

# **Multiple scarring effects of youth unemployment in the UK**

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## **Abstract**

Research suggests that a person's initial experience of entering work affects their future working life and wellbeing, and if this is an adverse experience then a person might be 'scarred' in later life. This paper considers the scarring effects of the length of unemployment upon future pay, unemployment and wellbeing, five and ten years later, on young adults aged between 18 and 24. Using cohort data, from the British Household Panel Survey from 1998-2008, it constructs Ordinary Least Squares and logistic regression models to analyse the different forms of potential scarring. The results confirm the existence of a scarring effect in terms of reduced pay and a greater likelihood of future unemployment, although the associated factors varied between each other and over time. There appears to be little decay in the scarring effect with the likelihood of increased unemployment, due to being unemployed in 1998, being similar both five and ten years later. There is little evidence of a scarring effect on people's subjective wellbeing as measured by their satisfaction with life.

# Multiple scarring effects of youth unemployment in the UK

## 1. Introduction

High levels of youth unemployment result in young people facing a range of challenges, such as low levels of income and wellbeing (Winkelmann and Winkelmann 1998; Young, 2012). As well as the contemporaneous effects of unemployment on young people, there appear to be longer term ‘scarring’ impacts on later life in terms of subsequent lower pay, higher unemployment or reduced life chances (Clark et al., 2001; Lucas et al., 2004; Gregg and Tominey, 2005; Bell and Blanchflower, 2011). However, there are few studies on the long-term effects of unemployment on human welfare and wellbeing (Daly and Delaney, 2013) of episodes of unemployment early in one’s career.

The mechanisms that may transmit the effects of periods of youth unemployment to future pay, unemployment and/or life satisfaction appear inter-connected, with wellbeing and mental health affecting subsequent income, but being affected themselves by unemployment (e.g. Goodman et al., 2011; Oswald and De Neve, 2012). Five broad inter-related groups of theories on the mechanisms that may lead to scarring concern: (1) employer responses, (2) the person’s human capital, (3) their expectations, (4) job search and (5) the influence of external factors in the economy and society.

First, on the demand-side, periods of unemployment may be used as negative signals by employers, for example of low productivity, so increasing the likelihood of a person not being hired or having to accept a lower paid job (Blau and Robins, 1990; Cockx and Picchio, 2013; Erikson and Lagerstrom, 2006; Lockwood, 1991).

Second, scarring may be due to unemployment when young affecting a person’s human capital at a crucial stage in their career, leading to reduced generic or technical skills acquisition or skills redundancy and to a general loss of confidence by the individual. The direction of causation may be unclear as low self-confidence may lead to unemployment and/or be a result of unemployment. Daly and Delaney (2013) and Wanberg (2012) find that low wellbeing amongst those currently unemployed is unlikely to be fully attributable to poor mental health leading to job loss as job loss also reduces mental health.

Third, the scarring effect, particularly on wellbeing, may operate through expectations, such as a greater expectancy of future unemployment (Knabe and Rätzel, 2011). Indeed anticipated unemployment, rather than the experience of past unemployment, may reduce job satisfaction (Lange, 2013).

Fourth, search and matching theory suggest that more intensive job searches can lead to higher pay rewards (Böheim and Taylor, 2002). However, while a more intensive search may be possible while unemployed, compared to those in work or full-time study, success also depends on factors such as aspirations and awareness of their own productivity (McCall, 1970) which may be lower among those unemployed. Using the US 1979 National Longitudinal Survey of Youth, Mohanty (2012) found that workers’

positive attitudes and optimism influence future employment and wages through their decision to participate in the labour market (including whether to search for a job), and it is likely that unemployment in youth may reduce such optimism.

Finally, external factors such as the state of the economic environment or operation of institutions may also influence the scarring for those suffering job displacement (Eliason and Storrie, 2006; Gangl, 2006). Unemployment has less impact on the prospects of those living in high unemployment areas possibly due to social norms being influenced by the greater prevalence of unemployment (Clark, 2003; Lupi and Ordine, 2002). Highly-educated young people may be more able to wait for a better job offer than those with lower education, who get fewer offers and are under greater pressure to accept offers (Schmelzer, 2011). Entering short-lived jobs, rather than rejecting them, increases the probability of entering a long-lasting job within two years, although the effects on job quality may not be positive (Cockx and Picchio 2012; Baert et al., 2013; see also Brand, 2006). While temporary jobs may be a stepping stone into permanent jobs, there may be a scarring effect in terms of a wage penalty (Booth et al., 2002). So entering short-term work may affect employment and wage scarring differently. Employment policies are another important external factor with Strandh and Nordlund (2008) finding that the positive effects of both employment and training labour market policies (in terms of reaching pre-unemployment income levels and unemployment or likely exit from the labour market) operate differently from each other over time.

The current paper focuses on the scarring effects of the length of unemployment on the progress of the cohort of people aged 18 to 24 years in 1998 through to 2008 in the UK, using British Household Panel data (University of Essex, 2010) in terms of their future pay, unemployment and satisfaction with life. It particularly focuses on the relationships with their human capital. Section 2 presents literature on the scarring effects of youth unemployment. Section 3 outlines the data and descriptive statistics. Section 4 presents three models of ‘scarring’ effects as the cohort upon pay, unemployment and life satisfaction, using OLS and logistic regression techniques. Finally, conclusions are discussed.

## **2. Previous studies on the scarring effects of youth unemployment**

This section considers the literature on the ‘scarring’ effects on pay, unemployment and satisfaction with life. Periods of unemployment when young have a significant effect on future pay and income (Gregory and Jukes, 2001; Krahn et al., 2012), especially for the low skilled (Burgess et al., 2003; Gregg and Tominey, 2005). Arulampalam (2001) found that while unemployment has a wage scar effect, and the first spell is the most damaging, duration of unemployment is not significantly important and redundancy is less scarring than other types of unemployment.

Unemployment when young might also result in lower future occupational status and downward job mobility resulting in having lower quality jobs (Layte et al., 2000; Gangl,

2004; Dieckhoff, 2011). However, Cockx and Picchio (2013) found that duration of unemployment does not necessarily have a direct scarring effect on the quality of future employment. For men, early employment instability was found to be linked to lower career satisfaction as well as lower occupational status (Krahn et al., 2012).

Pay potential may also be affected through damaged or decayed cognitive and non-cognitive skills reducing the level of human capital (Cockx and Picchio, 2013; Becker, 1975; Pissarides, 1992). Cognitive skills (for example, learning skills and the ability to process information) are likely to affect the productivity and adaptability of a worker and hence their likely pay progression. Non-cognitive skills (for example, a person's dependability, self-discipline, inter-personal skills, communication, adaptability, consistency, persistence and self-confidence) affect labour market outcomes, including subsequent pay, and their wellbeing (Heckman, et al., 2006; Mroz and Savage, 2006; Blanden et al., 2007; Felstead et al., 2007; Green, 2009). Higher levels of non-cognitive skills also influence job search and/or these characteristics may lead to better educational performance and hence cognitive skills (Carneiro et al., 2007; Heineck, 2010; Heineck and Anger, 2010). Scarring may reduce, or be ameliorated by, non-cognitive skills.

