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# Occupational change and mobility among employed and unemployed job seekers

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## **Non-technical summary**

Economic theory suggests that workers will change their job – and occupation – to improve wages over their career. However, a number of studies find substantial returns to experience accumulated within an occupation and argue that any loss of occupational experience associated with a change in occupation may result in lower wages, at least initially. This suggests that high levels of occupational mobility can severely inhibit a person's career wage growth.

Whether a change in occupation is a positive or negative event is likely to depend on the cause of the change. For example employed people searching for a new job will only accept job offers that are better than in their current job, either in terms of current wages, or in terms of future wage growth (or other working conditions). In contrast, people who are unemployed might be forced to accept sub-optimal jobs in order to exit unemployment and occupational change in this case might be to lower paying occupations, or occupations offering lower future wage growth. Our focus in this paper is to identify and compare the occupational mobility of employed and unemployed job seekers, a topic that has received little attention in the literature despite its potential implications. The literature has instead focussed on the impact of an occupational change on short-term wage changes at the individual level, and has typically ignored whether the change is to an occupation offering higher or faster future wage growth.

We find that for both employed and unemployed job seekers the probability of finding a new job in the same occupation as the previous job is relatively low (around 30%), while more than one half experience a major occupational change (i.e. across occupations that are very different). However employed job seekers are much more likely than unemployed job seekers to move into higher paying occupations and much less likely to move into lower paying occupations. This suggests that for unemployed people a change in occupation is likely to have a negative impact on future wage growth while for employed people an occupational change is more often associated with better prospects for wage growth. Therefore occupational change is more likely to be an opportunity for employed job seekers, but a constraint for unemployed job seekers.

Previous studies suggest that employed and unemployed job seekers have different individual characteristics and employment histories, have different probabilities of finding a job, and find jobs of different quality. Our results suggest that they also exhibit different patterns of occupational change and tend to move in different directions in the occupational hierarchy. Since employed and unemployed job seekers start from different occupations and move in different directions, we can conclude that they tend to accept different types of jobs. All this adds evidence suggesting that employed and unemployed job seekers operate in different labour markets.

Although it has been suggested that job seekers might be more likely to find a better job if they quit their current job (i.e. become unemployed) and focus their efforts on their search for new employment, our results suggest otherwise. Since on-the-job search yields better occupational outcomes than unemployed search, workers should try to avoid unemployment. The best strategy for unemployed job seekers therefore seems that of accepting the first job offer they receive and then engaging in on-the-job search, rather than waiting for a good job offer which, especially in periods of recession, might not materialise.

# Occupational change and mobility among employed and unemployed job seekers<sup>\*</sup>

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## Abstract

We use data from the Labour Force Survey to show that employed and unemployed job seekers in Great Britain originate from different occupations and find jobs in different occupations. We find substantial differences in occupational mobility between job seekers: employed job seekers are most likely to move to occupations paying higher average wages relative to their previous occupation, while unemployed job seekers are most likely to move to lower paying occupations. Employed and unemployed job seekers exhibit different patterns of occupational mobility and, therefore, do not accept the same types of jobs.

*Keywords:* on-the-job search, unemployment, occupations

*JEL Classification:* J01, J20, J29, J62, J64

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## **1. Introduction**

There is growing evidence that the accumulation of occupation-specific human capital plays an important role in the wage determination process. A number of studies find substantial returns to occupational experience, and that the sizes of these returns vary across occupations (Shaw 1984, 1987; Zangelidis 2008; Kambourov and Marovskii 2009). This suggests that high levels of occupational mobility can severely inhibit a person's career wage growth. Parrado et al. (2007) and Kambourov and Manovskii (2008) interpret occupational change as a negative event which entails the loss of occupation-specific human capital and results in wage losses compared to those who do not change occupation. However such studies focus on the impact of an occupational change on short-term wage changes at the individual level, and typically ignore whether the change is to an occupation offering higher or faster future wage growth. As a consequence, the positive long-term impact of career changes might be underestimated. Furthermore, in this framework the positive wage impact of individuals moving to higher paying occupations may be at least partially offset by those moving to lower paying occupations. After ranking occupations – rather simplistically – by their occupational coding, Sicherman and Galor (1990) conclude that occupational changes can be seen as a type of positive career mobility as on average most people seem to move to higher ranking occupations.

Theoretical models of job turnover also suggest that occupational change should be a positive event. Workers will change their job – and occupation – as they learn about the quality of their match with the job, the firm or the occupation (e.g. Burdett 1978; Miller 1984). Hence we might expect that employed people engaging in on-the-job search will only accept job offers that are better than their current job, either in terms of current wages, or in terms of future wage growth (e.g. Johnson 1978; Jovanovic 1979a; Viscusi 1980), or in terms of other working conditions.

However, in some cases occupational change may be triggered by an unemployment spell, an event which itself has wage scarring implications (Arulampalam 2001; Gregory and Jukes 2001; Gregg and Tominey 2005). Although we cannot exclude upward mobility in these circumstances, unemployed people might, in contrast to employed job seekers, be forced to accept sub-optimal jobs in order to exit unemployment (Longhi and Taylor 2011b), and we might therefore expect occupational change for unemployed people to be to lower paying occupations, or occupations offering lower future wage growth (e.g. McLaughlin 1991).

Despite these expected differences in occupational changes experienced by employed and unemployed job seekers, such outcomes are rarely compared. In their analysis of the wage impact of occupational mobility, Parrado et al. (2007) exclude career interruptions (i.e. spells out of work), while Kambourov and Manovskii (2008) include occupational changes of unemployed people, but do not distinguish them from occupational changes of workers who are continuously employed. Our focus in this paper is to identify and compare the occupational mobility of employed and unemployed job seekers. If unemployed job seekers have a greater propensity than employed job seekers to experience occupational change and lose occupation-specific human capital, the wage scarring impacts of unemployment found in previous research may be underestimated. This underestimation may be even larger if unemployed job seekers have a lower probability than employed job seekers of moving to an occupation which offers higher wage growth in the future.

We add to evidence suggesting that employed and unemployed job seekers operate in different labour markets (e.g. Longhi and Taylor 2011a, 2011b). Ideally this type of analysis should use data on the occupation of the job sought, however such data are rarely available. Furthermore previous research suggests that occupational change associated with job change is substantial (e.g. Kambourov and Manovskii 2008 for the US; Longhi and Brynin 2010 for the UK), and therefore it seems unwise to assume that previous occupation is a good proxy for the occupation of the job sought. Nevertheless, we might expect job seekers generally to prefer higher-ranking, higher wage occupations to lower-ranking lower wage occupations. In contrast to Parrado et al. (2007) and Kambourov and Manovskii (2008) we analyse whether the change is up or down the occupational hierarchy rather than focusing on the associated individual wage change. However, differently from Sicherman and Galor (1990) our ranking of occupations is based on average wages paid in each occupation. Hence, a move up the occupational hierarchy would be seen as a positive event with the expectation of higher wages in the future even though it might entail a short-term fall in the current wage received.

