

YOUTH UNDEREMPLOYMENT IN THE UK IN THE GREAT RECESSION

David N.F. Bell* and David G. Blanchflower**

One of the main puzzles associated with the Great Recession has been the muted increase in recorded unemployment in the UK. In this paper we explore possible explanations for the behaviour of the UK labour market during the period of the recession. We establish that there has been significant underemployment, which partly explains the sluggish increase in unemployment, but also means that (i) significant numbers of workers are supplying fewer hours of work than they would like and (ii) when recovery comes, profit maximising employers are likely to increase the hours of existing workers, rather than making new hires. This particularly disadvantages the young. Our new analysis points to significant levels of underemployment among younger age groups – whether this is measured in relation to their actual hours, of work, their desired hours of work, or their labour force participation.

Keywords: Unemployment; underemployment

JEL Classifications:

I. Introduction

In an article in the previous edition of this *Review* we examined growth in unemployment in the Great Recession that started in Spring 2008 (Bell and Blanchflower, 2010c). In that paper, we showed that the incidence of unemployment had fallen especially hard on the young. We documented the characteristics of the unemployed and reported how they have particularly low levels of well being, are depressed, have low levels of life satisfaction, and are especially likely to be in financial difficulties. This work built on our previous research on youth unemployment and the Great Recession (Bell and Blanchflower, 2009a, 2009b, 2010a and 2010b).

In our earlier paper we also highlighted those who said they worked part-time because there were insufficient full-time jobs available, as well as those who said they would prefer to work more hours, i.e. those who were *underemployed*. We found that members of this group were more likely than other workers to say they were depressed. In this paper, we examine the evidence relating to such underemployment alongside evidence of an increase in temporary jobs when permanent jobs are preferred. As well as examining trends in underemployment, we try to identify the individual

characteristics that have been associated with underemployment during the recent recession. We also look at evidence of discouraged worker effects where individuals leave the labour force despite the fact that they want jobs. We begin by examining past analyses of labour market adjustment during a cyclical downturn.

One framework for the analysis of underemployment is the disequilibrium analysis of factor demands, where adjustment costs prevent immediate adjustment to a new equilibrium following a shock to demand. Notable contributions to this literature were made by Ball and St Cyr (1966); Brechling (1967); Nadiri and Rosen (1974) and Hazeldine (1980). In their models, firms typically minimise costs subject to a production constraint that takes account of the costs of adjusting stocks of labour and capital. After an unexpected demand shock, cost-minimising firms may initially adjust utilisation rather than the stocks of these factors. In the labour market, this implies that firms would cut workers' hours before reducing employment. This requires there to be some contractual flexibility in setting hours of work. And from the workers' perspective, the hours adjustment, though not optimal, may be regarded as the least bad alternative.

*Department of Economics, University of Stirling and IZA. e-mail: d.n.f.bell@stir.ac.uk. **Economics Department, Dartmouth College, University of Stirling, IZA, CESifo and NBER. e-mail: blanchflower@dartmouth.edu.

The relative size and speed of the adjustments of hours and employment depends on their relative costs. Firms will account for the costs of training, hiring, firing and payroll taxes when adjusting the stock of workers. The costs of firing include statutory redundancy payments, which increase with tenure. Thus it typically costs more to terminate an older worker than a younger one. The costs of adjusting hours partly reflect the premium wage rates that are payable outside contracted hours. After a negative shock to demand, employers will be conscious that loss of premium hours will increase the probability that workers quit.

Workers with high levels of specific human capital will be expensive to replace and, in the absence of wage adjustment, firms may opt to reduce their hours in response to an adverse demand shock, hoping that they do not leave the firm. Older workers are more likely to have built up firm-specific human capital. One might therefore expect higher levels of underemployment, or labour hoarding, among older workers. We discuss the empirical evidence on this issue in section 4.

A recession will also affect the types of contract that firms may offer. When faced with increased product market uncertainty, risk-averse firms are less willing to enter into long-term labour contracts. When there is an excess supply of labour, they will make increased use of temporary and part-time contracts, which offer workers fewer protections than full-time contracts. Workers responding to surveys may argue that they would prefer to be on permanent full-time contracts. But the supply of such contracts diminishes during a recession, leading to a higher proportion of workers holding what they perceive to be sub-optimal contracts.

In a flexible labour market, an adverse demand shock is likely to result in more workers wanting to work longer hours, fewer wanting to reduce their hours and an expansion of temporary contracts. Workers may express a preference to change their hours and/or their contracts, but may be unwilling to engage in active job search, because the expected returns to this activity fall during the recession.

Reductions in job search activity can lead to increases in a further form of underemployment – inactivity. Workers' search intensity depends on the potential gains from search (see Mortensen, 1986). One rationale for increasing search activity is to reduce the discrepancy between the reservation wage and the actual wage. But if the potential gains fall substantially, workers may be

discouraged from search activity. Blundell *et al.* (1998) find a significant 'discouraged worker' effect associated with the UK business cycle.

We now examine whether these arguments are reflected in labour market outcomes since the beginning of the Great Recession, initially from a macro perspective.

2. Macro indicators

The major changes that took place in the UK labour market between the beginning of 2008 and the second quarter of 2010 are summarised in table 1 using data drawn from the Labour Force Surveys. First, the table shows that there was a big decline in the labour input during the course of the recession, whether measured by a head count or by the number of hours. Total hours worked fell by 3.9 per cent between 2008 and 2010.

The fall in employment was concentrated among employees, particularly full-timers. This group declined by 826,000 during the recession. But there was an increase of 74,000 in self-employment and part-time self-employment grew by 10.5 per cent. The fear is that many of these jobs will be low paid, given the evidence that, on average, the self-employed are paid less than employees (Blanchflower and Shadforth, 2007).

The number of workers employed on temporary contracts in the UK increased by 8.2 per cent during the recession. We previously suggested that a recession might lead to increased use of temporary contracts; however, it is also possible that employers will react to a recession by reducing their temporary contract workers, because it may cost less to terminate members of this group rather than those on permanent contracts.

This argument may explain the contrast between the UK and some other EU countries in relation to numbers of workers on temporary contracts. In Spain, France and Italy, temporary employment *fell* by 1.7 million between 2008 Q1 and 2010 Q1. The largest decline was in Spain, where it fell by 1.3 million.¹ The reduction in temporary employment partly accounts for the much more rapid rise in unemployment in Spain compared with the UK.