There are important potential policy implications of this as, although there is limited consensus as to the degree that non-cognitive skills can be altered after adolescence and entry into the labour market and the effects of youth unemployment on them, there is evidence that some can be altered throughout working life (Heckman and Krueger, 2005). There are strategies that can assist in compensating for low cognitive skills such as planning (e.g. detailing where, how and when to start job search), which can improve the transition from job search intention to behaviour (van Hooft et al., 2005).

In terms of 'scarring' effects on the likelihood of later unemployment, Perkins and Scutella (2008) found that prior employment status had the most powerful effect on current employment status: so those who were previously unemployed were more likely to be currently unemployed. People who had been unemployed for a longer term were less likely to return to employment than those who were recently in work (Blanchard and Diamond, 1994; McQuaid, 2006; Cockx and Picchio, 2013;). This may be particularly pronounced for those with limited work experience to begin with, such as young workers, a small minority of whom have become persistently unemployed (Gregg, 2001).

Luijkx and Wolbers (2009) found both genders were affected by scarring in terms of future unemployment, although the scarring duration was greater for men, while Böheim and Taylor (2002) showed that while previous unemployment was associated with shorter tenure in later jobs and a higher likelihood of enforced redundancy, the effect was less for women than men. However, Stewart (2007), using a random effects model, concluded that it is difficult to disentangle the various effects and the impact of low-wage jobs is statistically indistinguishable from the impact of unemployment on future prospects.

The 'scarring' effects of youth unemployment may influence health and wellbeing

(Winkelmann and Winkelmann, 1998; Lucas et al., 2004; Andersen, 2009; Daly and Delaney, 2013; Fergusson et al., 2001; Hammarström and Janlert 2002; Hammarström et al., 1988), including influencing psychiatric illness during young adulthood (Fergusson et al., 1997) and psychological health and increased likelihood of smoking (Reine et al., 2004) as well as lower general satisfaction with life. Stiglitz et al. (2009, p. 44) note that, after controlling for their lower income, people who become unemployed report lower life-evaluations and more negative effects (such as stress or sadness). Daly and Delaney (2012) found that unemployment during their earlier life was associated with increased psychological distress at the age of 50, based on the UK National Child Development Study (NCDS) data; while Young, (2012), using panel data, found reduced wellbeing due to job loss and unemployment in the USA.

The causal direction is not uni-directional as Goodman et al. (2011) found that wellbeing in early years influences later labour market outcomes and also that childhood psychological health disorders were far more important over the lifecourse than physical health problems. However, Knabe et al. (2010), using a Day Reconstruction Method, rather than asking about general life satisfaction, found that unemployed people adapted and did not experience lower utility on a day-to-day basis. The usual relationships between personality and wellbeing may also change due to unemployment with Boyce et al. (2010) finding that after three years of unemployment more conscientious individuals, who usually have high wellbeing, showed a greater decrease in their life satisfaction than less conscientious individuals. Using data from ten years of the British Household Panel Survey Burchardt (2004) found that people tend to adapt to their situation rather than being scarred by it.

Kahneman et al. (2004) argue that circumstances (e.g., income, marital status, etc.) have surprisingly small effects on wellbeing and Young (2012) also found that changes in family income after entering unemployment were not significantly correlated with subjective wellbeing. Together these factors suggest that the scarring effects of wellbeing may decrease over time. The effects of unemployment on wellbeing may vary according to various factors, such as personal characteristics and the creation of social norms whereby, for instance, young people being unemployed in areas of high youth unemployment may be less negatively affected in terms of wellbeing compared to others in areas where unemployment is less common (Clark, 2003).

While the roles of pay and unemployment are well established in utility maximising models, linking wellbeing to prior events and social networks suggests that factors beyond price and information exchange are important to people's wellbeing. The social networks of workers have been found to be closely tied to higher wellbeing (Raeside et al., 2010; Valante, 2010), as well as to finding employment (Granovetter, 1982; Holzer, 1988; Lindsay et al., 2005). More generally the social capital embedded in social networks can limit the ways in which young people look for work and close down opportunities (MacDonald et al., 2005). So contacts with others, especially 'weak links' rather than close family ties are important for job search in addition to wellbeing, as they

provide information not readily available and can provide support such as references and advice on applications, as well as providing emotional and other support. Periods of unemployment while young may, according to Gayen et al. (2010), hamper the formation of networks, especially those with contacts related to workplaces and foster isolation from mainstream society.

Having explored the literature on scarring, the data to test the hypotheses that unemployment when young will have scarring effects upon future pay, unemployment and satisfaction with life, five and ten years later are now described.

### **3. Data and descriptive statistics**

In this section we present the progress of a cohort of young adults aged between 18 and 24 in 1998 that are followed for a decade (18 being the age at which the majority of school students have left school in the UK). So by 2008 they were 28-34 years old. The data are from the British Household Panel Survey waves corresponding to H (mainly 1998) and R (mainly 2008) and are modelled to determine how individual characteristics, personal circumstances and other variables are associated with monthly pay, the likelihood of being unemployed and their overall satisfaction with life for the years 1998, 2003 and 2008.

Summaries of the dependent variables are presented in Table 1. The numbers in the cohort was 607 of which 56% were female. The sample size is smaller in Table 1 due to the differential answering of questions. The mean monthly pay was £802 in 1998 when the respondents were young (18-24 years), but nominal wages more than doubled by 2008 as the age of the people had increased by a decade (the Retail Prices Index rose by around a third during this period). The percentage of the cohort that was unemployed decreased markedly (from 6.4% to 4.4%) and over the period their careers became more established, their household responsibilities increased and employment in the economy expanded somewhat. Wellbeing was measured by the question “satisfaction with life overall” measured on a seven point scale from not satisfied at all (1) to completely satisfied (7) with a mid-point of 4 representing neither satisfied nor dissatisfied. This was dichotomised to 0 representing 1 to 4 (not satisfied) and 1 as above 4 (satisfied). The responses to this variable decreased slightly for the cohort over the time period, moved from 83.3% to 81.7% being satisfied<sup>1</sup>.

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<sup>1</sup> Ferrer-i-Carbonell and Frijters (2004) argue that the assumption of ordinality or cardinality of happiness scores makes little difference.