Although we find no systematic differences between employed and unemployed job seekers in the probability of experiencing a change in occupation, we do find striking differences in terms of occupation of origin and of destination and in the direction of occupational mobility. While employed job seekers move from relatively low ranking occupations such as sales and customer service or elementary occupations into higher ranking occupations such as professionals, associate professional and technical; unemployed job seekers move the opposite way: from managers and senior officials, or skilled trades into sales and customer service or elementary occupations. Employed job seekers tend to exhibit

upward occupational mobility while unemployed job seekers tend to exhibit downward mobility. This suggests that the scarring effects of unemployment exceed the immediate impacts on wages and have longer term career consequences.

Furthermore, since employed and unemployed job seekers start from different occupations and move in different directions on the occupational hierarchy, we can conclude that they tend to accept different types of jobs. Although it has been suggested that job seekers might be more likely to find a better job if they quit their current job (i.e. become unemployed) and focus on their search for new employment (e.g. Jovanovic 1984), our results suggest otherwise. Since on-the-job search yields better occupational outcomes than unemployed search, workers should try to avoid unemployment. The best strategy for unemployed job seekers therefore seems that of accepting the first job offer they receive and then engaging in on-the-job search, rather than waiting for a good job offer which, especially in periods of recession, might not materialise.

## **2. Data and Descriptive Statistics**

We investigate the occupational mobility of employed and unemployed job seekers using the UK Labour Force Survey (LFS). The LFS is a representative survey of households living in the UK. The data are collected quarterly by the Office for National Statistics (ONS) and include extensive information on individual, household, job and employer-related characteristics as well as on the job search activities of respondents. We use data from the second quarter of 2001, which is the first to include the most recent occupational classification coding (SOC2000), to the first quarter of 2010, a period of ten years covering both a boom (from 2001 to 2007/8) and an economic recession (from 2007/8)<sup>1</sup>.

We use two classifications of occupations. The first, which we call ‘minor’ occupations/groups, includes 81 different occupational groups; the second, which we call ‘major’ occupations/groups and which is an aggregation of the minor occupations, include nine different groups; the list of all minor occupations and their major groupings is shown in the Appendix. When we discuss minor changes we refer to changes across minor occupations within the same major group and when we discuss major changes we refer to changes that imply a change in the major group between previous and current occupation.<sup>2</sup>

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<sup>1</sup> The coding frame of SOC2000 is incompatible with the coding frame of previous SOC classifications (such as SOC90). Consequently we are unable to use LFS data from earlier years.

<sup>2</sup> Occupations may be measured with error (Lynn and Sala 2006). However, since our focus is on people who change job and employer after a period of active (employed or unemployed) job search, we are confident that most of the occupational changes we observe are genuine, and coding errors are not systematic.

Our analyses focus on respondents classified as job seekers in one quarter and who are in a new (different) job in the following quarter. We define job seekers as respondents of working age (men aged 16–64 and women aged 16–59) who (1) are looking for paid employment; (2) have looked for work in the last four weeks; and (3) mention at least one method of job search. We exclude the small number of self-employed, unpaid family workers, and inactive people who search for a job. We also exclude the unemployed who do not satisfy these three conditions, and employed workers who move between jobs but who were not classified as job seekers prior to the job change.

The advantage of using the LFS is that respondents are interviewed for up to five successive quarters. Therefore by tracing individuals across successive interviews, we can identify successful employed and unemployed job seekers. We define these as working age respondents who were searching for a job at the time of one interview and had started a new job (with a different employer) by the time of the following interview. For employed job seekers, the new job must be with a different employer. From the first relevant interview we have information on job search activities and on previous (if unemployed) or current (if employed) job; from the subsequent interview we have details of any new job found. For unemployed job seekers we have information about the job they were employed in while searching, while for unemployed job seekers the LFS collects information on the occupation of the most recent job held and on the length of the current unemployment spell. Information on the length of job search and on the main method of job search is collected from both employed and unemployed job seekers.

We first illustrate the extent of occupational change among employed and unemployed job seekers. Figure 1 shows that 32 percent of employed and 29 percent of unemployed job seekers find a job in the same minor occupation as their previous job. Hence about one in three successful job seekers moves to a job within the same minor occupational group. The majority, 53 percent of employed and 57 percent of unemployed job seekers, move to a different major occupation. The remainder (14%) change minor occupation but remain in the same major occupation.<sup>3</sup> Although unemployed job seekers are four percentage

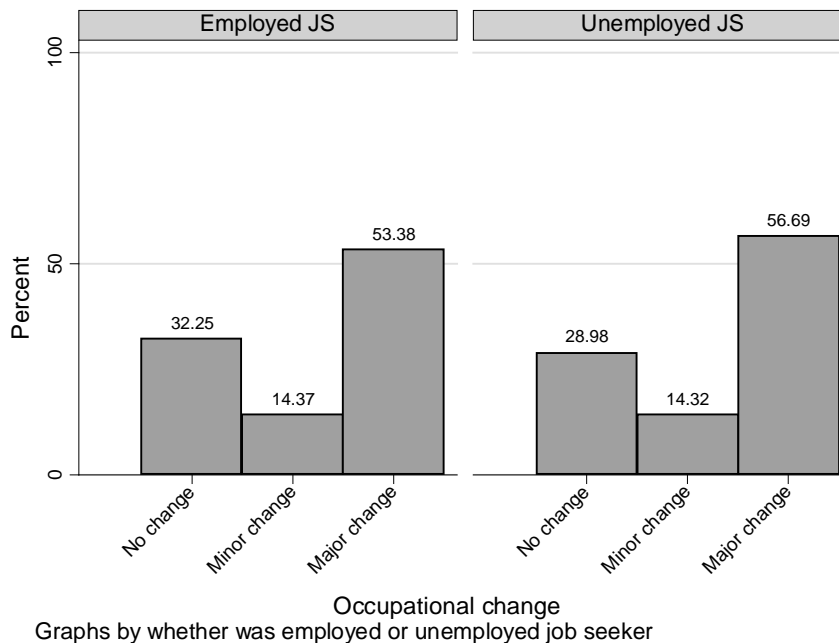
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<sup>3</sup> These estimates of the extent of occupational change are larger than found for the US by Parrado et al. (2007) and Kambourov and Manovskii (2008), and for the UK and Germany by Longhi and Brynin (2010). However the US studies focus on changes in occupational codes and do not condition on job search or employer change. Longhi and Brynin (2010) focus on job changes but also include job changes with the same employer, the majority of which are unlikely to lead to occupational changes. Furthermore, the extent of occupational change depends on the occupational coding frame being used. The US studies use US-specific occupational codes and so are not directly comparable to the UK studies. Longhi and Brynin (2010) use the International Standard Classification of Occupations (ISCO). The LFS provides SOC codes but not ISCO codes.



points more likely than employed job seekers to experience a major occupational change, the differences between the two types of job seekers are not striking at this point.<sup>4</sup>

Figure 1: Change in occupation between previous and current job



In Figure 2 we instead compare the major occupation of origin with that of destination for employed and unemployed job seekers. This illustrates substantial differences between employed and unemployed job seekers in terms of occupational mobility. The figure suggests that unemployed people move out of occupations such as (1) managers and senior officials, (5) skilled trades, and (8) process, plant and machine operatives and into occupations such as (7) sales and customer service, (9) elementary, (4) administrative and secretarial, and (6) personal service. In contrast, employed job seekers tend to move away from occupations such as (7) sales and customer service, and (9) elementary, and into occupations such as (2) professionals, (3) associate professional and technical, and (4) administrative and secretarial. This is preliminary evidence suggesting that employed and unemployed job seekers accept jobs in different occupations and exhibit different patterns of occupational mobility.

