, when the proportion of employed job seekers was 6.1 percent, hires were 1.8 percent, and the unemployment rate was 9.8 percent. This person had been searching for work for less than three months using newspaper advertisements. This illustrative man would receive an hourly wage of £16.45 if he was an employed job seeker, and of £10.68 if he was previously unemployed, a difference of more than £5 per hour. Among women the difference is much lower: the illustrative woman would receive a wage of £12.46 if she was an employed job seeker and of £11.29 if she was unemployed. Therefore among men, there is evidence that differences in wages in the accepted job are due to differences in returns to characteristics rather than in the characteristics themselves, which may be attributed to differences in behaviour (for example if employed job seekers have higher reservation wages than otherwise similar unemployed job seekers). Among women, this is less evident, suggesting that differences in wages in accepted jobs are largely driven by differences in characteristics between the two groups of job seekers.

Our next measure of job quality is whether the job is temporary or permanent. Table 5 shows the marginal effects from a probit model in which the dependent variable takes the value one if the job is temporary (and therefore of low quality) and zero if permanent (high quality). Our estimates suggest that employed job seekers have a lower probability than unemployed job seekers of entering a temporary job, by eleven percentage points among men and 8.5 percentage points among women. Therefore even when controlling for differences in individual and regional labour market characteristics, occupation and search strategy, employed job seekers are less likely than the unemployed to accept a temporary job. This evidence is consistent with search theory, human capital theory, signalling and dual labour markets. However the conditions of the regional labour market have no statistically significant impact on the probability that the job accepted is temporary – the quality of the job entered is independent of the level of competition from other employed or unemployed job seekers.

The probability of accepting a temporary job is generally little affected by choice of main search method. There is evidence that job seekers whose main search method is to respond to advertisements in newspapers are between 2.5 and four percentage points less likely to accept temporary jobs than those whose main search methods are job centres or employment

agencies. Also elapsed search duration has no impact on the probability of accepting a temporary job.

Being married reduces the probability of accepting a temporary job for employed job seekers of both sexes (by five percentage points for men and four percentage points for women), and also among unemployed men (by seven percentage points). However it is education that has the largest effects. Unemployed men and women with no or few qualifications have a lower probability of entering temporary employment than unemployed men and women with high qualifications (by between ten and twelve percentage points among men and between eleven and seventeen percentage points among women). The sizes of these effects are larger than for men and women who are employed job seekers. Among both unemployed and employed job seekers, the most highly qualified have the largest probability of accepting a temporary job.

The bottom of the table shows the probability that the illustrative job seeker accepts a job which is temporary. Once again, the illustrative worker is a married person aged 34 without dependent children, with NVQ level 3, who lives in London and works in a full-time job in a associate professional and technical occupation in the third quarter of 2009. This person had been looking for a job for less than three months using advertisements in newspapers. While among men employed and unemployed job seekers have very similar probabilities of accepting a temporary job (24% and 27%), among women the illustrative unemployed job seeker is much more likely to accept a temporary job than the employed job seeker (40% compared with 15%). This suggests that among women, temporary jobs either act as stepping stones to more permanent employment (Booth et al. 2002), or that women are more likely than men to cycle between temporary jobs and unemployment. For men, we can conclude that differences in the probability of accepting a temporary job are largely driven by differences in characteristics of employed and unemployed job seekers, while among women the differences are largely driven by differences in returns to characteristics (and can be attributed to differences in behaviour).