Table 1: Dependent variables of cohort aged 16-24 years in 1998

	1998	2003	2008
N	445	457	426
Mean pay last month (£, nominal)	802.00	1449.81	1937.30
Standard deviation of mean pay (£)	427.76	833.28	1264.80
% Unemployed	6.4%	5.4%	4.4%
% Satisfied with life	83.3%	82.3%	81.7%

The independent variables are summarised in Table 2 taking the situation in 2003 as being representative. One partial measure of human capital and cognitive skills is educational qualifications and nearly a quarter (23.6%) had a degree while 31.0% had high school leaving final qualifications (A levels or equivalent) as their highest qualification and 6.1% had no qualifications. Nearly four-fifths (79.6%) were in employment, 5.4% unemployed and 15.0% classified as other (mostly in education or training). Over a third lived in rental housing (35.7%). Almost half (46.1%) were single (not married or having a partner). 30.1% had access to a car or van.

A person's changing self-confidence was taken as a surrogate for some changes in their use of non-cognitive skills. Using data from the General Health Questionnaire (GHQ) in the BHPS around half (51.5%) were not losing confidence at the time of the survey and over a third (36.0%) were no worse off than usual, but 12.6% were losing confidence more or much more than usual. A limitation of this measure is that it frames the variables in terms of change, so someone with low self-confidence who is not getting worse will indicate no change, while someone with high self-confidence experiencing a small decline will indicate a decrease.

The remainder of the independent variables are measured on continuous or Likert scales. The length of unemployment is important for the reasons discussed above and the average annual length of unemployment in the weeks before the first survey in 1998 was 2.43 weeks (but with a wide variation as indicated by the standard deviation of 8.59). Social networks (important for job search and wellbeing) are measured by the frequency of talking to neighbours (on a 1-5 scale with talking 'most days' valued as 5 (reversed from the BHPS coding) and a mean of 2.90) and frequency of meeting people (on a 1-5 scale with meeting 'most days' valued as 5 and a mean of 3.48). The number of children (mean 0.85) may act as a motivator for gaining employment, but may also be associated with higher pay for fathers who on average earn more than non-fathers (Paull, 2008). The pay models consider those in full-time work and so exclude part-time working mothers. Finally the number of people in the household (mean 3.05) indicates sharing accommodation or living with relatives if the person is single, often indicating limited resources. The 'event' causing the scarring is taken as the number of weeks unemployed in 1998, which was on average 2.43 weeks.

Table 2: Independent variables taking the situation in 2003 as representative

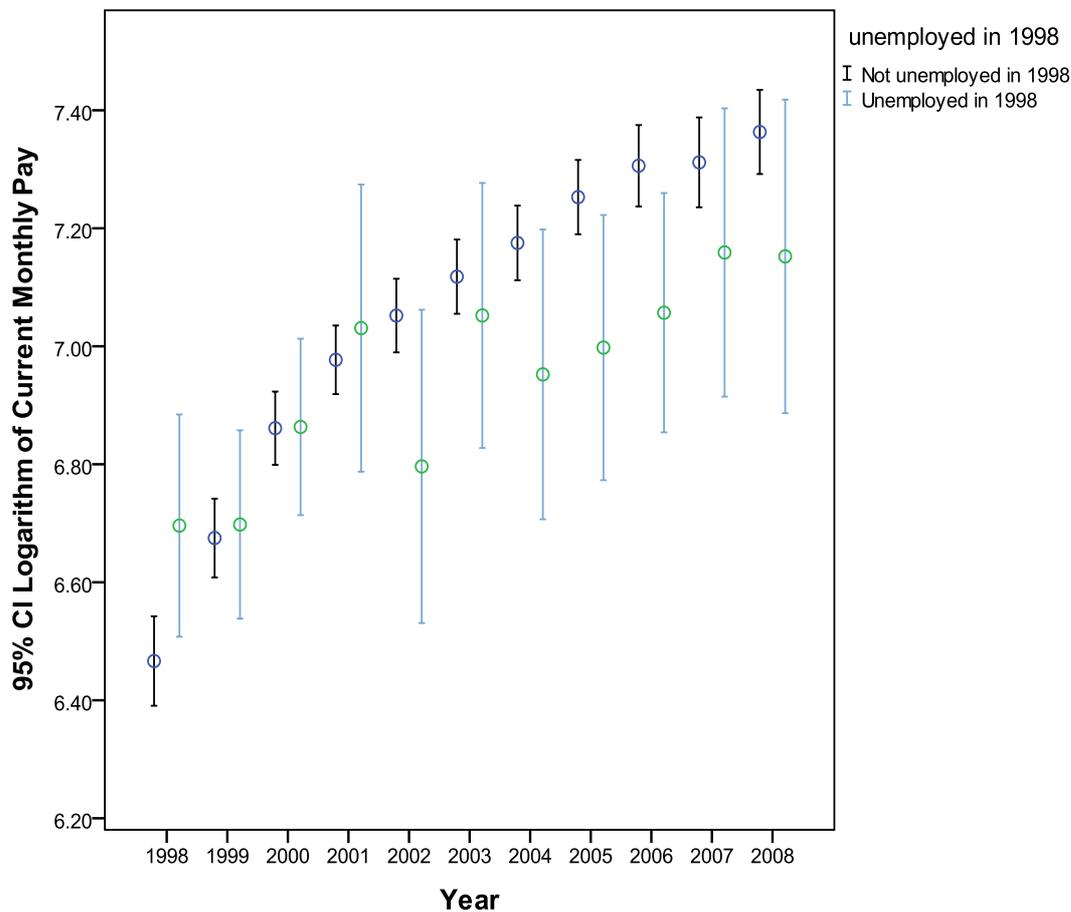
<b>Highest Academic Qualification</b>	N	Percentage
Degree	139	23.6
HND, HNC, teaching	41	7.0
A Level	183	31.0
O Level, CSE	191	32.4
None of these	36	6.1
Total	590	
<b>Employment status</b>		
Employed	483	79.6
Unemployed	33	5.4
Other (mainly education, training)	91	15.0
<b>Rent house</b>	210	35.7
<b>Single</b>	280	46.1
<b>Have access to a car or van</b>	178	30.1
<b>Losing Confidence</b>		
Not at all	300	51.5
No more than usual	210	36.0
Rather more	65	11.2
Much more	8	1.4
Total	583	
<b>Continuous and Likert Variables</b>	<b>Mean</b>	<b>St. dev.</b>
Frequency of talking to neighbours (1 = never - 5 = most days)*	2.90	1.10
Frequency of meeting people (1 = never, 5 = most days)*	3.48	0.66
Financial situation (1 = finding it very difficult, 5 living comfortably)*	2.95	0.84
Children in household	0.85	0.73
Number of people in household	3.05	1.50
Weeks unemployed in 1998	2.43	8.59

\* Scales reversed from those used in BHPS

The sample was divided into two groups: those who were unemployed in 1998 and those who were not. Monthly pay was tracked through to 2008 as the cohort aged, Figure 1, in which means of (the natural logarithm of) pay and their 95% confidence levels are shown for the two groups. From this it is apparent that initially both groups have similar pay but

as time progresses, especially after about four years, those who were unemployed in 1998 are clearly paid less than their contemporaries.