Table 1 also shows that in 2010, 550,000 of those in temporary employment in the UK would prefer to have a permanent job, an increase of 55 per cent since the start of the recession. A similar finding attaches to the increase in part-time working. The number of part-timers rose by 4.3 per cent during the recession, but the

Table 1. Changes in UK labour market since the start of the Great Recession (000s)

	2008	2010	Change 2008-2010	% Change
Total weekly hours (millions)	948.7	911.4	-37	-3.9%
Average Weekly Hours	32.2	31.5	-1	-2.2%
Employed	29,490	28,984	-506	-1.7%
Full-time (FT)	21,992	21,166	-826	-3.8%
Part time (PT)	7,499	7,819	320	4.3%
Employees	25,406	24,838	-568	-2.2%
FT	18,994	18,205	-789	-4.2%
PT	6,413	6,634	221	3.4%
Self-employed	3,858	3,932	74	1.9%
FT	2,932	2,910	-22	-0.8%
PT	926	1,023	97	10.5%
Temporary workers	1,423	1,539	116	8.2%
Could not find permanent job	356	552	196	55.1%
PT because no FT available	698	1,067	369	52.9%
Unemployed	1,619	2,468	849	52.4%
Inactive (Out of Labour Force)	17,830	18,324	494	2.8%
Inactivity rate (Inactive/Population)	36	37	0	1.1%
Students	1,961	2,254	293	14.9%
LT sick	2,033	2,075	42	2.1%
Does not want a job	5,741	5,815	74	1.3%
Wants a job	2,144	2,282	138	6.4%

Source: ONS, *Economic and Labour Market Review*, August 2010.

Notes: The 2008 data covers the period Jan–March 2008, coinciding with the start of the recession. The 2010 data covers the period March–May 2010 (the most recent observation). Data are seasonally adjusted.

number who took a part-time job because no full-time job was available increased by 53 per cent.

Together, these responses suggest that around 1.6 million workers in the UK are either working in temporary jobs because they cannot find a permanent job and/or are working part-time because they cannot find a full-time job. This figure provides an indication of the current scale of underemployment, but does not capture underemployment among workers on full-time contracts who might prefer to work longer hours than are currently being offered.

Such effects can be explored further using micro-data from the Labour Force Survey, which asks workers whether they would like to work more hours, or fewer hours, and if so, how many. Respondents who would prefer fewer hours typically outnumber those with a preference for longer hours by about 5 to 1. At the start of the recession, 2.7 million workers claimed they would prefer to work fewer hours, while 481,000 said they would prefer to work more hours. By 2010Q1, the number seeking fewer hours had declined by 369,000 to 2.3 million.

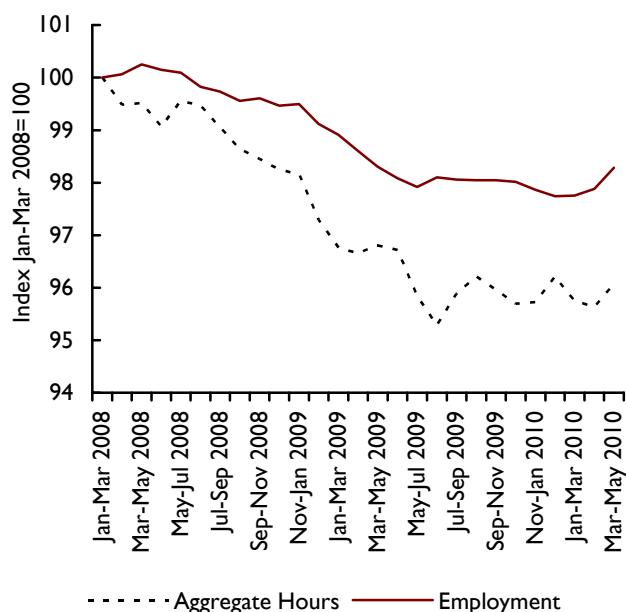
Those seeking longer hours had increased by 20 per cent

to 581,000. But those seeking longer hours typically want to increase their hours by more than those that seek fewer hours want to reduce their hours. Those wishing fewer hours would like, on average, to work around 10.4 hours less. Those seeking more hours, claim they would prefer to work for 14.3 hours longer. These averages changed little over the course of the recession. The main change during the recession has been the fall in the number of workers wanting to work more hours and the rise in the number of workers seeking more hours.

Since the start of the recession there has also been an increase of around 500,000 in inactivity. More than half of this is due to increasing numbers of students. With relatively poor prospects for immediate labour market entry, many young people may have decided to defer finding a job and instead enhance their skills in college or university. This is what has happened; the number of applications to university have risen sharply and in 2010, according to UCAS, were up 11.6 per cent while in 2009 they increased by 9.7 per cent.

Figure 1 shows how adjustment of the UK labour market to the Great Recession was distributed between reductions in aggregate hours and reductions in

Figure 1. Indexed changes in employment and aggregate hours during the Great Recession



employment. With an index value of 100 when the recession started in the first quarter of 2008, it charts the subsequent evolution of aggregate hours and total employment in the UK for the period until March–May 2010. It is clear that, consistent with the theory above, the reduction in aggregate hours has been much greater proportionately than the reduction in employment.

This suggests that employers are ‘hoarding’ labour – i.e. continuing to employ workers that they do not fully utilise. Hoarding is another facet of underemployment. It is consistent with cost-minimising employers responding rationally to differences in the cost of changing workers’ hours and the costs of changing the level of employment.

The corollary of hoarding labour during a downturn is that the increase in demand for new workers is muted when the upturn occurs. Employers increase existing workers’ hours rather than hire new workers. Another issue is that productivity falls and costs rise because employers still have to cover the fixed costs of employment. This may undermine competitiveness and cause employers to put downward pressure on labour costs, including wages.

We now consider whether this recession has differed from past UK recessions in the extent of labour hoarding. We use the identity that gives aggregate hours worked as the product of employment with average hours. We then decompose the logarithmic change in total hours worked (TH) into its components, the logarithmic changes in average hours (H) and in numbers employed (N), i.e.

$$d\ln TH = d\ln H + d\ln N$$

We then measure changes in total hours worked from the peak to trough for the UK recessions of the 1980s, the 1990s and the Great Recession. The results are shown in table 2.