Table 5: Determinants of entering a temporary job by employment status of job seeker

	(1) Pooled		(2) Unemployed job seekers		(3) Employed job seekers	
	Men	Women	Men	Women	Men	Women
Prop. employed seeking job	0.864	0.653	0.765	0.754	1.329	0.657
	(0.659)	(0.663)	(0.869)	(0.895)	(1.002)	(0.983)
Proportion of new hires	1.336	1.738	2.507	1.599	-1.155	1.770
	(1.198)	(1.189)	(1.587)	(1.606)	(1.801)	(1.764)
Unemployment rate	0.456	-0.023	0.479	-0.314	0.511	0.385
	(0.516)	(0.506)	(0.678)	(0.684)	(0.792)	(0.749)
Employed job seeker	-0.108*	-0.085*				
	(0.007)	(0.007)				
Search method (ref: job centres, career offices etc):						
Ads in newspapers	-0.027*	-0.028*	-0.024^{+}	-0.029*	-0.039*	-0.029^{+}
	(0.008)	(0.008)	(0.010)	(0.011)	(0.012)	(0.012)
Direct approach employers	-0.009	-0.002	0.003	-0.008	-0.034^{+}	0.006
	(0.011)	(0.012)	(0.140)	(0.015)	(0.017)	(0.018)
Ask friends/relatives	-0.005	-0.011	-0.004	-0.019	-0.017	-0.003
	(0.011)	(0.014)	(0.015)	(0.015)	(0.017)	(0.020)
Do anything else	-0.017	-0.053^{+}	0.032	-0.053	-0.066^{+}	-0.051
	(0.023)	(0.023)	(0.034)	(0.034)	(0.031)	(0.032)
Searching 3-12 months	0.002	0.005	0.008	0.019^{+}	-0.004	-0.009
	(0.007)	(0.007)	(0.010)	(0.010)	(0.011)	(0.011)
Searching > 12 months	0.002	0.007	0.002	0.011	0.009	0.010
	(0.010)	(0.012)	(0.013)	(0.016)	(0.014)	(0.018)
Age (10 years)	-0.062*	-0.069*	-0.041	-0.099*	-0.093*	-0.036
	(0.017)	(0.020)	(0.022)	(0.026)	(0.027)	(0.031)
Age (10 years) square	0.012*	0.011*	0.010*	0.015*	0.015*	0.007
	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)
Married/cohabiting	-0.065*	-0.010	-0.069*	0.014	-0.051*	-0.038*
	(0.009)	(0.008)	(0.013)	(0.011)	(0.013)	(0.012)
Children (18 or younger)	0.005	-0.004	0.017	-0.013	-0.012	0.007
	(0.007)	(0.007)	(0.010)	(0.009)	(0.010)	(0.010)
Education level (ref: NVQ level 4 and above)						
NVQ level 3	-0.058*	-0.069*	-0.053*	-0.076*	-0.064*	-0.068*
	(0.011)	(0.011)	(0.015)	(0.015)	(0.014)	(0.015)
NVQ level 2 and below	-0.099*	-0.098*	-0.099*	-0.118*	-0.097*	-0.079*
	(0.011)	(0.010)	(0.015)	(0.014)	(0.014)	(0.013)
Other qualifications	-0.094*	-0.091*	-0105*	-0.112*	-0.075*	-0.071*
	(0.013)	(0.013)	(0.017)	(0.017)	(0.018)	(0.019)
No qualifications	-0.110*	-0.160*	-0.118*	-0.179*	-0.082*	-0.143*
	(0.014)	(0.014)	(0.018)	(0.018)	(0.023)	(0.023)
Log-likelihood	-11618	-10946	-7626	-6465	-3926	-4432
Observations	19,774	19,158	12,108	10,880	7,666	8,278
Probability finding temporary job, illustrative job seeker			27.4%	40.4%	23.7%	15.4%

Notes: Marginal effects of a probit model, dependent variable = 1 if job entered is temporary, = 0 if permanent; standard errors in parenthesis; Other explanatory variables: dummies for occupations, region, year, and quarter. The illustrative worker is a married person aged 34 with dependent children, with NVQ level 3, who finds a job in London in the third quarter of 2009, when the proportion of employed job seekers was 6.1 percent, hires were 1.8 percent, and the unemployment rate was 9.8 percent. This person had been looking for 0-3 months using newspaper ads, and found a job in a associate professional and technical occupation. + Significant at 5%, * Significant at 1%.