<sup>4</sup> More detailed analysis (not shown) indicates that the pattern for men is very similar to that of women.

Figure 2: Previous vs. current occupation

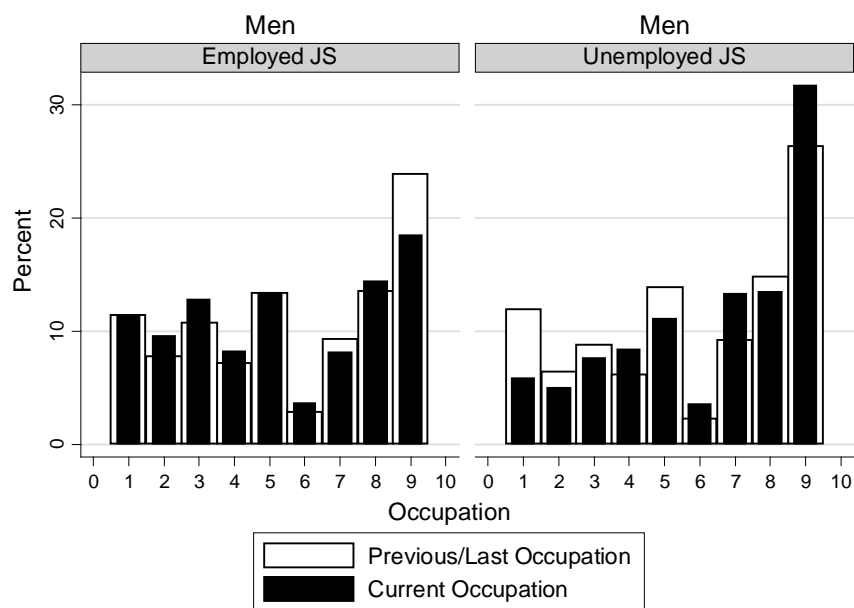


Graphs by whether was employed or unemployed job seeker

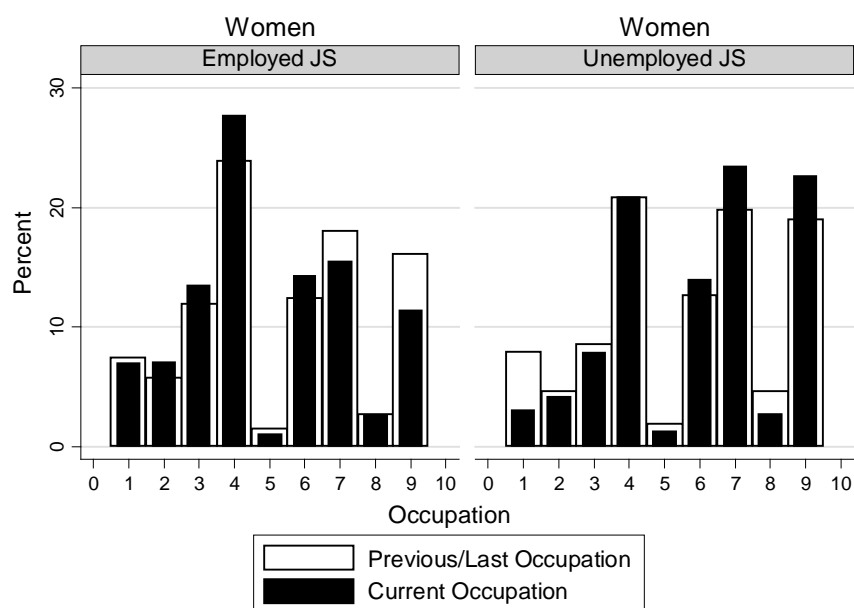
Legend: 1 managers and senior officials; 2 professional occupations; 3 associate professional and technical; 4 administrative and secretarial; 5 skilled trades occupations; 6 personal service occupations; 7 sales and customer service occupations; 8 process, plant and machine operatives; 9 elementary occupations

Figure 3 replicates Figure 2 but distinguishing between men in the upper part of the figure and women in the lower part. Although as expected the occupational distribution clearly differs by gender, the general pattern of occupational change is similar across genders. Among both men and women successful employed job seekers exhibit different patterns of occupational mobility than unemployed job seekers.

Figure 3: Previous vs. current occupation, men and women



Graphs by whether was employed or unemployed job seeker



Graphs by whether was employed or unemployed job seeker

Legend: 1 managers and senior officials; 2 professional occupations; 3 associate professional and technical; 4 administrative and secretarial; 5 skilled trades occupations; 6 personal service occupations; 7 sales and customer service occupations; 8 process, plant and machine operatives; 9 elementary occupations

Although it is reasonable to expect that occupations such as managers and senior officials pay on average higher wages than, for example, elementary occupations, SOC2000 does not define a clear occupational hierarchy across the major and/or minor groups. This

means that identifying upwards, downwards and sideways mobility is not straightforward. To do this we construct a ranking of occupations based on the mean wage received in each minor occupation, which we compute separately for each quarter at the national level using all workers (i.e. including those who do not search and/or do not change job). To reduce spurious changes in mean wages due to sampling error, we smooth the quarterly mean wage by computing its moving averages over three consecutive quarters. For illustrative purposes, the overall (unweighted) mean wages of each minor occupation are shown in the Appendix. We then identify job seekers who experience upward occupational mobility as those who (i) change occupation and (ii) move to an occupation with a mean wage at least 10% higher than the mean wage in their previous occupation. We identify downward occupational mobility analogously. Job seekers who either remain in the same minor occupation or who move to an occupation in which the mean wage is within 10% of the mean wage in the previous occupation are classified as experiencing sideways occupational mobility.