Row 1 gives the percentage change (i.e. the change in the log) of total hours worked from peak to trough in the 1980–83, 1990–93 and 2008–10 recessions.² Rows 2 and 4 show the percentage change in employment and average hours over the same periods respectively. Rows 3 and 5 give the share of the change in total hours resulting from the changes in employment and average hours respectively. The final column measures the ratio of the shares in rows 3 and 5. It thus measures how the total change in hours worked has been weighted towards reductions in employment or reductions in average hours. The larger its value, the more the effects of the recession impact employment rather than hours.

Table 2. Changes in (log) hours and employment in recent UK recessions

		1979–1983	1990–1993	2008–2010
Total hours	Percent change	10.2%	9.1%	4.5%
Employment	Percent change	6.6%	6.3%	2.1%
	Share of total hours change	65.2%	69.5%	48.0%
Hours per worker	Percent change	3.5%	2.8%	2.3%
	Share of total hours change	34.8%	30.5%	52.0%
Employment share/ Hours per worker share		1.88	2.28	0.92

Source: ONS, Economic and Labour Market Review, August 2010.

Hours adjustments played a more prominent role in the current UK recession than in the recessions of the 1980s or the 1990s. The ratio of the employment adjustment to the hours adjustment is clearly lower in 2008–2010 than in the two most recent recessions. Elsby *et al.* (2010) show that the same calculation for the US in the Great Recession yields a ratio around 2.3, which is closer to UK values for the recessions of 1980–83 and 1990–93 than of the current recession. This suggests that in fact the UK economy has made more use of hours adjustment than has the US in the recent recession, contributing to the much lower growth of unemployment in the UK.

Finally, from table 1, we note that there has been an increase of 494,000 in inactivity over the course of the recess, which is clearly consistent with a ‘discouraged worker’ effect. However, much of this increase has come about because the number of students increased by 293,000. This implies that many have taken the view that when the labour market is very slack, investment in human capital will yield a higher return than investment in job search. By comparison, the increase in inactivity among those who claim they are no longer looking for work has been very minor, at 74,000. A further 138,000 claim they want a job, but are not currently seeking and there has been a small increase in long-term sickness of 47,000.

While there has been some rise in inactivity, during the great recession, it does not appear to have been driven by a substantial increase in the number of ‘discouraged workers’. Rather, there has been a large increase in the number of students. The increase in the number no longer wanting a job has been very modest.

3. Micro analysis

In this section, we analyse underemployment using micro data, taking forward the arguments from previous sections. We again use the Labour Force Survey, this time using the individual data to analyse employees’ preferences in respect of the hours and the type of employment contract that they would prefer. To begin, we examine the characteristics of employees who say they have a part-time job but would prefer a full-time one. We construct a dichotomous dependent variable that takes the value one where a worker says they would prefer a full-time job and zero otherwise. We estimate the model by combining data for the period 2009Q1 to 2010Q2 and using an algorithm which provides direct estimates of marginal effects. Results are shown in the first column of table 3.

Firstly it is clear that males are less likely than females to express a preference for full-time working. Since relatively few males work part-time, it may be that their choice reflects a more committed decision to opt for this pattern of working time. Second, there is a very distinctive pattern of preference for full-time jobs by age. The excluded category is of those aged 40–44. Compared with this group, those aged 18–29 are significantly more likely to express a preference for full-time work. In contrast, those aged 60 and above are significantly less committed to full-time work. This finding opens up a new dimension to our previous arguments (see Bell and Blanchflower, 2010a) that the young have suffered disproportionately in the labour market during the current recession.

In column 2 of table 3 we examine the characteristics of those employees who hold a temporary job. Again males are significantly less likely to hold a temporary post, while those in the age group 16–34 have a significantly higher probability of being employed on a temporary basis than those in the reference age group aged 40–44. Older employees are also more likely to be in temporary posts, particularly those aged 65 and above.

Compared with whites, all other races are more likely to be on temporary contracts. The same is true of those born outside the UK and the disabled. Tyne & Wear stands out as having a high proportion of temporary posts compared with all other UK regions. This may reflect its depressed labour market.

Next we analyse the characteristics of employees who suggest that they would prefer to work longer hours, with the dependent variable taking the value one if those on temporary contracts claim that they took a temporary job because no permanent job was available. Results are shown in column 3 of table 3.

Males are more likely to express a preference for a permanent job, as are the young. Those aged 60+ are significantly less likely than the reference group, those aged 40–44, to wish to take up a permanent post. Taking the age related results from columns 2 and 3 together suggests that the young and the old are more likely to be in temporary posts than prime age workers. But the young would overwhelmingly prefer to be in a permanent job, while older workers exhibit no such desire.

Next we examine the characteristics of employees who express a preference to work more hours. We repeat our

Table 3. Probability of being underemployed (probits – marginal effects) and total hours (OLS) – employees only and no industry dummies