Our final measure of job quality identifies whether or not the job seeker enters a job that meets their job search preferences for a part-time or full-time job. Here the dependent variable takes the value one if the accepted job is full-time (part-time) and the job seeker's stated preference when searching was for a full-time (part-time) job, or the job seeker was indifferent between a part- and a full-time job. The estimated marginal effects are presented in Table 6. These indicate that among men, employed job seekers are 2.4 percentage points more likely than unemployed job seekers to accept a job in which the hours match the preferred hours. This is further evidence that, among men, employed job seekers enter higher quality jobs than unemployed job seekers. Among women, however, there is no impact – once controlling for observed characteristics we find that employed and unemployed women are equally likely to enter a job in which the hours match preferred hours.

In terms of the impact of other covariates, we make a number of observations. Firstly, none of the regional labour market characteristics have a statistically significant impact on the probability that the accepted job meets the search requirements in terms of being a full-time or part-time job. Hence competition from other employed or unemployed job seekers has no impact on the quality of the job entered for either type of job seeker. However unemployed women who use search methods other than job centres or employment agencies have a higher probability of finding a job that meets their hours preferences. The sizes of the effects range from increasing the probability by 1.8 percentage points to four percentage points. This may indicate that unemployed women who are more motivated or proactive in their job search are rewarded with finding a job that meets their hours preferences. Job search method has no impact for employed job seekers. We also find evidence that the probability of accepting a job offer that meets hours preferences falls with the duration of the unemployment spell among unemployed job seekers. Being unemployed for more than twelve months reduces the probability by almost five percentage points for men and by three percentage points for women. This is evidence suggesting that unsuccessful unemployed job seekers become more flexible in the types of jobs they are willing to accept as the elapsed duration of the unemployment spell lengthens. Again, no relationship between job search duration and the probability of accepting a job that matches hours preferences emerges for employed job seekers.

Table 6: Determinants of whether the hours of work in accepted job match preferences when searching by employment status of job seeker