Figure 1: Logarithm of pay and unemployment when young



#### 4. Models of pay, likelihood of unemployment and life satisfaction

##### Pay scarring

The model for the effects of scarring on current monthly pay (for those in full time employment) is:

$$\ln Pay = f(D, H, S, Y) + \varepsilon$$

Where:  $\ln Pay$  is the natural logarithm of last month's pay;  $D$  represents the demographic variables (gender, age, marital status and number of children under 12);  $H$  is cognitive and non-cognitive human capital (highest academic qualifications and changing self-confidence),  $S$  is social capital (measured by frequencies of talking to neighbours and of meeting people);  $Y$  is their history of initial (or baseline) entry to the labour market (whether or not they unemployed in 1998; i.e. 5 or 10 years previously, in 2003 and 2008 respectively); and  $\varepsilon$  is the error due to unobserved variables and measurement errors. All

variables are measured at the same time points as each other (i.e. 1998, 2003 and 2008). The model takes the form of:

$$\ln Pay_{it} = \alpha_t + \sum_{j=1}^4 \beta_{jt} D_{it} + \sum_{j=1}^2 \delta_{jt} H_{it} + \sum_{j=1}^2 \phi_{jt} S_{it} + \sum_{j=1}^2 \gamma_{jt} Y_{it} + \varepsilon_{it}$$

Taking three waves corresponding to 1998, 2003 and 2008 for those aged 18 to 24 in 1998, an Ordinary Least Squares (OLS) regression model was used to fit the natural logarithm of the last month's current pay. The results are presented in Table 3, showing the coefficients and the standard errors.

Table 3: Determinants of the last month's pay, using unemployment to measure scarring effects

	1998		2003		2008	
	coef	se	coef	se	coef	se
Female	-0.361***	0.030	-0.376***	0.078	-0.351***	0.070
Age at Date of Interview	0.013***	0.001	0.050***	0.013	0.012	0.015
Single	-0.116***	0.021	-0.032	0.044	-0.035	0.062
Children in household	0.025	0.031	0.285***	0.082	0.220***	0.080
Rent house	-0.170***	0.024	-0.105**	0.048	-0.150*	0.060
Frequency of talking to neighbours	-0.048**	0.021	0.017	0.047	-0.098*	0.056
Frequency of meeting people	-0.030	0.025	-0.043	0.078	-0.055	0.078
Qualification (baseline degree+)						
<i>HND, HNC, Teaching</i>	-0.179***	0.036	-0.183**	0.089	-0.184**	0.108
<i>A level</i>	-0.382***	0.027	-0.216***	0.054	-0.275***	0.065
<i>O Level, CSE</i>	-0.448***	0.026	-0.254***	0.057	-0.272***	0.070
<i>None</i>	-0.736***	0.033	-0.448	0.385	-0.321**	0.161
Losing confidence	-0.014	0.031	-0.254*	0.147	-0.058	0.038
Weeks unemployed 5 years ago			-0.003	0.003	-0.008*	0.005
Weeks unemployed 10 years ago					-0.006*	0.004
Constant	7.363***	0.052	6.188***	0.369	7.766***	0.498
Number of observations	430		334		279	
Adjusted R square	36.2%		18.6%		24.6%	
RMSE	0.43		0.38		0.42	

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

The results suggest that in 1998 the significant determinants of higher pay were: being male, being older (within the 18-24 age group), being married or co-habiting, having a degree, not renting accommodation and not talking to neighbours frequently. These appear consistent with expectations other than for social networks (talking to neighbours) as discussed below.

These effects tend to persist as the cohort ages and here is an apparent consistent gender pay gap each year. The effect of the person's relative age compared to others in the cohort unsurprisingly becomes less important over time and is not significant by the last period (as expected as the difference between an 18 and 24 year old may be important but the age gap is less important when they are aged 28 and 34). Having a degree remains significant for all years, except in 2003 when having no qualifications is not disadvantageous (perhaps as when young, people with higher education may initially have less work experience than those with low qualifications and entry pay levels for graduates may be relatively low). Having children in the household is positively associated with pay in the latter two periods as expected (see discussion above). Social networks appear to be negatively associated with higher pay in 1998 and 2008 (only at the 10% level) in terms of talking to neighbours less often (perhaps as they still live on more transient neighbourhoods, not yet in more settled family areas, and are more centred on their immediate friends and also neighbours are unlikely to provide career support, compared to, say, network of former work colleagues). There were no significant association in terms of the frequency of meeting people. So these measures of networks do not appear to support getting higher pay. Losing confidence is only significantly associated with lower pay in 2003 and is not significant in the other years (perhaps suggesting that over the first ten years cognitive skills became more important than some non-cognitive ones).

There is evidence of slight pay scarring in 2008 with a negative and significant (10% level) association between current pay and the number of weeks unemployed both five and ten years ago, when they first entered the labour market.

### Unemployment scarring

The effect of scarring on a person's likelihood of being unemployed later in life is now considered. The dependent variable is binary (employed or unemployed), so a binary logistic regression was used to obtain the probability of being unemployed in the respective year. The model for the effect of scarring on the likelihood of being unemployed (the variables are as discussed above) took the form:

$$P(\text{Unemployed}) = f(D, H, S, Y) + \varepsilon$$

The logistic model was:

$$\ln\left(\frac{P(\text{unemployed})_i}{1 - P(\text{unemployed})_i}\right) = \alpha_i + \sum_{j=1}^5 \beta_j D_{it} + \sum_{j=1}^2 \delta_j H_{it} + \sum_{j=1}^2 \phi_j S_{it} + \sum_{j=1}^2 \gamma_j Y_{it} + \varepsilon_{it}$$

The coefficients of the models are displayed in Table 4. In these models the dependent variable is 1 if unemployed and 0 if in work or in education and training.