	Part-time no full-time available		Temporary job		Temporary no permanent jobs		Prefer more hours		Total hours	
Male	-0.0126	(19.38)	-0.0070	(8.29)	0.0010	(2.26)	-0.0125	(11.38)	8.6401	(163.63)
Age 16–17	0.0053	(1.92)	0.2498	(42.65)	0.0273	(9.84)	0.0916	(18.68)	-18.9721	(89.27)
Age 18–24	0.0545	(30.29)	0.1022	(40.30)	0.0307	(21.44)	0.0473	(19.92)	-4.2566	(40.29)
Age 25–29	0.0064	(4.48)	0.0244	(11.83)	0.0128	(10.55)	0.0052	(2.34)	0.2207	(2.07)
Age 30–34	-0.0017	(1.30)	0.0095	(4.93)	0.0051	(4.59)	0.0006	(0.32)	-0.2150	(2.04)
Age 35–39	-0.0031	(2.40)	0.0034	(1.85)	0.0033	(3.12)	-0.0022	(1.09)	-0.4518	(4.50)
Age 45–49	0.0029	(2.28)	0.0033	(1.82)	0.0019	(1.84)	-0.0033	(1.66)	0.4679	(4.77)
Age 50–54	0.0051	(3.75)	0.0009	(0.49)	-0.0003	(0.38)	-0.0159	(7.73)	0.4515	(4.41)
Age 55–59	0.0025	(1.77)	0.0084	(4.10)	-0.0002	(0.21)	-0.0312	(14.66)	-0.8711	(7.96)
Age 60–64	-0.0080	(5.19)	0.0354	(13.60)	-0.0070	(5.64)	-0.0450	(18.71)	-4.3506	(33.86)
Age 65–69	-0.0092	(3.71)	0.1548	(30.85)	-0.0047	(2.27)	-0.0436	(10.88)	-11.4448	(53.47)
Age 70+	-0.0150	(4.08)	0.1368	(18.04)	-0.0083	(2.54)	-0.0330	(5.17)	-17.4428	(50.21)
Mixed race	0.0197	(4.90)	0.0173	(3.52)	0.0103	(3.60)	0.0158	(2.49)	-0.3197	(1.02)
Asian	0.0307	(15.21)	0.0174	(7.62)	0.0049	(3.97)	0.0214	(7.08)	-3.2610	(22.77)
Black	0.0235	(8.81)	0.0140	(4.45)	0.0064	(3.61)	0.0279	(6.71)	-2.0991	(10.71)
Chinese	0.0300	(5.20)	0.0384	(5.77)	0.0001	(0.04)	0.0124	(1.41)	-1.9935	(4.77)
Other race	0.0324	(9.65)	0.0293	(7.41)	0.0103	(4.80)	0.0236	(4.64)	-1.8886	(7.71)
UK born	-0.0068	(5.56)	-0.0245	(14.79)	-0.0095	(10.00)	-0.0207	(9.74)	-0.9120	(9.22)
2010	0.0070	(8.85)	0.0038	(3.83)	0.0045	(7.56)	0.0074	(5.65)	-0.1199	(1.94)
DDA disabled & work	0.0150	(10.19)	0.0193	(9.56)	0.0070	(6.02)	0.0207	(8.31)	-3.3264	(27.79)
DDA disabled	0.0030	(2.16)	0.0051	(2.78)	0.0022	(2.00)	0.0080	(3.37)	-0.1869	(1.72)
Work limiting disabled	0.0184	(9.00)	0.0138	(5.22)	0.0081	(5.17)	0.0181	(5.38)	-1.6776	(10.71)
Higher degree	-0.0183	(14.79)	0.0479	(19.20)	0.0021	(1.90)	-0.0463	(20.61)	3.1444	(23.92)
NVQ level 5	-0.0207	(3.84)	-0.0063	(0.71)	-0.0103	(2.44)	-0.0430	(4.44)	4.0799	(7.83)
First degree	-0.0181	(15.91)	0.0193	(9.46)	-0.0016	(1.70)	-0.0452	(21.77)	1.7118	(14.39)
Other degree	-0.0176	(6.49)	0.0205	(4.44)	-0.0074	(3.44)	-0.0405	(8.36)	2.4459	(9.23)
NVQ level 4	-0.0160	(5.95)	-0.0020	(0.44)	-0.0071	(3.27)	-0.0276	(5.56)	2.4977	(9.28)
Diploma in HE	-0.0114	(5.51)	0.0108	(3.06)	-0.0060	(3.64)	-0.0277	(7.25)	0.4198	(1.99)
HNC, HND, BTEC	-0.0158	(9.92)	-0.0032	(1.24)	-0.0064	(5.10)	-0.0255	(8.59)	0.3441	(2.16)
Teaching, FE	-0.0097	(1.90)	0.0685	(7.50)	-0.0049	(1.12)	-0.0170	(1.79)	0.0030	(0.01)
Teaching, secondary	-0.0021	(0.28)	0.1247	(9.63)	0.0003	(0.05)	0.0009	(0.07)	-0.9757	(1.39)
Teaching, primary	0.0001	(0.02)	0.1616	(14.11)	0.0064	(1.20)	-0.0123	(1.11)	0.2919	(0.50)
Nursing	-0.0198	(10.34)	-0.0047	(1.40)	-0.0093	(5.54)	-0.0391	(10.46)	-0.3590	(1.69)
Other higher educ	-0.0130	(3.92)	0.0055	(1.00)	-0.0059	(2.24)	-0.0173	(2.81)	-0.3755	(1.13)
NVQ level 3	-0.0120	(8.21)	-0.0136	(5.93)	-0.0083	(7.51)	-0.0084	(2.96)	0.4947	(3.27)
International bacc'te	-0.0100	(0.96)	0.0911	(4.32)	-0.0133	(1.85)	-0.0304	(1.52)	-3.2135	(2.72)
GNVQ/GSVQ advanced	-0.0103	(2.56)	-0.0073	(1.17)	-0.0086	(3.00)	0.0008	(0.11)	-1.1493	(2.84)
A-level	-0.0156	(12.15)	0.0134	(5.72)	-0.0080	(7.96)	-0.0238	(9.36)	-1.5216	(10.83)
RSA advanced diploma	-0.0194	(2.32)	0.0086	(0.62)	0.0064	(0.81)	-0.0000	(0.01)	-4.6877	(5.79)
OND, ONC, BTEC Natnl	-0.0075	(3.54)	0.0033	(0.99)	-0.0029	(1.79)	-0.0134	(3.44)	-1.3390	(6.45)
City & Guilds adv craft	-0.0169	(8.08)	-0.0069	(2.12)	-0.0027	(1.65)	-0.0156	(4.08)	0.8292	(4.30)
SCE higher or equivalent	-0.0178	(7.11)	-0.0138	(3.30)	-0.0084	(4.21)	-0.0193	(3.68)	-1.5965	(5.61)
Access qualifications	-0.0027	(0.29)	0.0432	(2.61)	-0.0039	(0.53)	0.0459	(2.43)	-5.6786	(6.02)
A,S level or equivalent	-0.0176	(6.99)	-0.0006	(0.17)	-0.0088	(4.54)	0.0016	(0.30)	-6.9306	(22.17)
Trade apprenticeship	-0.0119	(7.03)	-0.0148	(5.93)	-0.0051	(4.01)	-0.0128	(4.09)	0.9285	(5.86)
NVQ level 2 or equivalent	0.0032	(1.95)	-0.0082	(3.49)	-0.0048	(4.15)	0.0114	(3.79)	-0.7554	(4.95)
GNVQ/GSVQ intermediate	-0.0037	(0.76)	-0.0288	(4.14)	-0.0098	(2.88)	0.0168	(1.74)	-2.4006	(4.71)
RSA diploma	0.0176	(2.15)	-0.0228	(2.05)	-0.0027	(0.42)	0.0191	(1.35)	-4.1153	(5.95)
City & Guilds craft/ part 2	-0.0043	(1.25)	0.0128	(2.34)	0.0027	(1.00)	-0.0008	(0.14)	-0.7529	(2.44)
BTEC, SCOTVEC 1st dip	0.0049	(0.94)	0.0007	(0.10)	-0.0038	(1.05)	0.0061	(0.66)	-2.1154	(4.31)