	(1) Pooled		(2) Unemployed job seekers		(3) Employed job seekers	
	Men	Women	Men	Women	Men	Women
Prop. employed seeking job	-0.114	-0.319	0.510	-0.459	-1.149	-0.248
	(0.440)	(0.529)	(0.596)	(0.709)	(0.629)	(0.792)
Proportion of new hires	-0.650	-0.298	-1.310	-0.510	0.139	0.159
	(0.791)	(0.951)	(1.083)	(1.282)	(1.104)	(1.405)
Unemployment rate	0.129	0.829^{+}	0.238	1.174^{+}	0.025	0.384
	(0.338)	(0.411)	(0.458)	(0.551)	(0.484)	(0.613)
Employed job seeker	0.024*	0.000				
	(0.005)	(0.005)				
Search method (ref: job centres, career offices etc):						
Ads in newspapers	-0.000	0.011	0.008	0.018^{+}	-0.014	0.001
	(0.005)	(0.006)	(0.007)	(0.008)	(0.008)	(0.010)
Direct approach employers	0.010	0.034*	0.011	0.040*	0.007	0.019
	(0.007)	(0.009)	(0.009)	(0.012)	(0.011)	(0.014)
Ask friends/relatives	0.007	0.022^{+}	0.008	0.037^{+}	0.004	0.009
	(0.008)	(0.011)	(0.011)	(0.015)	(0.011)	(0.016)
Do anything else	-0.000	0.035	0.005	0.037	-0.015	0.033
	(0.016)	(0.019)	(0.024)	(0.027)	(0.019)	(0.027)
Searching 3-12 months	0.000	-0.016*	-0.006	-0.031*	0.006	0.000
	(0.004)	(0.006)	(0.007)	(0.008)	(0.007)	(0.009)
Searching > 12 months	-0.031*	-0.021^{+}	-0.048*	-0.030^{+}	-0.007	-0.018
	(0.006)	(0.009)	(0.008)	(0.012)	(0.009)	(0.013)
Age (10 years)	0.075*	0.029	0.045*	0.007	0.127*	0.068*
	(0.011)	(0.016)	(0.015)	(0.021)	(0.017)	(0.024)
Age (10 years) square	-0.010*	-0.004	-0.005*	0.000	-0.017*	-0.010*
	(0.002)	(0.002)	(0.002)	(0.003)	(0.002)	(0.003)
Married/cohabiting	0.009	0.013^{+}	0.003	0.019^{+}	0.009	0.004
	(0.005)	(0.007)	(0.009)	(0.009)	(0.009)	(0.009)
Children (18 or younger)	-0.000	0.017*	-0.004	0.044*	0.004	-0.014
	(0.005)	(0.005)	(0.007)	(0.007)	(0.007)	(0.008)
Education level (ref: NVQ level 4 and above)						
NVQ level 3	0.017^{+}	-0.009	0.031*	-0.009	0.002	-0.002
	(0.007)	(0.009)	(0.011)	(0.013)	(0.009)	(0.012)
NVQ level 2 and below	0.020*	-0.007	0.022^{+}	0.002	0.018	-0.013
	(0.007)	(0.008)	(0.010)	(0.012)	(0.009)	(0.011)
Other qualifications	0.005	-0.022^{+}	0.009	-0.016	0.005	-0.023
	(0.008)	(0.010)	(0.012)	(0.014)	(0.012)	(0.016)
No qualifications	-0.006	-0.032*	0.003	-0.033^{+}	-0.019	-0.023
	(0.008)	(0.011)	(0.012)	(0.014)	(0.013)	(0.017)
Log-likelihood	-6236	-7896	-4288	-4627	-1872	-3198
Observations	19,830	19,197	12,159	10,918	7,671	8,279
Probability finding job with required working hours illustrative job seeker			85.0%	92.4%	95.7%	91.6%

Marginal effects of a probit model, dependent variable = 1 if job seeker was looking for a part-time (full-time) job and subsequently entered a part-time (full-time) job, and = 0 otherwise; standard errors in parenthesis; other explanatory variables: dummies for occupation, region, year and quarter. The illustrative worker is a married person aged 34 with dependent children, with NVQ level 3, who finds a job in London in the third quarter of 2009, when the proportion of employed job seekers was 6.1 percent, hires were 1.8 percent, and the unemployment rate was 9.8 percent. This person had been looking for 0-3 months using newspaper ads, and found and found a job in a associate professional and technical occupation. + Significant at 5%, * Significant at 1%.

In terms of individual demographics, we find that the probability of accepting a job that matches the search requirements increases with age, particularly among men. The sizes of the age effects are larger for employed job seekers than the unemployed. This may reflect the greater labour market experience of older workers, who know how best to find suitable jobs, or that younger workers are less constrained in the types of jobs they are willing to accept and so more willing to accept to jobs that do not meet their stated search criteria. Married women are more likely to accept a job offer that meets their hours preferences – and this emerges particularly among unemployed job seekers. Similarly, unemployed women with dependent children are 4.4 percentage points more likely than unemployed women without children to accept a job that matches their search criteria in terms of hours. This suggests that constraints on working hours caused by childcare responsibilities are particularly binding among unemployed women. Hence the incidence and duration of unemployment among women may be improved by introducing policy measures that increase childcare availability. Finally, we find that unemployed women with no or low qualifications are significantly less likely than otherwise similar women with higher level qualifications to accept jobs that meet their hours preferences (by three percentage points). Hence for this group hours preferences are least binding, or unemployed women are less likely to find jobs that meet their hours preferences.