Table 1 shows the extent of upward and downward occupational mobility among employed and unemployed job seekers. The first three columns summarise upward and downward mobility by type of occupational change (major, minor, or no change), while the final column shows overall upward and downward mobility.<sup>5</sup> Column (4) shows that overall, unemployed job seekers are much more likely than employed job seekers to experience downward mobility: 31 percent of unemployed job seekers accept a job in an occupation with a lower mean wage compared to 21 percent of employed job seekers. 23 percent of unemployed job seekers accept jobs in occupations with a higher mean wage compared with 31 percent of employed job seekers. Columns (2) and (3) indicate that both upward and downward mobility are much more likely when a major occupational change is involved, while minor occupational changes are more likely to be associated with sideways mobility.<sup>6</sup> For example, more than 40 percent of job seekers experiencing a minor occupational change experience sideways mobility compared with about 17 percent of those experiencing major occupational mobility. However, in each case unemployed job seekers are more (less) likely than employed job seekers to experience downward (upward) mobility.

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<sup>5</sup> The small discrepancies between Table 1 and Figure 1 are due to the computation of upward and downward mobility for the Table, which is based on moving averages of mean wages across three quarters. The last quarter of data are included in the Figure, but not in the Table.

<sup>6</sup> As shown in the Appendix, wage differential across major occupations tend to be more substantial than wage differentials across minor occupations within the same major occupation.

Table 1: Occupational mobility among employed and unemployed job seekers

	(1) No change of occupation	(2) Change in minor occupation	(3) Change in major occupation	(4) Total
<i>Unemployed job seekers</i>				
Downward mobility (%)		28.36	47.72	31.12
Sideway mobility (%)	100.00	44.23	17.78	45.39
Upward mobility (%)		<u>27.41</u>	<u>34.49</u>	<u>23.49</u>
		100.00	100.00	100.00
Observations	1,896	945	3,711	6,552
Percent experiencing change	28.94	14.42	56.64	100.00
<i>Employed job seekers</i>				
Downward mobility (%)		25.53	32.88	21.17
Sideway mobility (%)	100.00	42.73	17.28	47.74
Upward mobility (%)		<u>31.74</u>	<u>49.84</u>	<u>31.09</u>
		100.00	100.00	100.00
Observations	2,033	901	3,339	6,273
Percent experiencing change	32.41	14.36	53.23	100.00

Notes: Percentages Downward (upward) mobility defined as moving to an occupation where mean wages are more than 10% lower (higher) than in occupation of origin (see text).

### 3. Modelling Strategy

We investigate the extent and direction of occupational change among employed and unemployed job seekers by estimating two types of models. In the first, we estimate the extent of occupational change. Here the dependent variable distinguishes between successful job seekers who remain in the same minor occupation, who change minor occupation but remain in the same major occupation, and who change major occupation. In the second, we estimate the probability of experiencing upward or downward occupational mobility, compared to sideway mobility.

We model the probability that the successful job seeker experiences no change in occupation, a minor, or a major occupational change via the latent variable  $y_{ij}$ :

$$y_{ij} = \mathbf{X}'_i \boldsymbol{\beta}_j + \varepsilon_{ij} \quad (1)$$

where  $\varepsilon_{ij}$  are i.i.d. and follow a multivariate normal distribution;  $i$  represents individuals and  $j$  represents outcomes. The probability of observing outcome  $q$  for individual  $i$  is the probability that  $y_{iq} > y_{ij}$  for each  $j \neq q$ .

We estimate (1) using an unordered multinomial probit model in which the explanatory variables in  $\mathbf{X}_i$  include a range of individual and household characteristics, levels

of education, length and main method of search, major occupation of the previous job, and region, year and quarter dummies.  $X_i$  also includes three variables capturing regional labour market characteristics to examine whether job seekers adapt their job search strategy or their requirements for the new job over the business cycle. These are the percentage of employed people in each region who engage in on-the-job search, the percentage of new hires over total employment, and the regional unemployment rate, and are calculated quarterly for the nine Government Office Regions in England, plus Scotland and Wales, using the LFS. This spatial dimension is important as research shows that business cycles might not be synchronised across regions (Decressin and Fatás 1995). We first estimate the model by pooling both employed and unemployed job seekers and including a variable to distinguish between them. This allows us to identify whether, all else equal, unemployed job seekers are more or less likely than employed job seekers to experience occupational change. We then estimate the model separately for employed and unemployed job seekers to identify whether the determinants of occupational change differ between the two types of job seekers. We estimate models separately for men and women because of the different occupational distributions shown in Figure 3.

In the second type of models we investigate whether the job seeker experiences upward, downward or sideways occupational mobility. We model the direction of the occupational mobility via the latent variable  $z_{ij}$ , and again use an unordered multinomial probit for estimation.

$$z_{ij} = X_i' \gamma_j + \eta_{ij} \quad (2)$$

Here,  $\eta_{ij}$  are i.i.d. and follow a multivariate normal distribution;  $i$  represents individuals and  $j$  represents outcomes. The probability of observing outcome  $q$  for individual  $i$  is the probability that  $z_{iq} > z_{ij}$  for each  $j \neq q$ . The vector  $X_i$  is the same as in equation (1). Again we estimate models both pooling employed and unemployed job seekers to identify whether unemployed job seekers are more or less likely than employed job seekers to experience upward or downward mobility, and separate models for unemployed and employed job seekers to examine whether the determinants of occupational mobility differ for unemployed and employed job seekers.

## 4. Results

### 4.1. Occupational Change

We first present the results from models of occupational change; Tables 2 and 3 present marginal effects from estimating equation (1) for men and women respectively using multinomial probit models. Positive values indicate that the covariate increases the probability of occupational change, while negative values indicate that the covariate reduces the probability relative to remaining in the same three-digit occupation. The pooled specification includes both employed and unemployed job seekers with a variable included that indicates whether the job seeker is employed as opposed to unemployed. The subsequent columns present results from models estimated separately for employed and unemployed job seekers. We initially discuss the results for men summarised in Table 2.

Our estimates indicate that among men employed job seekers are 4.4 percentage points less likely to change major occupation than otherwise similar unemployed job seekers. There is no statistically significant difference between employed and unemployed job seekers in the probability of changing minor occupation but remaining in the same major occupational group. Thus for men, unemployment is associated with a higher probability of changing major occupational group relative to being an employed job seeker and to suffer the likely loss of occupational specific human capital. Previous evidence suggests that this loss will have a negative impact on their wages (Zangelidis 2008; Kambourov and Marovskii 2009).

The pooled model restricts the effects of the covariates to be the same for employed and unemployed job seekers. It is possible however, that the impact of some characteristics may differ, and for this reason the subsequent specifications are estimated separately for employed and unemployed job seekers. Results from these specifications suggest that the conditions of the regional labour market at the time when the job is found have little impact on the probability of employed job seekers changing occupation. However for unemployed job seekers a higher proportion of new hires in the region reduces the probability of a minor occupational change. A one percentage point increase in the percentage of new hires reduces the probability of changing minor occupational group by 4.5 percentage points. During periods of high labour demand unemployed job seekers are more likely to find a new job in the same occupation as their last job; hence, it is easier for the unemployed to retain their occupation-specific human capital when demand for labour is high.