Table 3. (continued)

	Part-time no full-time available		Temporary job		Temporary no permanent jobs		Prefer more hours		Total hours	
O level, GCSE grade a–c	-0.0078	(6.36)	-0.0146	(8.11)	-0.0068	(7.38)	-0.0122	(5.37)	-1.1916	(10.02)
NVQ level I or equivalent	0.0198	(4.48)	-0.0115	(1.98)	-0.0011	(0.38)	0.0316	(4.08)	-3.2053	(8.43)
CSE below grade I	0.0007	(0.37)	-0.0108	(3.65)	-0.0010	(0.66)	0.0021	(0.60)	-1.4074	(7.66)
RSA other	-0.0033	(0.76)	0.0051	(0.80)	0.0028	(0.68)	-0.0096	(1.12)	-2.2639	(5.56)
City & Guilds foundation	0.0205	(2.53)	-0.0077	(0.72)	-0.0023	(0.41)	0.0634	(4.47)	-0.0706	(0.11)
YT, YTP certificate	0.0272	(1.53)	0.0761	(2.71)	0.0120	(0.91)	0.0437	(1.52)	-2.0029	(1.47)
Key skills qualifications	-0.0134	(0.91)	-0.0203	(0.95)	0.0016	(0.13)	0.0426	(1.39)	-0.0339	(0.02)
Basic skills qualifications	0.0204	(3.31)	0.0062	(0.74)	0.0116	(2.55)	0.0637	(5.52)	-5.5544	(9.88)
Entry level qualifications	0.0170	(1.22)	-0.0028	(0.16)	0.0153	(1.38)	0.0671	(2.54)	-2.2899	(1.93)
No qualifications	0.0166	(10.00)	-0.0161	(8.14)	-0.0037	(3.39)	-0.0067	(2.57)	-2.6954	(20.06)
Don't know qualifications	-0.0086	(2.93)	-0.0172	(3.87)	-0.0082	(3.78)	-0.0446	(8.73)	0.6175	(2.08)
Constant									32.2270	
N	259825		259783		259183		259873		227204	
Pseudo/Adjusted R ²	0.0641		0.0674	0.0410	0.0343		0.2068			

Source: LFS 2009–June 2010.

Notes: excluded categories other qualifications; ages 40–44; white and January. T-statistics in parentheses. Month dummies and 19 region dummies also included.

previous methodology, with the dependent variable taking the value one for workers who wish to work more hours and zero otherwise. Results are shown in column 4 of table 3. Alongside these estimates, we present in column 5 the results of a simple regression that seeks to explain total hours worked by individuals as a function of their individual characteristics. Thus, for example, conditional on their other characteristics, males work 8.65 hours longer than females, but express a clear preference to work shorter hours than their female counterparts.

Young workers are clearly ‘hours constrained’. Those aged 16–24 work significantly fewer hours than prime age workers but express a very strong preference to increase their working time. Older workers work fewer hours than those aged 40–44, but are significantly less likely to express a preference for more hours.

Self-employed workers have more latitude to vary their hours than do employees, since they implicitly write their contract of employment with themselves. To determine whether this issue affects the level of working time provided or aspired to, we replicated the analysis of full-time/part-time work and hours of work restricting

the sample to self-employed workers. Full results are available on request.

But in practice, we find little difference in the effects of conditioning variables on hours worked, preferences over hours or the wish to take a full-time rather than a part-time job. In particular, the younger self-employed consistently express a preference for full-time jobs and more hours of work, but actually work fewer hours than their prime-age counterparts. Whether individuals are employed or self-employed does not affect the finding that the young have been significantly underemployed during the Great Recession.

Clearly the possibility exists that these young people have disproportionately been employed in industries where part-time and temporary work is the norm. In such a case then it would be appropriate to control for industry and this is what is done in table 4. We report a selected few of the most important industry dummies in the table. The industries where underemployment is concentrated are retail trade, education and employment agencies, which include temporary agencies. In each case the coefficients on the youth variables decline compared to those in table 3. On the

Table 4. Probability of being underemployed (probits – marginal effects) and total hours (OLS) – Wemployees only with industry dummies

