

**Career Progression: Getting-On, Getting-By and Going  
Nowhere.**

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## **Abstract**

This research examines factors that help or hinder the ‘career progress’ of individuals in NCDS through the labour market. We employ different measures of an individual’s status based on earnings. To a large extent this paper is an empirical implementation of the Sicherman and Galor model of Career Mobility (Journal of Political Economy 1990) in that this paper attempts to chart exactly how people differ in their potential to make progress in their careers.

Our results suggested there was a high degree of concordance in the factors which influence individual wage progression and occupational wage progression. Specifically higher levels of ability, schooling, age 16 educational achievement, NVQs, job attachment and job tenure all influence the career progress an individual will make.

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## 1. Introduction

This research focuses on the progress of individuals through the labour market and the extent to which this progression is helped or hindered by their family, education and labour market experience. It studies individual career histories and the role that schooling, formal qualifications, and work experience play in the labour market transitions that people make. Our shorthand phrase for this is ‘career progression’. This paper develops the work of Sicherman and Galor on career mobility in the US and, more directly, to the work of Connelly, Nickell and Micklewright and Harper and Haq in the UK.

After surveying the available literature on the concept of career progress we suggest some alternative definitions of ‘career progression’. We then proceed to establish the pattern of career progression for men and women in the NCDS data over their lifecourse from age 23 to 42. We allow for the role of human capital in terms of educational qualifications and skills acquired at school, since leaving school, new work experience, and parenthood. We only consider men in this paper to avoid problems with career interruptions for women.

Section 4 in the paper outlines the various econometric modelling alternatives to capture the different concepts of career progression. We then descriptively explore these concepts by using the NCDS data at three points in time -at ages 23, 33 and 42. Finally we report the econometric estimation results for our different definitions of career progression in section 5.

Our results suggest there is a high degree of concordance in the factors which influence individual wage progression and occupational wage progression. Specifically higher levels of ability, schooling, age 16 educational achievement, NVQs, and job tenure all influence the career progress an individual will make.

## 2. The Concept of ‘Career Progression’.

Blau and Duncan (1967) define occupational success as:

*‘the outcome of the lifelong process in which ascribed status at birth, intervening circumstances and earlier attainments determine the level of ultimate achievement’<sup>4</sup>.*

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<sup>4</sup> Blau and Duncan (1967), p. 20.

Note crucially they do not say what they mean by ‘ultimate achievement’ – in some circles this could be taken to mean earnings, in others it could mean a different form of occupational attainment which may involve non-pecuniary characteristics. It is also possible that ‘ultimate achievement’ could be taken to mean the level of skills or experience required to do the job. After all, many people make life choices which do not necessarily involve the maximization of their earnings potential. Hence we need to be more eclectic in our notion of lifetime achievement. For this reason we do not use the term ‘occupational success’ but introduce a broader concept of ‘career progression’. By which we mean the outcomes relative to other people at the same stage of the lifecourse. In this paper we used longitudinal data to examine the determinants of these differences and investigate the role of the genetic and ability factors, education and work experience in the labour market.

Central to any measurement of inequality – either over time or across generations - is some concept of the value, grade or worth, of a person’s position at period  $t$ , of where they came from at period  $t-1$ , and where they go to in period  $t+1$ . Such a concept is needed to evaluate the differences observed between groups such as men and women or different ethnic groups. Studies which examine the progress a person makes during their lifetime in terms of where they came from, what they achieve in their schooling and how this impacts on their life chances, are relatively new as only recently have we had good longitudinal microdata to enable us to study the same individuals over a long period of time, with the detailed data becoming available in the British Cohort data. (See Ferri et al, 2003).

In the literature the idea of trying to measure who ‘gets on’ in the labour market has been variously treated. The economics literature in recent years has focussed on earnings growth – see Nickell (1982) and others. The interests of economists were not always so narrowly focussed, e.g. Thurow (1969, 1975) in his books emphasised the idea of measuring a person’s progress according to where they were in the distribution of various outcomes at different stages in their lives.

Wider concepts of ‘getting on’ have variously been introduced by sociologists. They talk primarily of ‘occupational mobility’, Blau and Duncan (1967), Nicholson and West (1988), ‘career lines’, Spenner, Otto and Call (1982) and ‘career trajectories’ and ‘pathways’, Kerckhoff (1993). Slocum (1974) uses the term ‘career’ to refer to an individual’s job history and the terms ‘career line’ and ‘job trajectory’ to

refer to common patterns in the labour force. Sommers and Eck (1977) use the term ‘career ladder’ to mean ‘a series of occupations forming a path of advancement, usually through gaining skills and experience, to a higher status of occupation’<sup>5</sup>. Sociologists have also variously tried to measure occupational status, Goldthorpe and Hope (1974), – which is essentially an alternative way of considering the social worth or ranking of a given career.