The estimated effects of the other characteristics indicate that older men are less likely to change major occupation than younger men – this is consistent with findings from the US

(Kambourov and Manovskii 2008), and with the job shopping hypothesis (Jovanovic 1979b). Younger workers are likely to expose themselves to a range of jobs and occupations to familiarise themselves with the labour market and to help determine their own preferences.

Unemployed job seekers who are married are more likely to change minor occupation, but less likely to change major occupation compared to those who are not married. We might interpret changes across minor occupations as career advancement, for example related to inter-firm promotions. If so, then this effect of marriage is consistent with the marriage wage premium commonly observed among men and typically attributed to within-household specialisation (e.g Bardasi and Taylor 2008). Instead changes across major occupations are likely to be changes in the type of career which involve a greater element of uncertainty.

Education level is important only for employed job seekers. Consistent with Kambourov and Manovskii (2008), for employed job seekers having higher levels of education, especially a university degree or more, reduces the probability of experiencing a minor occupational change (by up to 7 percentage points relative to having no qualifications), but increases the probability of a major occupational change (by 10 percentage points relative to having no qualifications). This suggests that gaining higher qualifications is associated with greater levels of occupational flexibility perhaps because they infer transferable skills and human capital, or that those with a university degree are less risk averse and therefore more willing to change major occupational group. However, these models say nothing about the direction of the occupational change, which is an issue we explore in the next section.

The probability of experiencing occupational change is independent of search method used, while the length of search has an impact for unemployed job seekers only. Unemployed men who find a job after searching for between 3 and 12 months are 2.7 percentage points more likely to experience a minor occupational change relative to those who find a job within three months. Those who find a job after searching for a longer period are 7.7 percentage points more likely to experience a major occupational change. This suggests that, consistent with job search theory, unemployed men reduce their reservation wages and broaden their range of acceptable jobs as the unemployment spell lengthens.



Table 2: Determinants of occupational change among job seekers: Men

Reference: Same 3-digit occupation	Pooled		Employed		Unemployed	
	Same 1-digit; different 3-digit	Different 1-digit	Same 1-digit; different 3-digit	Different 1-digit	Same 1-digit; different 3-digit	Different 1-digit
Employed job seeker	0.007 (0.009)	-0.044* (0.013)				
% employed seeking job	0.004 (0.010)	0.002 (0.013)	-0.002 (0.014)	0.018 (0.019)	0.010 (0.014)	-0.015 (0.019)
% new hires	-0.016 (0.015)	0.040 (0.022)	0.023 (0.024)	0.015 (0.032)	-0.045+ (0.023)	0.049 (0.029)
Unemployment rate	-0.004 (0.008)	-0.001 (0.012)	-0.010 (0.014)	0.011 (0.018)	-0.001 (0.011)	-0.009 (0.014)
Age	-0.001 (0.002)	-0.019* (0.003)	-0.002 (0.003)	-0.021* (0.005)	-0.001 (0.003)	-0.014* (0.004)
Age square	-0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	0.000* (0.000)	0.000 (0.000)	0.000* (0.000)
Married/cohabiting	0.027+ (0.013)	-0.037+ (0.017)	0.008 (0.018)	0.004 (0.025)	0.040+ (0.017)	-0.060* (0.023)
Children (<=18)	0.007 (0.010)	-0.014 (0.014)	0.010 (0.014)	-0.015 (0.020)	0.004 (0.014)	-0.016 (0.019)
Education level (ref: no qualifications)						
University degree or more	-0.040+ (0.017)	0.055+ (0.026)	-0.069+ (0.028)	0.095+ (0.043)	-0.026 (0.023)	0.021 (0.035)
A-Level, Diploma	-0.032+ (0.017)	0.052+ (0.025)	-0.056+ (0.025)	0.075 (0.041)	-0.022 (0.022)	0.022 (0.033)
Lower level education	-0.028 (0.015)	0.037 (0.022)	-0.061+ (0.025)	0.067 (0.037)	-0.010 (0.018)	0.007 (0.028)
Other qualifications	-0.033 (0.019)	0.017 (0.029)	-0.045 (0.030)	-0.014 (0.046)	-0.028 (0.024)	0.022 (0.037)
Searching 3-12 months	0.017 (0.010)	0.024 (0.013)	0.011 (0.015)	0.005 (0.020)	0.027+ (0.012)	0.029 (0.017)
Searching > 12 months	0.023 (0.013)	0.032 (0.021)	0.027 (0.020)	-0.013 (0.029)	0.021 (0.018)	0.077* (0.029)
Search method (ref: do anything else):						
Job centres, career offices etc	0.005 (0.033)	-0.012 (0.044)	0.021 (0.042)	-0.033 (0.056)	-0.010 (0.051)	-0.012 (0.071)
Ads in newspapers	-0.001 (0.032)	0.038 (0.041)	0.010 (0.040)	0.015 (0.052)	-0.014 (0.050)	0.034 (0.068)
Direct approach employers	-0.008 (0.036)	-0.061 (0.046)	0.009 (0.046)	-0.113 (0.058)	-0.029 (0.054)	-0.035 (0.072)
Ask friends/relatives	-0.003 (0.035)	-0.007 (0.044)	0.007 (0.044)	-0.008 (0.054)	-0.013 (0.052)	-0.047 (0.074)
Log likelihood	-5804		-2657		-3039	
Observations	6303		2952		3351	

Notes: Marginal effects from a multinomial probit; standard errors in parenthesis are clustered by region-year;  
 \* statistically significant at 1%; + statistically significant at 5%; other explanatory variables: major occupation, region, year and quarter dummies