	Part-time no full-time available		Temporary job		Temporary no permanent jobs		Prefer more hours		Total hours	
Male	-0.0023	(4.09)	0.0015	(1.74)	0.0020	(4.32)	0.0004	(0.38)	7.1537	(125.90)
Age 16–17	-0.0067	(3.78)	0.2630	(43.25)	0.0324	(11.30)	0.0583	(12.84)	-16.4789	(77.55)
Age 18–24	0.0317	(22.34)	0.1062	(41.56)	0.0313	(22.36)	0.0344	(14.86)	-3.1643	(29.92)
Age 25–29	0.0044	(3.73)	0.0257	(12.92)	0.0121	(10.65)	0.0060	(2.74)	0.2842	(2.71)
Age 30–34	-0.0016	(1.49)	0.0115	(6.18)	0.0052	(5.06)	0.0022	(1.06)	-0.2204	(2.13)
Age 35–39	-0.0026	(2.42)	0.0044	(2.55)	0.0032	(3.29)	-0.0013	(0.67)	-0.4541	(4.61)
Age 45–49	0.0023	(2.14)	0.0026	(1.55)	0.0015	(1.61)	-0.0036	(1.82)	0.5258	(5.46)
Age 50–54	0.0042	(3.76)	-0.0002	(0.13)	-0.0006	(0.67)	-0.0158	(7.85)	0.4636	(4.62)
Age 55–59	0.0016	(1.45)	0.0056	(2.94)	-0.0007	(0.73)	-0.0315	(15.22)	-0.7459	(6.94)
Age 60–64	-0.0071	(5.80)	0.0306	(12.55)	-0.0064	(5.80)	-0.0450	(19.35)	-4.2422	(33.62)
Age 65–69	-0.0089	(4.74)	0.1439	(30.03)	-0.0047	(2.50)	-0.0451	(11.89)	-11.0891	(52.76)
Age 70+	-0.0132	(4.81)	0.1239	(17.29)	-0.0076	(2.63)	-0.0347	(5.71)	-16.9163	(49.63)
Mixed race	0.0134	(4.12)	0.0179	(3.83)	0.0108	(4.03)	0.0132	(2.13)	-0.0257	(0.08)
Asian	0.0214	(12.95)	0.0217	(9.71)	0.0070	(5.88)	0.0174	(5.90)	-2.8986	(20.56)
Black	0.0154	(7.18)	0.0125	(4.23)	0.0061	(3.70)	0.0227	(5.63)	-1.9568	(10.15)
Chinese	0.0146	(3.34)	0.0417	(6.37)	0.0026	(0.82)	0.0042	(0.51)	-1.0108	(2.46)
Other race	0.0235	(8.59)	0.0283	(7.53)	0.0101	(5.01)	0.0200	(4.06)	-1.6917	(7.04)
UK born	-0.0058	(5.69)	-0.0230	(14.61)	-0.0083	(9.59)	-0.0213	(10.10)	-0.8607	(8.83)
2010	0.0054	(8.30)	0.0032	(3.38)	0.0040	(7.40)	0.0066	(5.12)	-0.0847	(1.40)
DDA disabled & work	0.0099	(8.34)	0.0173	(9.17)	0.0064	(6.01)	0.0171	(7.08)	-3.0358	(25.84)
DDA disabled	0.0024	(2.09)	0.0047	(2.75)	0.0021	(2.09)	0.0070	(3.05)	-0.1299	(1.22)
Work limiting disabled	0.0129	(7.79)	0.0113	(4.62)	0.0073	(5.08)	0.0145	(4.45)	-1.3845	(9.01)
Higher degree	-0.0145	(14.09)	0.0220	(9.97)	-0.0011	(1.17)	-0.0477	(21.28)	3.9935	(29.75)
NVQ level 5	-0.0150	(3.29)	-0.0062	(0.77)	-0.0092	(2.41)	-0.0383	(3.95)	4.1739	(8.16)
First degree	-0.0122	(12.37)	0.0101	(5.37)	-0.0022	(2.53)	-0.0404	(19.09)	2.0060	(16.75)
Other degree	-0.0121	(5.21)	0.0139	(3.28)	-0.0066	(3.41)	-0.0352	(7.17)	2.7005	(10.34)
NVQ level 4	-0.0116	(5.14)	-0.0060	(1.46)	-0.0068	(3.49)	-0.0247	(5.02)	2.6365	(9.94)
Diploma in HE	-0.0076	(4.36)	0.0043	(1.36)	-0.0054	(3.61)	-0.0240	(6.26)	0.6661	(3.20)
HNC, HND, BTEC	-0.0091	(6.30)	-0.0036	(1.46)	-0.0056	(4.94)	-0.0184	(6.05)	0.1684	(1.07)
Teaching, FE	-0.0097	(2.54)	0.0308	(4.17)	-0.0070	(2.03)	-0.0256	(2.91)	1.1801	(2.41)
Teaching, secondary	-0.0069	(1.33)	0.0626	(6.16)	-0.0050	(1.07)	-0.0173	(1.41)	0.5957	(0.87)
Teaching, primary	-0.0059	(1.45)	0.0858	(9.43)	-0.0021	(0.54)	-0.0289	(2.99)	1.9274	(3.36)
Nursing	-0.0132	(7.77)	-0.0048	(1.49)	-0.0066	(3.88)	-0.0320	(8.07)	-0.3793	(1.75)
Other higher educ	-0.0099	(3.66)	-0.0002	(0.05)	-0.0061	(2.61)	-0.0160	(2.64)	0.0217	(0.07)
NVQ level 3	-0.0081	(6.60)	-0.0160	(7.64)	-0.0076	(7.68)	-0.0072	(2.54)	0.5507	(3.67)
International bacc'te	-0.0101	(1.25)	0.0696	(3.65)	-0.0126	(2.12)	-0.0268	(1.37)	-2.7441	(2.37)
GNVQ/GSVQ advanced	-0.0059	(1.71)	-0.0050	(0.84)	-0.0071	(2.67)	0.0067	(0.88)	-0.9527	(2.39)
A-level	-0.0112	(10.38)	0.0137	(6.09)	-0.0067	(7.11)	-0.0190	(7.36)	-1.2598	(9.05)
RSA advanced diploma	-0.0122	(1.58)	0.0088	(0.66)	0.0053	(0.72)	0.0135	(0.79)	-5.3492	(6.74)
OND, ONC, BTEC national	-0.0042	(2.28)	0.0013	(0.41)	-0.0030	(2.00)	-0.0094	(2.41)	-1.1830	(5.79)
City & Guilds adv craft	-0.0105	(5.50)	-0.0017	(0.54)	-0.0015	(1.00)	-0.0097	(2.50)	0.3275	(1.72)
SCE higher or equivalent	-0.0128	(6.00)	-0.0109	(2.72)	-0.0069	(3.71)	-0.0127	(2.39)	-1.4841	(5.31)
Access qualifications	-0.0010	(0.14)	0.0331	(2.19)	-0.0042	(0.65)	0.0457	(2.46)	-5.5712	(6.02)
A, S level or equivalent	-0.0145	(7.59)	0.0011	(0.31)	-0.0071	(3.94)	0.0008	(0.17)	-6.1168	(19.93)
Trade apprenticeship	-0.0054	(3.54)	-0.0096	(3.93)	-0.0036	(2.98)	-0.0064	(2.01)	0.3130	(2.00)
NVQ level 2 or equivalent	0.0032	(2.34)	-0.0087	(3.98)	-0.0041	(3.81)	0.0105	(3.53)	-0.6181	(4.10)
GNVQ/GSVQ intermediate	-0.0006	(0.16)	-0.0260	(3.98)	-0.0086	(2.75)	0.0230	(2.37)	-2.5081	(5.02)
RSA diploma	0.0171	(2.40)	-0.0217	(2.09)	-0.0027	(0.46)	0.0238	(1.66)	-4.0838	(6.03)
City & Guilds craft/ part 2	-0.0034	(1.22)	0.0116	(2.24)	0.0025	(0.99)	-0.0009	(0.16)	-0.7058	(2.33)