Table 4: Logistic models of the likelihood of being unemployed

	1998			2003			2008		
	coef	se	odds ratio	coef	se	odds ratio	coef	se	odds ratio
Female	-0.409	0.393	0.664	-0.038	0.428	0.963	-1.258**	0.58	0.284
Age at date of interview	-0.094	0.099	0.910	0.025	0.108	1.025	0.178	0.132	1.195
Single	3.766**	1.798	43.207	1.45	1.374	4.263	0.095	1.498	1.100
Children in household	1.821*	1.023	6.178	0.024	0.866	1.024	-0.262	0.992	0.770
Number of people in household	0.099	0.147	1.104	0.066	0.178	1.068	0.082	0.253	1.085
Rent house	0.728*	0.404	2.071	-0.462	0.484	0.630	0.906	0.581	2.474
Qualification (baseline degree+)									
<i>HND, HNC, Teaching</i>				-0.913	1.141	0.401	-0.551	1.219	0.576
<i>A level</i>	-0.746	0.715	0.474	-0.569	0.658	0.566	-1.182	0.933	0.307
<i>O Level, CSE</i>	-0.534	0.702	0.586	0.433	0.555	1.542	-0.038	0.752	0.963
<i>None</i>	1.181	0.785	3.258	-0.048	1.013	0.953	-1.013	1.16	0.363
Frequency of talking to neighbours	-0.036	0.161	0.965	-0.259	0.195	0.772	-0.086	0.247	0.918
Frequency of meeting people	-0.081	0.29	0.922	-0.043	0.323	0.958	-0.500	0.335	0.607
Losing confidence	0.892***	0.242	2.440	-0.274	0.313	0.760	0.990***	0.326	2.691
Does not have the use of car or van	0.677***	0.24	1.968	0.12	0.281	1.127	0.806**	0.325	2.239
Weeks unemployed 5 years ago				0.062***	0.015	1.064	0.032*	0.019	1.033
Weeks unemployed 10 years ago							0.058***	0.019	1.060
Constant	-7.381**	3.183	0.001	-5.196	3.58	0.006	-12.627***	4.642	0.000
Number of Observations	546			565			533		
Pseudo R Square	20.60%			15.80%			32.40%		

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

In 1998 being unemployed is associated with being single, having (more) children in the household, loss of self-confidence, renting a house and not having access to a car or van. Loss of confidence is associated with over twice (odds ratio of 2.44) the likelihood of being unemployed; however, the direction of causation is unclear as this may partly cause, or be caused by, unemployment. As the cohort progresses to 25 to 29 years old (in 2003) most of the associations disappear, except for some scarring effect as there is a significant (1% level) association between the likelihood of being unemployed in 2003 and the number of weeks unemployed some five years previously (odds ratio of 1.06). These results appear to suggest that in 2003 the major effect on unemployment is scarring, with a 6% higher probability of being unemployed. By 2008, as the 1998 cohort has aged by 10 years there is a pronounced effect of scarring in that the number of weeks unemployed five and ten years previously are both significantly positively associated with being unemployed (10% and 1% levels respectively). The odds ratios related to unemployment in 1998 are very similar, suggesting little decay over time (1.064 in 2003

and 1.060 in 2008). The odds ratio of being unemployed in 2003 was lower than that of being unemployed when younger in 1998 (1.033).

In the 2008 group (now 30 to 34 years old) females are also significantly less likely to be unemployed. However, those who lack confidence were 2.691 times as likely to be unemployed (significant at 1% level), and similarly for those who do not have the use of a car or van. The results indicate the variation in the importance of different factors over time, the crucial importance of scarring to unemployment and also that the number of factors related to pay scarring are more numerous and vary from those that are important to pay scarring. Interesting the increased likelihood of being unemployed due to unemployment when young (1998) hardly changed between five and ten years later (odds ratios of 1.064 and 1.060 respectively).

### Satisfaction with life

The model of the effect of scarring on the probability of having a higher satisfaction, taken as a surrogate for wellbeing, included additional variables that are likely to be associated with a person's wellbeing (these were not included in the other models due to endogeneity with the dependent variable). These were their financial situation (as measured by the question of how well is the person doing financially with 1 = finding it very difficult, 5 living comfortably), the natural log of last month's pay, the annual weeks unemployed in that year, and pay change from five and from ten years earlier. The model (the variables are as discussed above and F represents an individual's financial situation) took the form:

$$P(\text{Satisfied}) = f(D, H, S, F, Y) + \varepsilon$$

and the logistic model was:

$$\log \text{it} \left( \frac{P(\text{satisfied})_i}{1 - P(\text{satisfied})_i} \right) = \alpha_i + \sum_{j=1}^5 \beta_{jt} D_{it} + \sum_{j=1}^3 \delta_{jt} H_{it} + \sum_{j=1}^2 \phi_{jt} S_{it} + \sum_{j=1}^2 \varphi_{jt} F_{it} + \sum_{j=1}^2 \gamma_{jt} Y_{it} + \varepsilon_{it}$$

A binary logistic regression model was used to model satisfied with life (value = 1) versus not particularly satisfied (value = 0) and to identify scarring. The model coefficients are presented in Table 5.

Table 5: Logistic regression model of satisfaction with life

	1998			2003			2008		
	Coef	Se	odds ratio	coef	se	odds ratio	coef	se	odds ratio
Female	0.207	0.357	1.230	1.177***	0.446	3.245	0.707	0.468	2.028
Age at Date of	-0.223**	0.095	0.800	-0.147	0.108	0.863	0.135	0.106	1.145

Interview									
Single	-0.643	1.088	0.526	-1.214	1.158	0.297	0.414	1.045	1.513
Children in household	0.018	0.645	1.018	-0.438	0.662	0.645	1.212*	0.708	3.360
Number of people in household	0.015	0.14	1.015	-0.305	0.189	0.737	-0.050	0.21	0.951
Rent house	-0.165	0.357	0.848	0.474	0.455	1.606	-0.082	0.464	0.921
Qualification (baseline degree+)									
<i>HND, HNC, Teaching</i>	0.702	1.166	2.018	-0.872	0.856	0.418	0.093	1.103	1.097
<i>A level</i>	0.019	0.608	1.019	-0.636	0.601	0.529	-0.844	0.665	0.430
<i>O Level, CSE</i>	-0.847	0.594	0.429	-0.957	0.602	0.384	-0.601	0.696	0.548
<i>None</i>	-0.465	1.017	0.628	-1.941*	1.039	2.826	-2.018*	1.094	0.133
Frequency of talking to neighbours	0.357**	0.151	1.429	0.358*	0.189	1.208	0.182	0.202	1.200
Frequency of meeting people	0.222	0.269	1.249	0.358	0.293	1.430	0.617**	0.301	1.853
Financial situation	0.607***	0.184	1.835	0.200	0.252	1.221	0.428*	0.238	1.534
Employment Status (baseline employed)									
<i>Unemployed*</i>	1.11	1.506	3.034	-2.504	1.617	0.082			
<i>Other</i>	0.48	0.632	1.616	1.380	1.559	3.975	1.260	1.376	3.525
Natural log of last month's pay	0.306	0.288	1.358	0.968**	0.442	2.633	0.567	0.424	1.763
Annual weeks unemployed: year to Sept 1 <sup>+</sup>	-0.041*	0.024	0.960	0.014	0.033	1.014			
Losing confidence	-0.926***	0.233	0.396	1.642***	0.288	1.334	-1.391***	0.314	0.249
Pay change % from 1998 (5 Yr)+				-2.427*	1.344	3.834			
Weeks unemployed 5 years ago				-0.010	0.035	0.990	-0.009	0.036	0.991
Pay change % from 1998 (10 Yr)							-1.278	1.295	0.279
Weeks unemployed 10 years ago							-0.023	0.031	0.977
Constant	9.472***	3.292		5.725	3.926		-2.729	4.593	
Number of Observations	435			351			310		
Pseudo R Square	18.60%			25.70%			23.60%		

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1

+ This could not be estimated for 2008 due to low sample sizes

In 1998 being younger (within the 18-24 year old age group), talking more frequently to neighbours, being in a good financial situation, having fewer weeks unemployed annually and not losing self-confidence (again the direction of causation with this variable is unclear) are all significantly associated with being more satisfied with life. Losing confidence is consistent with Stiglitz et al.'s (2009) identification of the negative effects of unemployment.