The small literature of occupational attainment using NCDS, Connolly et al (1992) and Harper and Haq (1997), has used the mean gross hourly earnings in a standard occupational classification as a measure of occupational attainment<sup>6</sup>. An important question not addressed in these papers is – why focus on occupational earnings rather than actual earnings? There are certain advantages of doing so: first, this will net out for unobserved heterogeneity in wages based on employment conditions which are specific to the individual - like particular hours of work, benefits in kind or additional payments, second it overcomes any measurement or reporting error than may be involved in the use of the reported actual earnings, third it overcomes any missing values due to non-reporting, fourthly the use of mean occupational earnings may be a better proxy for lifetime earnings in a given occupation than actual individual earnings and can be used for those not currently employed. As a result this may be closed to reflecting the theoretical life cycle human capital models that underpin this type of analysis. Finally the use of exogenously determined earnings may have certain advantages in attempting to overcome endogeneity issues<sup>7</sup>. The papers by Connolly et al (1992) and Harper and Haq (1997) use the same data as us – the NCDS – to examine occupational success measured as occupational earnings at age 23 and 33 respectively. This paper adds to these findings: firstly by using the latest data on this cohort collected in 2000 and secondly by considering a much wider notion of success in our examination of career progression.

In some respects our work is closer to that of Kerckhoff (1993) who also uses the NCDS data to consider the ‘pathways’ which have been followed by the cohort

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<sup>5</sup> Sommers and Eck (1977), p. 5.

<sup>6</sup> These authors get their predicted earnings from the New Earnings Survey (NES) for the relevant years. Our comparator dataset is the NES as well.

<sup>7</sup> The usual context in which IVs are used is to replace an endogenous regressor variable in the equation of interest. However, to solve the problem of endogeneity, there is no reason why the variable which is instrumented cannot be the regressand rather than the regressor. In this context using occupational earnings rather than individual earnings will potentially solve the problem of individual specific earnings being endogenous to their own education level.

members. The author examines the sorting process by which people realise their achievements and shows how the process of advantage and disadvantage are pervasive. He only uses the responses up to the age of 23 but he does consider a wider concept of outcomes than simply wages, as he examines educational and other outcomes.

A further strand to the literature relevant to whether individuals progress in the labour market is the literature on overeducation. This idea is that there are some individuals employed in jobs which are beneath them in terms of the educational qualifications necessary to do the job. This mismatch can come about for many reasons but if there is simply an over-supply of qualified people then there will always be some individuals who cannot get a job commensurate with their qualifications. These ideas were first introduced by Berg (1970) and Freeman (1979) and then examined by Duncan and Hoffman (1981). They have since been the subject of a large number of papers. (See Sloane (2002) for a recent literature review.) Much of this literature has focussed on self reported overeducation in terms of whether people say they are doing a job which does not require them to have a qualification they have obtained. Some of the literature has alternatively used the person's occupation and sought to examine if their educational level is the same (above or below) that typically required or observed in the job. We use this idea in one of our career progression measures by seeking to establish if a person has been able to move from a job for which they were over qualified, into one which matches their educational qualifications.

A related strand to the literature is that which examines changes in wage discrimination by gender (or race) over time looking at different cohorts. Dolton, O'Neill and Sweetman (1996) and Joshi and Paci (1998), Makepeace et al (1999), Dolton et al (2002) consider how gender discrimination may have moved over time for graduates and the UK Birth cohorts respectively. However it is a somewhat different question to assess how – for the same individuals – they may have experienced different discrimination at different points in their own life cycle. There is therefore a need for new research which elaborates on the narrowly defined measure of gender discrimination. Typically the literature of gender wage differences has looked only at differences between individuals as measured at a specific point in

time. We are interested in assessing differences between men and women in their labour market ‘career progression’ over time for the same cohort<sup>8</sup>.

Sicherman and Galor (1990) study occupational mobility through career changes as we propose to do. They assume that individuals wish to choose the level of schooling and a feasible career path so as to maximize the present value of their expected lifetime earnings. They consider that upward career mobility is realised by promotion to a higher level occupation either within the firm or via moving to another firm. In practice they measure this via the vertical ranking of occupations where occupations are ranked according to the human capital necessary to perform them. Their empirical strategy is to estimate a multinomial logit model of career mobility according to whether a person gains promotion or moves to another firm. They find that part of the returns to education is in the form of higher probabilities of occupational upgrading. Our study draws on theirs to the extent that we make reference to an external data set relating to occupations and consider the issues of the determinants of making career progression.

### 3. Definitions of Career Progress.

Assume we observe a set of individuals  $i \in I$  over time periods  $t=1,2\dots 5$ . Assume that the innate ability of person  $i$  is fixed and immutable,  $A_i$ . Assume that their educational schooling achievement can be summarised by  $Q_{it}$ . Let their actual log weekly wages at any time be  $W_{it}$  and let their (individual specific) typical wage in their occupation  $k$  be:  $\bar{W}_{it}^k$ . Whilst in work assume that the ‘typical’ (median or mean) level of educational achievement by people in their occupation  $k$  is denoted by  $\bar{N}_{it}^k$ . Denote by  $\rho(\cdot)$  the percentile of any given variable.