Table 4. (continued)

	Part-time no full-time available		Temporary job		Temporary no permanent jobs		Prefer more hours		Total hours	
BTEC, SCOTVEC										
1st dip	0.0047	(1.07)	0.0025	(0.36)	-0.0018	(0.52)	0.0085	(0.92)	-1.9426	(4.03)
O level, GCSE grade a-c	-0.0045	(4.32)	-0.0112	(6.51)	-0.0055	(6.41)	-0.0078	(3.45)	-1.1855	(10.11)
NVQ level I or equivalent	0.01390	(3.88)	-0.0095	(1.72)	-0.0004	(0.16)	0.0266	(3.56)	-2.7949	(7.50)
CSE below grade I	0.0011	(0.69)	-0.0077	(2.72)	-0.0003	(0.24)	0.0027	(0.77)	-1.3938	(7.73)
RSA other	0.0024	(0.61)	0.0124	(1.93)	0.0057	(1.40)	-0.0022	(0.25)	-2.3584	(5.90)
City & Guilds foundation	0.0169	(2.54)	-0.0063	(0.62)	-0.0015	(0.30)	0.0585	(4.24)	0.0744	(0.12)
YT, YTP certificate	0.0249	(1.59)	0.0792	(2.89)	0.0111	(0.91)	0.0422	(1.50)	-2.4315	(1.82)
Key skills qualifications	-0.0102	(0.91)	-0.0249	(1.31)	-0.0037	(0.35)	0.0449	(1.49)	-0.1385	(0.09)
Basic skills qualifications	.0139	(2.78)	0.0046	(0.60)	0.0096	(2.35)	0.0591	(5.25)	-5.0235	(9.10)
Entry level qualifications	.0135	(1.18)	-0.0034	(0.20)	0.0161	(1.56)	0.0631	(2.44)	-2.0807	(1.79)
No qualifications	0.0108	(8.04)	-0.0117	(6.15)	-0.0026	(2.57)	-0.0089	(3.50)	-2.3484	(17.76)
Don't know qualifications	-0.0062	(2.59)	-0.0149	(3.57)	-0.0074	(3.77)	-0.0429	(8.53)	0.7537	(2.58)
Retail trade	0.0482	(7.09)	-0.0258	(6.21)	-0.0102	(5.37)	0.0498	(5.37)	-9.7764	(27.16)
Employment agencies	0.0488	(5.88)	0.1428	(12.64)	0.0563	(8.77)	-0.0040	(0.40)	-6.1605	(13.43)
Education	0.0361	(5.81)	0.0303	(4.77)	0.0022	(0.77)	0.0642	(6.68)	-8.3597	(23.09)
Creative arts & entertainment	0.0506	(4.64)	0.0753	(6.20)	0.0081	(1.54)	0.0551	(3.39)	-7.6846	(11.58)
Libraries, archives & museums	0.0536	(5.69)	0.0080	(1.02)	0.0004	(0.11)	0.0606	(4.48)	-11.4815	(22.04)
Sports, amusement etc	0.0449	(5.96)	0.0328	(4.52)	0.0008	(0.25)	0.0632	(5.82)	-9.7925	(23.81)
Constant									38.6383	
N	258566	259500	258428	259462	227014					
Pseudo/Adjusted R ²	0.1189	0.1013	0.0738	0.0495	0.2384					

Source: LFS 2009–June 2010.

Notes: excluded categories other qualifications; ages 40–44; white; forestry and logging and January. T-statistics in parentheses. Month dummies and 19 region dummies also included along with 89 two-digit industry dummies.

other hand the choice of industry is potentially endogenous, with young people being forced into part-time jobs in particular industries where such jobs are available. Indeed this is consistent with findings of Kahn (2010) who has shown that cohorts who graduate when economies are in recession tend to end up in lower-level occupations.

Finally, in table 5 we estimated the probability that an individual reports that they are out of the labour force but want a job, with the dependent variable set to zero for the rest of the population. These individuals can be thought of as discouraged workers. The sample is restricted to those under age 70. It is apparent that the

young are especially likely to have given up searching for work, even though they would like a job. The same is true of the disabled, those born outside the UK and non-whites (except Asians). The better qualified typically are less likely to be discouraged, perhaps because the returns to search are larger for this group.

4. Conclusions

One of the main puzzles associated with the Great Recession has been the muted increase in recorded unemployment in the UK. In this paper we have sought to explore possible explanations for the behaviour of the UK labour market during the period of the recession. We