Moving on five years, being male, having no qualifications, infrequently talking to neighbours and losing confidence are all associated with a lower satisfaction with life. A higher percentage change in pay from 1998 also has a significant negative relation with life satisfaction, which seems counter intuitive but may be partly due to people moving from low pay when they were students up to a higher pay after they graduate but not as high as expected. Meanwhile higher pay last month, as expected, remains positively associated with life satisfaction but becomes significantly so.

In 2008 being more satisfied with life is again associated with a good financial situation as is a greater frequency in meeting people (indicating a positive effect of stronger social networks on life satisfaction). Only in 2008 do children in the household become significantly associated with greater satisfaction with life (perhaps as the parents are more mature and equipped for child rearing). This interestingly illustrates some of the changing effects of factors influencing wellbeing over a person's lifecourse. Meanwhile having no qualifications and losing confidence (low human capital) are negatively and significantly associated with lower life satisfaction.

Importantly, there appears to be no significant wellbeing scarring effect due to previous unemployment either five or ten years previously (although as expected the signs of the variables are negative).

## **5. Conclusions**

This paper considered the scarring effects of periods of unemployment near the start of young people's working lives on their future labour market outcomes (future pay and the likelihood of further unemployment) and wellbeing (measured by satisfaction with life), both five and ten years later. For both labour market outcomes there is clear evidence of scarring effects. For wellbeing there is no significant evidence of scarring.

Using the British Household Panel Survey database, pay and unemployment both show scarring effects from being unemployed when young, although the associated factors varied between each other and over time (their initial lifecourse). Crucially, for pay, the number of weeks unemployed both five and ten years earlier is significantly associated with lower pay in 2008. There is no significant pay scarring at five years in 2003. After ten years, the factors significantly associated with higher pay the previous month, included being male, having children in the household, having a degree and not renting nor frequently talking to neighbours. Losing self-confidence (which may be linked to non-cognitive skills) was negatively associated with pay only after five years, in 2003 (although causation could be two ways). Unsurprisingly, the effect of relative age (being older than others in the cohort) diminished in importance over time. Hence there is support for the link between a person's socio-demographic and human capital (non-cognitive skills and cognitive skills as measured by qualifications) characteristics and scarring on pay.

There is also clear evidence of scarring on future unemployment, with unemployment both five years and ten years previously being associated with a greater likelihood of being unemployed. However, in contrast to pay, after ten years unemployment is associated with being male and not having a car or van. Being single or having (more) children in 1998 are associated with unemployment then but there is no significant association in later years. As with pay, scarring is associated with losing confidence. So there is support for a link between a person's human capital and scarring on future unemployment in terms of non-cognitive skills, but not in terms of cognitive skills. In addition, there appears to be little decay in the scarring effect with the likelihood of increased unemployment, due to being unemployed in 1998, being similar both five and ten years later. In 2008 there is also evidence of scarring due to being unemployed five years earlier.

Importantly there is little evidence of scarring on life satisfaction, a measure of wellbeing, due to earlier unemployment. Satisfaction with life after ten years is significantly positively associated with having children in the household, qualifications, meeting people regularly, a better financial situation and non-cognitive skills such as not losing self-confidence. Younger relative age and not talking to neighbours was significantly negatively associated with life satisfaction in 1998 but not in later years. The results appear to support Kahneman et al., (2004) who argue that many circumstances have small effects on wellbeing; and Burchard (2004) in that adverse effects on life satisfaction are likely to be greater with recent, rather than longer term, changes in circumstances. The insignificance of current pay also supports Young (2012) on the relatively low importance of income but it is worth noting that people's perception of their financial situation (feeling in good financial situation), rather than actual pay, is positively associated with life satisfaction.

Hence, using the same cohort, the results suggest that being unemployed when young has scarring on later pay and unemployment but found no significant evidence of scarring on later life satisfaction. The results suggest that policy makers should seek to ensure that young people's transition into work is as effective as possible particularly through developing and maintaining high human capital, including the gaining of meaningful qualifications and improving non-cognitive skills. They also suggest that an emphasis is needed on policies that seek to reduce longer periods of unemployment for young. Further research is required on the strength and length of time of different types of scarring and how these vary over the lifecycle. Research is also needed on the scarring effects of different types of job loss and unemployment at different ages, for instance scarring may differ if people are first unemployed later in life, and on the scarring effect of unemployment on others in the household.

## References

- Andersen, S. 2009. Unemployment and Subjective Well-Being: A Question of Class? *Work and Occupations*, 36(1): 3-25.
- Arulampalam, W. 2001. Is Unemployment Really Scarring? Effects of Unemployment Experiences on Wages. *The Economic Journal*, 111(475): 585-606.
- Baert, S., Cockx, B. and D. Verhaest. 2013. Overeducation at the start of the career: Stepping stone or trap? *Labour Economics*, 25: 123-140
- Becker, G.S., 1975. *Human Capital: A Theoretical and Empirical Analysis with Special Reference to Education*, 2nd Edition. New York: NBER.
- Bell, D.N.F. and D.G. Blanchflower. 2011. Young people and the Great Recession. *Oxford Review of Economic Policy*, 27(2): 241-267
- Blanchard, O. and P. Diamond. 1994. Ranking, Unemployment Duration and Wages. *The Review of Economic Studies*, 61: 417-434.
- Blau, D.M., and P.K. Robins. 1990. Job Search Outcomes for the Employed and Unemployed. *Journal of Political Economy*, 98(3):637-55.
- Blanden, J., Gregg, P., and L. Macmillan. 2007. Accounting for Inter-Generational Income Persistence: Non-Cognitive Skills, Ability and Education. London: CEE Discussion Paper 73. Centre for Economics of Education.
- Böheim, R. and M.P. Taylor. 2002. The Search for Success: Do the Unemployed Find Stable Employment? *Labour Economics*, 9(6): 717-735.
- Booth, A.L., Francesconi, M. and J. Frank. 2002. Temporary Jobs: Stepping Stones or Dead Ends? *The Economic Journal*, 112(480), Features: F189-F213.
- Boyce, C.J., Wood A.M., and G.D.A. Brown. 2010. The dark side of conscientiousness: Conscientious people experience greater drops in life satisfaction following unemployment, *Journal of Research in Personality*, 44: 535–539.
- Brand, J. 2006. “The Effects of Job Displacement on Job Quality: Findings from the Wisconsin Longitudinal Study.” *Research in Social Stratification and Mobility* 24: 275-98.
- Burchardt, T. 2004. Are one man’s rags another man’s riches? Identifying adaptive expectations using panel data, CASE paper 86, London School of Economics.
- Burgess, S., Propper, C., Rees, H. and A. Shearer. 2003. The class of 1981: the effects of early career unemployment experiences. *Labour Economics*, 10: 291-309.
- Carneiro, P., Crawford, C. and A. Goodman. 2007. The Impact of Early Cognitive and Non-Cognitive Skills on Later Outcomes. CEE Discussion Paper 92. London: Centre for Economics of Education.
- Clark, A. E. 2003. Unemployment as a Social Norm: Psychological Evidence from Panel Data. *Journal of Labor Economics*, 21: 323-351.
- Clark, A.E., Georgellis, Y. and P. Sanfey. 2001. Scarring: The psychological impact of past unemployment. *Economica*, 68: 221–241.