Table 3: Determinants of occupational change among job seekers: Women

Reference: Same 3-digit occupation	Pooled		Employed		Unemployed	
	Same 1-digit; different 3-digit	Different 1-digit	Same 1-digit; different 3-digit	Different 1-digit	Same 1-digit; different 3-digit	Different 1-digit
Employed job seeker	0.002 (0.009)	-0.019 (0.013)				
% employed seeking job	0.012 (0.009)	-0.005 (0.012)	0.028 <sup>+</sup> (0.013)	-0.036 <sup>+</sup> (0.017)	-0.004 (0.013)	0.029 (0.019)
% new hires	0.032 (0.017)	-0.041 (0.023)	-0.003 (0.026)	-0.049 (0.032)	0.062 <sup>+</sup> (0.024)	-0.028 (0.034)
Unemployment rate	-0.017 <sup>+</sup> (0.008)	0.013 (0.011)	-0.004 (0.012)	0.017 (0.017)	-0.022 (0.011)	0.003 (0.016)
Age	0.003 (0.003)	-0.005 (0.004)	0.001 (0.004)	-0.003 (0.005)	0.004 (0.004)	-0.004 (0.006)
Age square	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)	0.000 (0.000)
Married/cohabiting	0.019 (0.010)	-0.025 (0.014)	0.034 <sup>+</sup> (0.014)	-0.009 (0.021)	0.007 (0.013)	-0.040 (0.021)
Children (<=18)	-0.016 (0.009)	0.015 (0.013)	-0.022 (0.013)	0.004 (0.019)	-0.008 (0.013)	0.024 (0.020)
Education level (ref: no qualifications)						
University degree or more	-0.035 (0.018)	0.058 <sup>+</sup> (0.028)	-0.043 (0.026)	0.106 <sup>+</sup> (0.041)	-0.020 (0.023)	0.029 (0.038)
A-Level, Diploma	-0.034 (0.018)	0.087* (0.029)	-0.029 (0.025)	0.156* (0.043)	-0.025 (0.024)	0.025 (0.038)
Lower level education	-0.032 <sup>+</sup> (0.016)	0.072* (0.024)	-0.036 (0.023)	0.114* (0.037)	-0.020 (0.021)	0.044 (0.032)
Other qualifications	-0.031 (0.026)	0.079 <sup>+</sup> (0.035)	-0.013 (0.037)	0.131 <sup>+</sup> (0.054)	-0.035 (0.030)	0.042 (0.043)
Searching 3-12 months	0.004 (0.009)	0.030 <sup>+</sup> (0.014)	0.005 (0.013)	0.014 (0.020)	0.004 (0.014)	0.043 <sup>+</sup> (0.020)
Searching > 12 months	0.007 (0.017)	0.012 (0.026)	-0.020 (0.026)	0.031 (0.034)	0.028 (0.024)	-0.007 (0.035)
Search method (ref: do anything else):						
Job centres, career offices etc	-0.010 (0.028)	-0.002 (0.041)	0.018 (0.041)	-0.034 (0.057)	-0.037 (0.038)	0.014 (0.068)
Ads in newspapers	-0.004 (0.028)	0.055 (0.039)	0.039 (0.039)	0.026 (0.053)	-0.041 (0.038)	0.066 (0.064)
Direct approach employers	-0.053 (0.031)	0.021 (0.043)	-0.021 (0.045)	0.023 (0.059)	-0.078 (0.041)	0.009 (0.072)
Ask friends/relatives	-0.061 (0.034)	0.064 (0.047)	-0.003 (0.046)	0.022 (0.060)	-0.117 <sup>+</sup> (0.049)	0.088 (0.079)
Log likelihood	-5607		-2788		-2745	
Observations	6174		3124		3050	

Notes: Marginal effects from a multinomial probit; standard errors in parenthesis are clustered by region-year;  
 \* statistically significant at 1%; + statistically significant at 5%; other explanatory variables: major occupation, region, year and quarter dummies

Table 3 presents the estimates for women. These indicate that, in contrast to men, there is no statistically significant difference between employed and unemployed job seekers in the probability of experiencing occupational mobility. An employed woman seeking a new job is just as likely to experience a change in minor or major occupation as an otherwise similar unemployed woman. For women, a higher percentage of employed job seekers increases the probability that employed job seekers change minor occupation, but reduces the probability of a major occupational change. This suggests that greater competition for jobs might force women to minor, but not major, occupational changes. As for unemployed men, a one percentage point increase in the proportion of new hires increases the probability of a minor occupational change for unemployed women by more than six percentage points. Although we can as yet say nothing about the direction of occupational mobility, this suggests that greater labour demand might be related to better career opportunities for unemployed women.

Among employed job seekers, the probability of experiencing a major occupational change is lowest for those with no qualifications (the omitted category), suggesting that as for men, education increases labour market flexibility. However education has no impact for unemployed job seekers. For unemployed women a short search is most likely to lead to a major occupational change, increasing the probability by 4.3 percentage points. This suggests that unemployed women who are more flexible in terms of occupation find a job more quickly.

#### *4.2. Occupational Mobility*

Tables 4 and 5 present marginal effects from multinomial ordered probits where the dependent variable identifies upward and downward occupational mobility relative to sideways mobility, as in equation (2). Table 4 shows that, among men, employed job seekers are 5.7 percentage points more likely to experience an upward move and 9.6 percentage points less likely to experience a downward move compared to otherwise similar unemployed job seekers. Therefore employed job search is on average associated with moves to higher wage occupations while unemployed job search is associated with moves to lower wage occupations. Hence not only are unemployed men more likely than employed job seekers to experience occupational change, and therefore to lose their occupation-specific human capital, they are also more likely to move to occupations with lower average wages. In contrast employed job seekers move to higher ranking occupations offering higher wages.

Estimated coefficients on other variables indicate that older men are less likely than younger men to experience a downward occupational move irrespectively of whether they search for a job while employed or unemployed, while the probability of upward (downward) occupational mobility increases (falls) with qualification levels. Investments in education protect workers against moves to lower paying occupations.

Male employed job seekers who find a job after a search period of 3-12 months are 5.7 percent points more likely to experience an upward occupational move compared to those who find a job after a shorter search; among unemployed job seekers, those who search for more than 12 months before accepting a job are 6.2 percentage points more likely to experience a downward move. This suggests that employed job seekers take time to find an appropriate job in a higher ranked occupation, while the unemployed reduce their reservation criteria with the length of the unemployment spell. However the main method of search used has little impact on the direction of occupational mobility among men.

The conditions of the regional labour market have an impact on occupational mobility for unemployed job seekers, perhaps reflecting the fact that employed job seekers have a better outside option while waiting for a job offer. A one point increase in the percentage of employed people engaging in on-the-job search reduces the probability of an upward move for male unemployed job seekers by 4.2 percentage points. Previous evidence suggests that labour market conditions have little impact on the probability of finding a job (Longhi and Taylor 2011b). Our results suggest that this is probably due to (unemployed) job seekers revising their search strategy to include jobs that involve downward occupational mobility relative to their previous job.

Table 4: Determinants of upward and downward occupational mobility among job seekers:  
Men