The final row of the table presents the predicted probabilities that the illustrative job seeker finds a job with the preferred working hours. This indicates that women are more likely than men to accept a job with working hours that meet their preferences – 92% of unemployed and employed women do so compared with 85% of unemployed men and 96% of employed men. Therefore hours constraints tend to be more binding among women than men. Also the predicted probabilities by type of job seeker are almost identical among women, which suggest that among women any differences in observed outcomes are due to differences in characteristics rather than differences in returns to the characteristics. For men, however, differences in the predicted probabilities between employed and unemployed job seekers remain, suggesting that these are due to differences in returns to characteristics (differences in behaviour) rather than differences in characteristics themselves.

We draw two main conclusions from these results. Firstly we find that employed job seekers accept jobs of higher quality than unemployed job seekers, and this is robust to controlling for a range of individual, search-related and local labour market characteristics. This is consistent with search theory (employed job seekers have higher reservation wages than unemployed job seekers), signalling theories (employers interpret unemployment as a

signal of low worker productivity and hence offer unemployed workers lower quality jobs), human capital theories (unemployment results in a deterioration of human capital resulting in the unemployed accepting lower quality jobs) and dual labour market theories (the unemployed operate in the secondary labour market while employed job seekers are in the primary labour market). Secondly we find that the proportion of employed workers seeking a new job has little impact on the quality of the job accepted by the unemployed, while the unemployment rate has no impact on the quality of the job accepted by employed job seekers. Therefore neither employed nor unemployed job seekers adapt their job expectations or requirements over the business cycle. We interpret this as further evidence that the two types of job seekers are not competing for the same jobs, and that the conditions of the local labour market have little impact on job search strategies.

6. Conclusions

We compare the job search outcomes of employed and unemployed job seekers and examine how their own individual characteristics, the conditions of the regional labour market, and their job search strategies contribute to the probability that they receive and accept a job offer and the quality of the accepted job. This provides evidence on the extent to which employed and unemployed job seekers compete with each other for similar jobs.

Our estimates indicate that unemployed people have a higher probability than employed job seekers of accepting a job offer, and that this difference persists even when controlling for differences in individual and labour market characteristics and search strategies. We also find evidence suggesting that the differences in the probability of accepting a job offer are driven by returns to characteristics rather than differences in characteristics between employed and unemployed job seekers. We interpret this as indicating that employed and unemployed job seekers behave differently to the receipt of job offers, and in particular that employed job seekers have higher reservation wages than the unemployed – consistent with search theory.

We then compare the quality of the jobs accepted by successful employed and unemployed job seekers, in terms of wages, whether or not they are permanent jobs, and whether or not working hours match preferences when seeking. We find that employed job seekers accept jobs paying higher wages than unemployed job seekers, and are less likely to accept temporary jobs and jobs which do not offer the required working hours (in terms of part- or full-time). These differences remain when controlling for a range of individual and regional labour market characteristics and search strategy used. This is consistent with

theories relating to job search, human capital, signalling and dual labour markets, and explains why employed job seekers have a lower probability than the employed of finding an acceptable job. Again, we find evidence that these differences are driven mostly by the returns to the characteristics of employed and unemployed job seekers rather than due to the observed differences in characteristics themselves.

Our research also indicates that the presence of employed job seekers (and the general conditions of the regional labour market) has little impact on the probability of unemployed people finding a job or on the quality of the job found, and that the unemployment rate has little impact on the probability of employed job seekers receiving an acceptable job offer. Furthermore the effectiveness of different search strategies on the probability of finding a job differs between employed and unemployed job seekers. If different types of jobs are advertised in different ways, it is likely that job seekers select the search strategy most efficient at eliciting information about the types of jobs that they are seeking. This evidence suggests that employed and unemployed job seekers are not in direct competition with each other for the same jobs. Again, this is consistent with search, signalling, human capital and dual labour market theories.

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* 82(1): 93-102.

Arulampalam, W., Booth, A.L. and Taylor, M.P. (2000) Unemployment Persistence. *Oxford Economic Papers* 52(1): 24-50.