Table 5. Probability of being out of the labour force and wanting a job – age<70

	All		Males		Females	
Male	-0.0116	(20.69)				
Age 16–17	0.0954	(40.74)	0.1285	(36.21)	0.0637	(20.69)
Age 18–24	0.0240	(17.21)	0.0290	(15.12)	0.0196	(9.89)
Age 25–29	0.0083	(5.89)	0.0013	(0.71)	0.0124	(6.09)
Age 30–34	0.0093	(6.71)	-0.0015	(0.85)	0.0166	(8.14)
Age 35–39	0.0047	(3.65)	-0.0029	(1.79)	0.0100	(5.37)
Age 45–49	-0.0056	(4.82)	-0.0005	(0.37)	-0.0092	(5.49)
Age 50–54	-0.0051	(4.33)	0.0033	(2.01)	-0.0116	(6.86)
Age 55–59	-0.0048	(4.01)	0.0054	(3.25)	-0.0129	(7.66)
Age 60–64	0.0030	(2.46)	0.0153	(8.95)	-0.0143	(8.22)
Age 65–69	0.0075	(5.12)	0.0297	(13.73)	-0.0138	(7.12)
Mixed race	0.0190	(6.03)	0.0081	(2.15)	0.0293	(6.03)
Asian	0.0002	(0.21)	-0.0040	(2.34)	0.0033	(1.60)
Black	0.0178	(8.53)	0.0210	(7.27)	0.0147	(5.01)
Chinese	0.0082	(1.84)	-0.0089	(1.72)	0.0223	(3.31)
Other race	0.0147	(5.95)	0.0217	(6.35)	0.0095	(2.72)
UK born	-0.0060	(5.53)	-0.0036	(2.60)	-0.0071	(4.45)
2010	0.0025	(3.79)	0.0040	(4.95)	0.0012	(1.22)
DDA disabled & work	0.1495	(15.92)	0.1660	(91.03)	0.1247	(69.73)
DDA disabled	0.0025	(2.18)	0.0050	(3.22)	0.0024	(1.46)
Work limiting disabled	0.0454	(23.13)	0.0401	(16.59)	0.0494	(16.46)
Higher degree	-0.0240	(18.51)	-0.0161	(9.66)	-0.0311	(16.66)
NVQ level 5	-0.0093	(1.49)	-0.0027	(0.35)	-0.0166	(1.74)
First degree	-0.0216	(19.27)	-0.0115	(7.93)	-0.0305	(18.70)
Other degree	-0.0158	(5.42)	-0.0072	(2.10)	-0.0262	(5.89)
NVQ level 4	-0.0200	(6.41)	-0.0063	(1.38)	-0.0305	(7.37)
Diploma in HE	-0.0102	(4.67)	-0.0034	(1.04)	-0.0165	(5.70)
HNC, HND, BTEC	-0.0119	(7.08)	-0.0092	(5.02)	-0.0141	(4.87)
Teaching, FE	-0.0153	(3.02)	0.0038	(0.49)	-0.0288	(4.15)
Teaching, secondary	-0.0195	(3.32)	-0.0019	(0.22)	-0.0324	(3.76)
Teaching, primary	-0.0220	(4.58)	-0.0223	(1.46)	-0.0235	(3.96)
Teaching, level not stated	-0.0036	(0.48)	0.0026	(0.19)	-0.0063	(0.65)
Nursing	-0.0137	(6.44)	0.0031	(0.50)	-0.0179	(6.78)
RSA Higher diploma	0.0163	(1.48)	0.0754	(1.58)	0.0129	(1.02)
Other higher educ. qual.	-0.0015	(0.44)	0.0085	(1.73)	-0.0108	(2.36)
NVQ level 3	-0.0114	(7.17)	-0.0099	(4.44)	-0.0155	(7.03)
International bacc'te	0.0045	(0.47)	0.0179	(1.26)	-0.0083	(0.65)
GNVQ/GSVQ advanced	-0.0024	(0.54)	-0.0117	(1.87)	0.0010	(0.16)
A-level	-0.0027	(1.96)	0.0073	(3.94)	-0.0124	(6.11)
RSA advanced diploma	0.0044	(0.54)	0.0488	(2.01)	-0.0037	(0.38)
OND, ONC, BTEC national	-0.00	(1.20)	0.0017	(0.67)	-0.0092	(2.74)
City & Guilds adv craft	-0.0073	(3.61)	-0.0065	(3.46)	-0.0031	(0.58)
SCE higher or equivalent	-0.0109	(3.89)	-0.0074	(2.06)	-0.0137	(3.36)
Access qualifications	0.0124	(1.44)	0.0324	(1.91)	0.0025	(0.24)
A,S level or equivalent	0.0040	(1.44)	0.0242	(6.05)	-0.0123	(3.22)
Trade apprenticeship	0.0024	(1.55)	0.0008	(0.56)	0.0016	(0.46)
NVQ level 2 or equivalent	0.0006	(0.41)	0.0005	(0.25)	-0.0020	(0.88)
GNVQ/GSVQ intermediate	0.0012	(0.25)	-0.0089	(1.29)	0.0045	(0.65)
City & Guilds craft/part 2	0.0064	(1.95)	0.0057	(1.60)	0.0094	(1.62)
BTEC, SCOTVEC 1st dip	0.0082	(1.75)	0.0087	(1.47)	0.0056	(0.82)
O level, GCSE grade A–C	0.0003	(0.26)	0.0026	(1.81)	-0.0023	(1.30)
NVQ level 1 or equivalent	0.0113	(3.30)	0.0072	(1.59)	0.0139	(2.80)
GNVQ, GSVQ foundation	0.0567	(3.63)	0.1009	(4.22)	0.0263	(1.25)
CSE below grade I	0.0120	(6.11)	0.0079	(3.30)	0.0151	(5.05)
BTEC, SCOTVEC 1 st cert	0.0233	(1.46)	0.0199	(1.07)	0.0230	(0.91)
SCOTVEC modules	0.0269	(1.51)	0.0700	(2.69)	-0.0154	(0.63)
RSA other	-0.0013	(0.40)	0.0167	(1.32)	0.0035	(0.81)
City & Guilds foundation	0.0293	(4.65)	0.0263	(3.84)	0.0310	(2.77)
YT, YTP certificate	0.0401	(2.99)	0.0085	(0.62)	0.0832	(3.50)

Table 5. (continued)

	All		Males		Females	
Key skills qualifications	-0.0102	(1.04)	-0.0111	(1.18)	-0.0110	(0.62)
Basic skills qualifications	0.0390	(8.70)	0.0274	(4.73)	0.0446	(6.93)
Entry level qualifications	0.0031	(0.37)	0.0221	(1.94)	-0.0146	(1.23)
No qualifications	0.0054	(4.60)	0.0052	(3.67)	0.0063	(3.43)
Don't know qualifications	-0.0130	(4.52)	-0.0054	(1.52)	-0.0187	(4.14)
N	453364		217252		236034	
Pseudo R ²	0.1129		0.1647		0.0871	

Source: LFS 2009–June 2010.

Notes: excluded categories other qualifications; ages 40–44; white and January. T-statistics in parentheses. Sample is total population. Month dummies also included as controls. Equations also include 19 region dummies.

have established that there has been significant underemployment, which partly explains the sluggish increase in unemployment, but also means that (i) significant numbers of workers are supplying fewer hours of work than they would like and (ii) when recovery comes, profit maximising employers are likely to increase the hours of existing workers, rather than making new hires.

This particularly disadvantages the young. Our previous work has shown that unemployment among this group has increased most rapidly during the Great Recession. Our new analysis points to significant levels of underemployment among younger age groups – whether this is measured in relation to their actual hours of work, their desired hours of work, or their labour force participation.

NOTES

- 1 Source, Eurostat.
- 2 We use hours data to date the various recessions, focusing on the 3-monthly moving average of hours and employment. The 2008–10 recession began in January–March 2008. We assume it ended when they reached a minimum, in the period February–April 2010. We have experimented with small variations in the timing of all three recessions, and while this does affect values of the ratios, it does not materially affect our argument.

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