Reference: Sideways	Pooled		Employed		Unemployed	
	Upward	Downward	Upward	Downward	Upward	Downward
Employed job seeker	0.057*	-0.096*				
	(0.010)	(0.012)				
% employed seeking job	-0.018	0.018	0.007	0.007	-0.042 <sup>+</sup>	0.023
	(0.011)	(0.012)	(0.017)	(0.015)	(0.016)	(0.019)
% new hires	0.003	0.008	-0.029	0.021	0.023	-0.011
	(0.020)	(0.017)	(0.032)	(0.025)	(0.026)	(0.028)
Unemployment rate	-0.004	0.000	-0.016	-0.005	0.211	0.007
	(0.012)	(0.010)	(0.015)	(0.013)	(0.013)	(0.014)
Age	0.003	-0.024*	0.006	-0.028*	0.001	-0.019*
	(0.003)	(0.003)	(0.005)	(0.004)	(0.004)	(0.004)
Age square	0.000	0.000*	0.000	0.000*	0.000	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married/cohabiting	0.018	-0.020	0.001	-0.003	0.035	-0.025
	(0.015)	(0.013)	(0.024)	(0.019)	(0.019)	(0.020)
Children (<=18)	-0.016	0.009	-0.006	0.008	-0.023	0.001
	(0.011)	(0.012)	(0.018)	(0.016)	(0.014)	(0.016)
Education level (ref: no qualifications)						
University degree or more	0.183*	-0.136*	0.202*	-0.132*	0.172*	-0.147*
	(0.022)	(0.023)	(0.040)	(0.035)	(0.028)	(0.032)
A-Level, Diploma	0.104*	-0.070*	0.131*	-0.093*	0.082*	-0.058
	(0.024)	(0.022)	(0.042)	(0.036)	(0.028)	(0.031)
Lower level education	0.033	-0.024	0.061	-0.039	0.013	-0.017
	(0.020)	(0.019)	(0.036)	(0.032)	(0.023)	(0.025)
Other qualifications	-0.013	-0.020	0.004	-0.071	-0.021	0.001
	(0.025)	(0.025)	(0.042)	(0.039)	(0.030)	(0.034)
Searching 3-12 months	0.036*	-0.011	0.057*	-0.033	0.018	0.007
	(0.011)	(0.012)	(0.017)	(0.017)	(0.015)	(0.016)
Searching > 12 months	0.007	0.023	0.035	-0.014	-0.014	0.062 <sup>+</sup>
	(0.016)	(0.018)	(0.026)	(0.025)	(0.022)	(0.025)
Search method (ref: do anything else):						
Job centres, career offices etc	-0.040	0.029	-0.015	0.038	-0.070	-0.004
	(0.038)	(0.036)	(0.053)	(0.044)	(0.057)	(0.064)
Ads in newspapers	0.005	0.033	0.009	0.044	-0.014	-0.006
	(0.036)	(0.036)	(0.051)	(0.041)	(0.055)	(0.064)
Direct approach employers	-0.054	0.010	-0.061	0.008	-0.062	-0.019
	(0.040)	(0.039)	(0.056)	(0.045)	(0.059)	(0.064)
Ask friends/relatives	-0.015	0.033	-0.010	0.060	-0.041	-0.021
	(0.039)	(0.038)	(0.054)	(0.043)	(0.061)	(0.069)
Log likelihood	-5747		-2657		-3029	
Observations	6128		2895		3233	

Notes: Marginal effects from a multinomial probit; standard errors in parenthesis are clustered by region-year;  
\* statistically significant at 1%; + statistically significant at 5%; other explanatory variables: major occupation,  
region, year and quarter dummies

Table 5: Determinants of upward and downward occupational mobility among job seekers:  
Women

Reference: Sideways	Pooled		Employed		Unemployed	
	Upward	Downward	Upward	Downward	Upward	Downward
Employed job seeker	0.072*	-0.088*				
	(0.011)	(0.009)				
% employed seeking job	-0.018	0.014	-0.022	0.018	-0.014	0.009
	(0.011)	(0.011)	(0.017)	(0.015)	(0.015)	(0.015)
% new hires	0.013	-0.035	-0.013	-0.035	0.040	-0.029
	(0.019)	(0.018)	(0.028)	(0.027)	(0.026)	(0.024)
Unemployment rate	0.014	-0.020 <sup>+</sup>	-0.002	0.001	0.028 <sup>+</sup>	-0.042*
	(0.009)	(0.009)	(0.015)	(0.012)	(0.013)	(0.013)
Age	0.011*	-0.010*	0.015*	-0.015*	0.007	-0.005
	(0.003)	(0.003)	(0.005)	(0.005)	(0.005)	(0.005)
Age square	0.000*	0.000*	0.000*	0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Married/cohabiting	0.013	-0.018	0.039 <sup>+</sup>	-0.012	-0.008	-0.021
	(0.012)	(0.011)	(0.019)	(0.017)	(0.016)	(0.017)
Children (<=18)	-0.048*	0.040*	-0.059*	0.026	-0.033 <sup>+</sup>	0.052*
	(0.012)	(0.011)	(0.016)	(0.014)	(0.016)	(0.017)
Education level (ref: no qualifications)						
University degree or more	0.234*	-0.181*	0.266*	-0.165*	0.213*	-0.193*
	(0.024)	(0.022)	(0.038)	(0.031)	(0.030)	(0.032)
A-Level, Diploma	0.152*	-0.079*	0.180*	-0.056	0.133*	-0.107*
	(0.025)	(0.021)	(0.040)	(0.031)	(0.032)	(0.035)
Lower level education	0.109*	-0.062*	0.141*	-0.078*	0.087*	-0.047
	(0.021)	(0.020)	(0.037)	(0.030)	(0.025)	(0.029)
Other qualifications	0.110*	-0.034	0.186*	-0.062	0.054	-0.006
	(0.030)	(0.028)	(0.045)	(0.041)	(0.040)	(0.038)
Searching 3-12 months	0.016	0.023 <sup>+</sup>	0.030	-0.006	0.001	0.052*
	(0.012)	(0.011)	(0.017)	(0.015)	(0.016)	(0.017)
Searching > 12 months	-0.020	0.005	-0.014	-0.010	-0.026	0.019
	(0.020)	(0.020)	(0.031)	(0.028)	(0.027)	(0.028)
Search method (ref: do anything else):						
Job centres, career offices etc	-0.056	0.050	-0.067	0.046	-0.056	0.057
	(0.036)	(0.035)	(0.048)	(0.042)	(0.056)	(0.057)
Ads in newspapers	-0.041	0.063	-0.041	0.052	-0.044	0.076
	(0.034)	(0.034)	(0.044)	(0.042)	(0.054)	(0.056)
Direct approach employers	-0.131*	0.079 <sup>+</sup>	-0.111 <sup>+</sup>	0.080	-0.158*	0.083
	(0.037)	(0.036)	(0.048)	(0.044)	(0.057)	(0.064)
Ask friends/relatives	-0.062	0.042	-0.078	0.070	-0.040	-0.006
	(0.040)	(0.038)	(0.051)	(0.046)	(0.063)	(0.065)
Log likelihood	6035		-2731		2975	
Observations	-5488		3060		-2704	

Notes: Marginal effects from a multinomial probit; standard errors in parenthesis are clustered by region-year;  
\* statistically significant at 1%; + statistically significant at 5%; other explanatory variables: major occupation,  
region, year and quarter dummies

The results for women, shown in Table 5, suggest that employed job seekers are 7.2 percentage points more likely to experience an upward move and 8.8 percentage points less likely to experience a downward move than unemployed job seekers. Hence as for men, unemployed women have a higher probability of experiencing downward occupational mobility than employed women which infers a lasting impact on wages. Among employed job seekers, the probability of upward occupational mobility increases with age while that of a downward move falls with age. Having dependent children reduces the probability of women moving up the occupational hierarchy and, for those who search while unemployed, also increases the probability of a downward move. This might suggest either that having children may harm career prospects for women, or that women who place low priority on their career might self-select into motherhood. As for men, the probability of moving up (down) the occupational hierarchy increases (falls) with education level. Investment in education benefits occupational progress and protects against downward occupational mobility.