- Cockx, B. and M. Picchio. 2012. Are Short-lived Jobs Stepping Stones to Long-Lasting Jobs? *Oxford Bulletin of Economics and Statistics*, 74: 646–675.
- Cockx, B. and M. Picchio. 2013. Scarring effects of remaining unemployed for long-term unemployed school-leavers. *Journal of the Royal Statistical Society*, 176 (4): 951–980
- Daly, M. and L. Delaney. 2013. The scarring effect of unemployment throughout adulthood on psychological distress at age 50: Estimates controlling for early adulthood distress and childhood psychological factors, *Social Science & Medicine*, 80: 19-23.
- De Neve, J-E, and A.J. Oswald. 2013. Estimating the influence of life satisfaction and positive affect on later income using sibling fixed effects, *Proceedings of the National Academy of Sciences of the United States of America* 109(49): 19953-19958.
- Dieckhoff, M. 2011. The effect of unemployment on subsequent job quality in Europe: A comparative study of four countries. *Acta Sociologica*, 54(3): 233-249.
- Doiron, D., and T. Gørgens. 2008. State dependence in youth labor market experiences, and the evaluation of policy interventions. *Journal of Econometrics*, 145: 81-97.
- Eliason, M., and D. Storrie. 2006. Lasting or Latent Scars? Swedish Evidence on the Long Term Effects of Job Displacement. *Journal of Labor Economics*, 24(4): 831-856.
- Eriksson, S., and J. Lagerstrom. 2006. Competition between Employed and Unemployed Job Applicants: Swedish Evidence. *Scandinavian Journal of Economics* 108(3): 373-96.
- Felstead, A., Gallie, D., Green, F. and Y. Zhou. 2007. *Skills at Work, 1986 to 2006*. ESRC Centre on Skills, Knowledge and Organisational Performance, Coventry. Available: <http://www.cardiff.ac.uk/socsi/contactsandpeople/alanfelstead/SkillsatWork-1986to2006.pdf> [Accessed 21 March 2014].
- Ferrer-i-Carbonell, A. and P. Frijters. 2004. How important is methodology for the estimates of determinants of happiness? *The Economic Journal*, 114: 641-59.
- Fergusson, D.M., Horwood, L.J. and M.T. Lynskey. 1997. The effects of unemployment on psychiatric illness during young adulthood. *Psychological Medicine*, 27: 371-381.
- Fergusson, D.M., Horwood, L.J. and L.J. Woodward. 2001. Unemployment and psychosocial adjustment in young adults: causation or selection? *Social Science and Medicine*, 53(3): 305-320.
- Fourage, D. and R. Muffels. 2009. Working Part-time in the British, German and Dutch Labour Market: Scarring for the Wage Career. *Schmollers Jahrbuch*, 129: 217-226.
- Gangl, M. 2004. Welfare states and the scar effects of unemployment: a comparative analysis for the United States and West Germany. *American Journal of Sociology*, 109: 1319–64.
- Gangl, M. 2006. Scar Effects of Unemployment: An Assessment of Institutional Complementarities. *American Sociological Review*, 71(6): 986-1013.
- Gash, V. and F. McGinnity. 2007. Fixed-term contracts—the new European inequality? Comparing men and women in West Germany and France. *Socio-economic Review* 5(3): 467-496.

- Gayen, K., McQuaid, R. and R. Raeside. 2010. Social Networks, Age Cohorts and Employment. *International Journal of Sociology and Social Policy*, 30(5/6): 219-238.
- Gebel, M. 2010. Early career consequences of temporary employment in Germany and the UK. *Work, Employment and Society*, 24: 641-660.
- Goodman, A., Joyce, R., and J.P. Smith. 2012. The long shadow cast by childhood physical and mental problems on adult life, *Proceedings of the National Academy of Sciences of the United States of America* 108 (15): 6032–6037.
- Green, F. 2009. The Growing Importance of Generic Skills, in Wilson, R. (Ed.) *Beyond Current Horizons: Work and employment*. London: Department for Children, Schools and Families.
- Gregg, P. 2001. The Impact of Youth Unemployment on Adult Unemployment in the NCDS. *The Economic Journal*, 111(475): 626-653.
- Gregg, P., and E. Tominey. 2005. The wage scar from male youth unemployment. *Labour Economics*, 12: 487-509.
- Gregory, M., and R. Jukes. 2001. Unemployment and Subsequent Earnings: Estimating Scarring Among British Men 1984-94. *The Economic Journal*, 111(475): 607-625.
- Granovetter, M. 1982. The strength of weak ties: a network theory revisited, in P.V. Marsden and N. Lin (Eds), *Social structure and network analysis*, pp. 105-130, London: Sage.
- Hammarström, A. and U. Janlert. 2002. Early unemployment can contribute to adult health problems: results from a longitudinal study of school leavers. *Journal of Epidemiology and Community Health*, 56: 624–630.
- Hammarström A., Janlert, U. and T. Theorell. 1988. Youth unemployment and ill health: results from a two year follow up study. *Social Science and Medicine*, 26: 1025-1033.
- Heckman, J.J. and A.B. Krueger 2005. *Inequality in America: What Role for Human Capital Policies?* Cambridge MA: MIT.
- Heckman, J.J., Stixrud, J. and S.S. Urzua. 2006. The Effects of Cognitive and Noncognitive Abilities on Labor Market Outcomes and Social Behavior. *Journal of Labor Economics*, 24(3): 411–482.
- Heineck, G. 2010. Do Your Brains Help You Out of Unemployment? *Economics Letters*, 111(1): 34-36.
- Heineck, G. and S. Anger. 2010. The returns to cognitive abilities and personality traits in Germany. *Labour Economics*, 17(3): 535-546.
- Holzer, H.J. 1988. Search methods used by unemployed youths. *Journal of Labor Economics*, 6(1): 1-20.
- Kahneman, D., Krueger, A.B., Schkade, D., Schwarz, N. and A. Stone. 2004. Toward National Well-Being Accounts, *AEA Papers and Proceedings* May 2004, 94(2): 429-434.
- Kahn, L.B. 2010. The Long-Term Labor Market Consequences of Graduating from College in a Bad Economy. *Labour Economics*, 17: 303-316

