



## **Wage Scarring – The problem of a bad start**

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As the economic downturn continues in Europe, unemployment has risen in many countries. Among these, the UK has an unemployment rate which now stands at 8% or 2.56 million people. Of these people the unemployment rate amongst 16 to 24 year olds is particularly high at 20.7% (just over 1 million people); this is especially problematic as research shows that if one gets off to a bad start when moving from school or university into work, future job prospects and general well-being may well be compromised. Researchers such as Bell and Blanchflower (2011), Dieckhoff (2011) and Gregg and Tominey (2005) found that periods of unemployment when young may blight the future of young people in terms of their future labour market outcomes, such as the likelihood of further unemployment, lower pay, lower job quality and reduced wellbeing -- this they termed the “scarring effect”.

As part of a European 7<sup>th</sup> Framework funded project called “WorkAble”, the Employment Research Institute was commissioned to undertake research using the British Household Panel (BHPS) survey to assess the empirical evidence for wage scarring (see Raeside et al 2012). We followed a cohort of young adults aged between 18 and 24 in 1998 over a ten year period to 2008 when they were aged 28 to 34 years (Waves H to R of the BHPS). Of those aged 18 to 24, after excluding those still in full time education, we defined two groups, one representing those who were out of work for at least one month on 1998 and those who were not unemployed in 1998. Plotting the mean and 95% confidence interval logarithm of the current monthly shows that initially there is little difference between the mean monthly pays of the two groups but, after four years, the effect of being “scarred” might begin to show (see Figure 1).

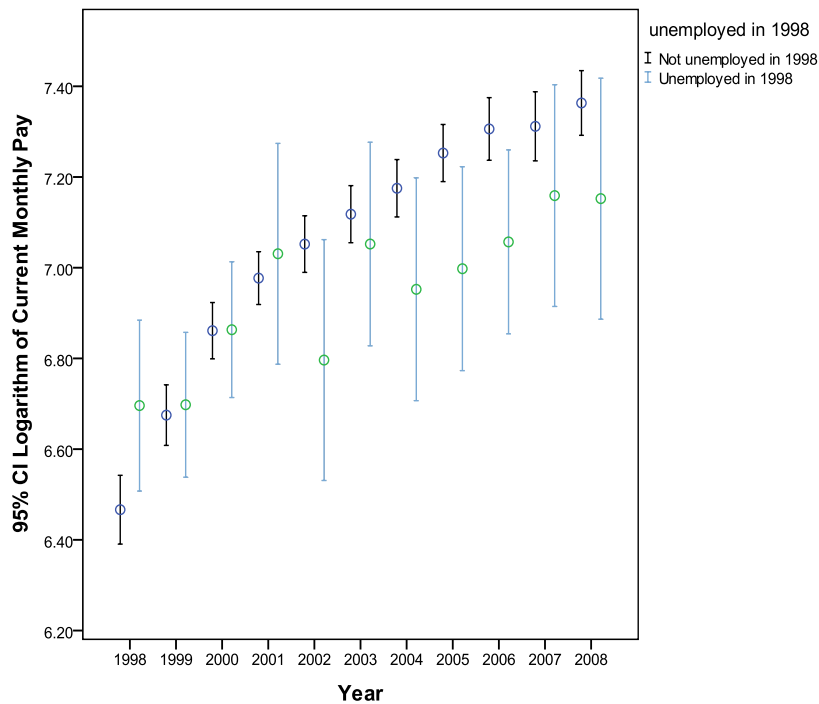


Figure 1

To explore this further, cross sectional regression models of the form  $\ln Pay = f(D, H, S, E, B) + \varepsilon$  were constructed where  $\ln Pay$  is logarithm of last monthly's pay;  $D$  represents the demographic variables (gender, age and marital status, number of children under 12, number in household);  $H$  is human capital (highest academic qualifications and confidence, financial capability),  $S$  is social capital (measured by frequency of talking to neighbours and of meeting people);  $E$  is employment status (employed, unemployed or other);  $B$  is their history of entry to labour market (where they unemployed 5 or 10 years previously in 2003 and 2008 respectively); and  $\varepsilon$  is the error due to unobserved variables and measurement errors. Models of pay were constructed and compared for the years 1998, 2003 and 2008. When controlling for the various socio-economic variables in the 2003 and 2008 models, the number of weeks unemployed in 1998 emerged as statistically significant at the 1% level.

In order to further verify the effect of a person's initial start in working life, a random effects panel model was fitted to explain variations in the logarithm of monthly pay using their initial entry condition in to the labour market (identified above as being unemployed) (see Arellano, 2003; Baum, 2006). A panel model uses data formed into blocks or panels for each year and has the advantage of controlling for unobserved heterogeneity that is specific to the individual and does not vary over time. The Panel model was:

$$\ln Pay_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$$

where  $u_{it}$  is the between-year effect (heterogeneity) and  $\varepsilon_{it}$  is the error term. The panel model was fitted using STATA 12.0 and is displayed in Table 1 as follows:

Variables	Coefficient	Std. Err.
Female	-0.373***	0.016
Age at date of interview	0.007***	0.001
Single	-0.145***	0.023
Children in household	-0.030**	0.012
Part time worker	-0.887***	0.014
Qualification (baseline degree+)		
<i>HND, HNC, Teaching</i>	-0.184***	0.030
<i>A level</i>	-0.411***	0.021
<i>O Level, CSE</i>	-0.513***	0.020
<i>None</i>	-0.746***	0.027
Rent house	-0.136***	0.016
Frequency of talking to neighbours	0.027***	0.006
Frequency of meeting people	0.025***	0.007
Weeks unemployed last year	-0.001	0.001
Weeks unemployed in 1998	-0.005***	0.001
Wave	0.195***	0.006
Constant	7.234***	0.038
sigma_u	0.378	
sigma_e	0.337	
rho	0.557	
R <sup>2</sup> within	49.40%	
R <sup>2</sup> between	62.10%	
R <sup>2</sup> overall	59.40%	

Table 1: Random effects panel model of the logarithm of monthly pay

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

Almost all the variables are significant (at the 1% level) and in the direction expected -- being female and having less than a degree, being single, having children in the household, renting and being a part time worker are all significantly associated with lower pay as the cohort ages. Age is positively associated with pay. From the social networking variables, the more one interacts the higher one's pay tends to be.

The panel approach confirms the effect of a person's unemployment experience approximately at the time when they enter the labour market (weeks unemployed in 1998), with the model giving evidence of scarring at the 1% level. The results indicate a fairly significant effect of scarring as the logarithm of monthly pay falls by -0.005 for every week unemployed in 1998. So the elasticity of pay represents a loss of around £70 per month in 2008 for each week unemployed in 1998.

## **Conclusions**

We found strong evidence to support the notion of scarring in that, if one suffers a prolonged spell of unemployment during his/her transition from school/university in to working life, it is likely that his/her pay levels will lag behind those who had a smoother transition in to working life. We found similar scarring effect for the likelihood of currently being unemployed similar and, to a lesser extent, scarring was associated with poorer well-being as reflected by respondents' answers to satisfaction with life questions.

We confirm that the effect of scarring as a consequence of a poor start in the labour market is important as it affects a person's labour-market outcome throughout their life, as well as affecting their wider social networks and the economy more general. Thus, policy makers should continue to ensure that transition from education to work is as functional as possible by primarily ensuring that high human capital is developed and maintained for young people and that employers are encouraged to recruit younger people.

## **Acknowledgements**

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