Unemployed women who enter a job after a search period of 3-12 months are 5.2 percentage points more likely than those searching for less than three months to experience downward occupational mobility. This suggests that unemployed women lower their reservation criteria with the duration of the unemployment spell and hence become more likely to accept jobs in lower wage occupations. The main method of search used has little impact on occupational mobility, with the exception of “direct approach to employers”. Using this job search method reduces the probability of an upward move. We find that a one percentage point increase in the unemployment rate increases the probability of upward occupational mobility by 2.8 percentage points, and reduces the probability of downward occupational mobility by 4.2 percentage points. Since here we exclude inactive people, this apparently counterintuitive result might be due to selection. Less able women or women less committed to the labour market may drop out of the labour force in periods of high unemployment. This is an issue for future investigation.

In summary, our results show that for both men and women on-the-job search yields better occupational outcomes than unemployed search. Hence, in contrast with some of the previous literature, suggesting that job seekers might be better off quitting their job to concentrate on their search for a better job (e.g. Jovanovic 1984), our results suggest that workers should try to avoid unemployment, should try to re-enter employment quickly if unemployed and then search for better opportunities while employed.

## 5. Conclusions

Models of job turnover suggest that workers change their occupation to improve wages over their career (e.g. Burdett 1978; Miller 1984). Some studies, however, argue that a substantial amount of occupation-specific human capital is lost when a change in occupation occurs, thus resulting in lower wages, at least initially (Parrado et al. 2007; Kambourov and Manovskii 2008). An omission from this literature is a comparison of occupational changes experienced by employed and unemployed people. For employed job seekers occupational change may reflect career progression, with advancement into higher wage occupations (or higher wage growth); for unemployed job seekers occupational change might be triggered by the unemployment spell and the consequent need to find an alternative job quickly. Hence, for unemployed people an occupational change might generate an additional scar in terms of future wages.

In this paper we analyse occupational changes of successful employed and unemployed job seekers. For both employed and unemployed job seekers the probability of finding a new job in the same occupation as the previous job is relatively low (around 30%), while more than one half experience a major occupational change (which entails a change across major 1-digit occupational groups). While these are similar between employed and unemployed job seekers, this hides important differences in terms of the direction of the mobility. Employed job seekers are much more likely than unemployed job seekers to experience upward mobility and much less likely to experience downward mobility. This suggests that for unemployed people a change in occupation is likely to have a negative impact on future wage growth. For employed people, on the contrary, an occupational change is more often associated with better prospects for wage growth.

Previous studies suggest that employed and unemployed job seekers have systematically different individual characteristics and employment histories (Longhi and Taylor 2011a) and have systematically different probabilities of finding a job, and find jobs of different quality (e.g. Longhi and Taylor 2011b). Our results suggest that they also exhibit systematically different patterns of occupational changes and tend to move in different directions of the occupational hierarchy. While occupational change is more likely to be an opportunity for employed job seekers, it seems to be a constraint for unemployed job seekers. This adds evidence suggesting that employed and unemployed job seekers operate in different labour markets.

In summary, we find that on-the-job search yields better occupational outcomes than unemployed search; one possible implication is that workers should try to avoid



unemployment; should try to enter a job quickly if unemployed and then search for better opportunities while employed.

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## Appendix: Occupations

Major group	Minor group	Label	Mean Wage (2001-2009) £ per hour
1		managers and senior officials	
	111	corporate managers & senior officials	27.28
	112	production managers	17.11
	113	functional managers	20.60
	114	quality and customer care managers	15.81
	115	financial institutions and office managers	15.70
	116	managers in distribution, storage and retail	11.79
	117	protective service officers	17.08
	118	health and social services managers	15.20
	121	managers in farming, horticulture, forestry etc	11.68
	122	managers in hospitality and leisure	9.26
	123	managers in other service industries	13.45
2		professional occupations	
	211	science professionals	14.97
	212	engineering professionals	15.20
	213	info & communication technology	17.76
	221	health professionals	21.82
	231	teaching professionals	15.78
	232	research professionals	13.62
	241	legal professionals	22.60
	242	business & statistical professionals	19.88
	243	architects, town planners, surveyors	16.23
3		associate professional and technical	
	311	science and engineering technicians	11.16
	312	draughtspersons & building inspectors	12.33
	313	it service delivery occupations	12.25
	321	health associate professionals	11.95
	322	therapists	14.01
	323	social welfare assoc professionals	10.55
	331	protective service occupations	12.46
	341	artistic and literary occupations	14.23
	342	design associate professionals	11.44
	343	media associate professionals	14.08
	344	sports and fitness occupations	10.77
	351	transport associate professionals	19.60
	352	legal associate professionals	13.97
	353	business & finance assoc professionals	15.73
	354	sales & related assoc professionals	12.22
	355	conservation associate professionals	11.64
	356	public service and other associate professionals	12.44
4		administrative and secretarial	
	411	administrative: government & related	9.19
	412	administrative occupations: finance	9.18
	413	administrative occupations: records	8.36
	414	administrative: communications	8.58
	415	administrative occupations: general	8.03
	421	secretarial and related occupations	8.91
5		skilled trades occupations	

	511	agricultural trades	6.92
	521	metal forming, welding and related	8.81
	522	metal machining, fitting, instrument making	10.07
	523	vehicle trades	8.41
	524	electrical trades	10.56
	531	construction trades	9.14
	532	building trades	8.37
	541	textiles and garment trades	7.82
	542	printing trades	10.19
	543	food preparation trades	6.54
	549	skilled trades n.e.c.	7.88
6		personal service occupations	
	611	healthcare & related personal services	7.07
	612	childcare & related personal services	6.74
	613	animal care services	6.23
	621	leisure & travel service occupations	8.11
	622	hairdressers and related occupations	5.47
	623	housekeeping occupations	6.75
	629	personal services occupations n.e.c.	8.63
7		sales and customer service occupations	
	711	sales assistants and retail cashiers	5.73
	712	sales related occupations	8.35
	721	customer service occupations	7.62
8		process, plant and machine operatives	
	811	process operatives	7.84
	812	plant and machine operatives	8.47
	813	assemblers and routine operatives	7.74
	814	construction operatives	10.08
	821	transport drivers and operatives	7.82
	822	mobile machine drivers & operatives	7.96
9		elementary occupations	
	911	elementary agricultural occupations	6.34
	912	elementary construction occupations	7.21
	913	elementary process plant occupations	6.67
	914	elementary goods storage occupations	7.03
	921	elementary administration occupations	7.63
	922	elementary personal service occupations	5.33
	923	elementary cleaning occupations	5.86
	924	elementary security occupations	6.84
	925	elementary sales occupations	5.70

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Mean wages are for illustrative purposes only: they refer to the overall average for the whole period (2001-2009), are not deflated and are not adjusted for sample weights. Differences across occupational groups do not vary substantially over the period of analysis.