- Knabe, A. and S. Rätzel. 2011. Scarring or Scaring? The Psychological Impact of Past Unemployment and Future Unemployment Risk. *Economica*, 78: 283-293
- Knabe, A., Rätzel, S. Schöb, R. and J. Weimann. 2010. Dissatisfied with life but having a good day: time-use and well-being of the unemployed, *The Economic Journal* 120, 867–889.
- Krahn, H.J., Howard, A.L. and N.L. Galambos. 2012. Exploring or Floundering? The Meaning of Employment and Educational Fluctuations in Emerging Adulthood. *Youth & Society*, doi:10.1177/0044118X12459061
- Lange, T. 2013. Scarred from the past or afraid of the future? Unemployment and job satisfaction across European labour markets. *The International Journal of Human Resource Management*, 24(6): 1096-1112
- Layte, R., Levin, H. Hendrickx, J. and I. Bison. 2000. Unemployment and cumulative disadvantage in the labour market, in D. Gallie and S. Paugam. (eds), *Welfare Regimes and the Experience of Unemployment in Europe*, Oxford: Oxford University Press.
- Lindsay, C., Greig, M. and R.W. McQuaid. 2005. Alternative Job Search Strategies in Remote Rural and Peri-Urban Labour Markets: The Role of Social Networks. *Sociologia Ruralis*, 45: 53-70.
- Lockwood, B. 1991. Information externalities in the labour market and the duration of unemployment. *The Review of Economic Studies*, 58(4): 733-753.
- Lucas, R., Clark, A., Geogellis, Y. and E. Diener. 2004. "Unemployment Alters the Set Point for Life Satisfaction." *Psychological Science* 15(1): 8-13.
- Luijkx, R., and M. H. J. Wolbers. 2009. The Effects of Non-Employment in Early Work-Life on Subsequent Employment Chances of Individuals in the Netherlands. *European Sociological Review*, 25(6): 647-660.
- Lupi, C., and P. Ordine. 2002. Unemployment scarring in high unemployment regions. *Economics Bulletin*, 10(2): 1-8.
- MacDonald, R; Shildrick, T; Webster, C; and D. Simpson. 2005. Growing Up in Poor Neighbourhoods: The Significance of Class and Place in the Extended Transitions of 'Socially Excluded' Young Adults. *Sociology*, 39: 873-891.
- McCall, J.J. 1970. Economics of information and job search. *The Quarterly Journal of Economics*, 84(1): 113-26
- McQuaid, R.W. 2006. Job Search Success and Employability in Local Labor Markets. *Annals of Regional Science*, 40: 407-421.
- Mohanty, M.S. 2010. Effects of positive attitude and optimism on wage and employment: A double selection approach. *Journal of Socio-Economics*, 41(3): 304-316.
- Mroz, T.A., and T. H. Savage. 2006. The long-term effects of youth unemployment. *Journal of Human Resources*, 41(2): 259-293.
- Paull, G. 2008. Children and Women's Hours of Work. *The Economic Journal*, 118(5): 8-27.

- Pissarides, C. 1992. Loss of skill during unemployment and the persistence of employment shocks. *The Quarterly Journal of Economics*, 107(4): 1371-1391.
- Perkins, D., and R. Scuttella. 2008. Improving Employment Retention and Advancement of Low-Paid Workers. *Australian Journal of Labour Economics*, 11: 97-114.
- Powdthavee, N. and J. Vernoit. 2013. Parental unemployment and children's happiness: A longitudinal study of young people's well-being in unemployed households. *Labour Economics*, 24: 253-263.
- Raeside, R., Gayen, K. and J. Canduela. 2010. Social Support Mechanisms of the Elderly: Insights from the BHPS. *International Journal of Interdisciplinary Social Science Journal*, 5(8): 163-178.
- Reine, I., Novo, M. and A. Hammarström. 2004. Does the association between ill health and unemployment differ between young people and adults? Results from a 14-year follow-up study with a focus on psychological health and smoking. *Public Health*, 118 (5): 337-345.
- Schmelzer, P. 2011. Unemployment in early career in the UK: A trap or a stepping stone? *Acta Sociologica*, 54(3): 251-265.
- Sen, A. 1993. Capability and Well-being. In M.C. Nussbaum and A.K. Sen, (eds) *The Quality of Life*, Oxford: Clarendon Press.
- Stewart, M.B. 2007. The interrelated dynamics of unemployment and low-wage employment. *Journal of Applied Econometrics*, 22(3): 511-531.
- Stiglitz, J.E., Sen, A. and J-P. Fitoussi. 2009. Report by the Commission on the Measurement of Economic Performance and Social Progress, Paris [www.stiglitz-sen-fitoussi.fr/documents/rapport\\_anglais.pdf](http://www.stiglitz-sen-fitoussi.fr/documents/rapport_anglais.pdf) [Accessed 21 March 2014]
- Strandh, M., and M. Nordlund. 2008. Active Labour Market Policy and Unemployment Scarring: A Ten-year Swedish Panel Study. *Journal of Social Policy*, 37(3): 357-382.
- University of Essex. 2010. Institute for Social and Economic Research, *British Household Panel Survey, Waves 1-18, 1991-2009: Conditional Access, Primary Care Trusts* [computer file]. 3rd Edition. Colchester, Essex: UK Data Archive [distributor], July 2010. SN: 6030, <http://dx.doi.org/10.5255/UKDA-SN-6030-1>
- Wanberg, C.R. 2012. The individual experience of unemployment. *Annual Review of Psychology*, 63(1): 369–396
- Winkelmann, L. and R. Winkelmann. 1998. Why Are the Unemployed So Unhappy? Evidence from Panel Data. *Economica*, 65: 1-15.
- Valente, T. W. 2010. *Social Networks and Health; Models, Methods, and Applications*, Oxford: Oxford University Press.
- van Hoofta, E.A.J., Bornb, M., Tarisc, T.W., van der Fliera, H., and R.W.B. Blonk. 2005. Bridging the gap between intentions and behavior: Implementation intentions, action control, and procrastination. *Journal of Vocational Behavior*, 66(2): 238–256.

Young, C. 2012. Losing a Job: The Nonpecuniary Cost of Unemployment in the United States. *Social Forces*, 91(2): 609-634.