Arulampalam, W., Gregg, P. and Gregory, M. (2001) Unemployment Scarring. *The Economic Journal* 111: F577-F584.

Bardasi, E. and Taylor, M. (2008) Marriage and Wages: A Test of the Specialization Hypothesis. *Economica* 75: 569-591.

Becker, G.S. (1993) *Human capital: A theoretical and empirical analysis, with special reference to education* (3rd Edition) Chicago: University of Chicago Press.

Blanchard, O.J. and Diamond, P.A. (1994) Ranking employment duration and wages. *Review of Economic Studies* 61: 417–434.

Blau, D.M. and Robins, P.K. (1990) Job Search Outcomes for the Employed and Unemployed. *Journal of Political Economy* 98(3): 637-655.

Böheim, R. and Taylor, M.P. (2002) The Search for Success: Do the Unemployed Find Stable Employment? *Labour Economics* 9(6): 717-735.

Booth, A.L., Francesconi, M. and Frank, J. (2002) Temporary Jobs: Stepping Stones or Dead Ends? *The Economic Journal* 112(480): F189-F213.

Burdett, K. and Mortensen, D.T. (1998) Wage Differentials, Employer Size, and Unemployment. *International Economic Review* 39(2): 257-273.

Burgess, S.M. (1993) A Model of Competition between Unemployed and Employed Job Searchers: An Application to the Unemployment Outflow Rate in Britain. *The Economic Journal* 103(420): 1190-1204.

Decressin, J. and Fatás, A. (1995) Regional Labour Market Dynamics in Europe. *European Economic Review* 39: 1627-1655.

Delacroix, A. and Shi, S. (2006) Directed Search on the Job and the Wage Ladder. *International Economic Review* 47(2): 651-699.

Gregg, P. (2001) The Impact of Youth Unemployment on Adult Unemployment in the NCDS. *The Economic Journal* 111(475): F626-F653.

Gregg, P. and Tominey, E. (2005) The Wage Scar from Male Youth Unemployment. *Labour Economics* 12: 487-509.

Lockwood, B. (1991) Information externalities in the labour market and the duration of unemployment. *Review of Economic Studies* 58: 733–753.

Longhi, S. and Taylor, M. (2010a) Employed and Unemployed Job Seekers: Are They Substitutes?, ISER Working Paper No. 2010-09.

Longhi, S. and Taylor, M. (2010b) Differences in Employment Histories between Employed and Unemployed Job Seekers, ISER Working Paper No. 2010-32.

Piore, M.J. (1975) Notes for a theory of labour market segmentation. In R.C. Edwards, M. Reich and D.M. Gordon (eds) *Labour market segmentation*, D.C. Heath and Co: Kentucky.

Pissarides, C.A. (1992) Loss of skill during unemployment and the persistence of employment shocks. *Quarterly Journal of Economics* 107: 1371–1391.

Pissarides, C.A. (1994) Search Unemployment with on-the-Job Search. *Review of Economic Studies* 61: 457-475.

Reich, M., Gordon, D.M. and Edwards, R.C. (1973) Dual labor markets: a theory of labor market segmentation. *American Economic Review*, 63 (2): 359–365.

Robson, M.T. (2001) Regional Variations in the Competitiveness of Unemployed Job-Seekers and the Rate of Outflows from Unemployment. *Oxford Bulletin of Economics and Statistics* 63(1): 61-90.

Shimer, R. (2008) The Probability of Finding a Job. *American Economic Review: Papers & Proceedings* 98(2): 268-273.

van den Berg, G.J. and Ridder, G. (1998) An Empirical Equilibrium Search Model of the Labor Market. *Econometrica* 66(5): 1183-1221.

Weber, A. and Mahringer, H. (2008) Choice and Success of Job Search Methods. *Empirical Economics* 35: 153-178.