Then our concepts of career progression can be written as:

**a. Individual Wage Progression.** This measures the individual wage enhancement a person gets between two dates.

$$(W_{it} - W_{it-1}) \quad (1)$$

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<sup>8</sup> Although, as above mentioned, we will focus on a sample of men in this paper.

**b. Occupational Wage Progression.** This measures the wage enhancement a person in occupation  $k$  would typically get between two dates. This is measured in terms of either the mean or median earnings in a given occupation.

$$(\bar{W}_{it}^k - \bar{W}_{it-1}^k) \quad (2)$$

**c. Occupational Educational Level Progression.** This measures the enhancement a person of occupation  $k$  would typically experience in terms of the education level which is most commonly observed by people in their job between two dates.

$$(\bar{N}_{it}^k - \bar{N}_{it-1}^k) \quad (3)$$

**d. Intra-Cohort Progression.** This measures the change in a person's position in their own cohort's distribution on any two attributes. Their movement in the cohort can be considered from early achievement to wages, from school achievement to wages or individual specific wages measured at any two points in time. These movements may be up to  $m$  time periods apart.

$$\rho(W_{it}) - \rho(A_{it-m}) \quad (4.1)$$

$$\rho(W_{it}) - \rho(Q_{it-m}) \quad (4.2)$$

$$\rho(W_{it}) - \rho(W_{it-1}) \quad (4.3)$$

We will explore the first two concepts in this paper. The remaining ideas are considered elsewhere.

## 4. The Econometric Models.

We briefly consider some of the models that are relevant to our estimation problem.

### 4.1. Fixed Effects and Value Added Models.

Firstly, why estimate models in terms of differences? Second, what are the consequences of estimating models in which the dependent variable has been instrumented? Third, how do we make sense of the marginal effects in a model in which the differences are in discrete levels? And finally how do we interpret models in which the dependent variable is in terms of differences in percentiles. We begin to address these models by first setting out the most basic case and then we elaborate accordingly to consider the more complex issues.

Consider that any outcome of interest in period 0 is determined by:

$$Y_{i0} = \alpha_0 + \beta_0 X_{i0} + \gamma_0 Z_i + u_{i0} + v_i \quad (5)$$

and that any outcome of interest in period 1 is determined by:

$$Y_{i1} = \alpha_1 + \beta_1 X_{i1} + \gamma_1 Z_i + u_{i1} + v_i \quad (6)$$

where  $X$  are time dependent co-variates,  $Z$  are non time dependent covariates,  $u$  is a stochastic error term varying across time and individuals and  $v_i$  represents unobserved heterogeneity. There are some factors  $Z$  which themselves do not change value for an individual over time but may have a differential impact on the outcome of interest which itself does change over time. For example gender and achievement at school will not change over time but the effect of these variables may be different on outcomes of the individual at different ages. In contrast we have regressors which themselves vary over time like work experience. However in this case we may want to assume that the effect of the work experience acquired by a specific date does not have a differential impact on the outcome at different dates.

The difference in earnings can be written as:

$$(Y_{i1} - Y_{i0}) = (\alpha_1 - \alpha_0) + (\beta_1 X_{i1} - \beta_0 X_{i0}) + (\gamma_1 - \gamma_0) Z_i + (u_{i1} - u_{i0}) \quad (7)$$

or alternatively as:

$$(Y_{i1} - Y_{i0}) = (\alpha_1 - \alpha_0) + \beta_1 (X_{i1} - X_{i0}) - (\beta_0 - \beta_1) X_{i0} + (\gamma_1 - \gamma_0) Z_i + (u_{i1} - u_{i0}) \quad (8)$$

This gives rise to two models of interest:

***Fixed Effects, ‘Differences’ Model***

$$(Y_{i1} - Y_{i0}) = \theta_1 + \theta_2 (X_{i1} - X_{i0}) + \theta_3 Z_i + \varepsilon_i \quad (9)$$

in which we assume that  $\theta_1 = \alpha_1 - \alpha_0$ ,  $\theta_2 = \beta_1 - \beta_0$ ,  $\theta_3 = \gamma_1 - \gamma_0$  and  $\varepsilon_i = (u_{i1} - u_{i0})$ .

This specification ‘nets out’ unobserved individual specific heterogeneity. This is a significant advantage of this kind of model as we may be fairly confident that we have

extracted a fair proportion of unobservable effects like determination, intelligence, motivation which remain constant across time for an individual but affect a person's progress.

***Value Added, 'Levels and Differences' model:***

Premultiply equation (5) by

$$\lambda Y_{i0} = \lambda[\alpha_0 + \beta_0 X_{i0} + \gamma_0 Z_i + u_{i0} + v_i]$$

Subtracting this from equation (6) gives:

$$(Y_{i1} - \lambda Y_{i0}) = (\alpha_1 - \lambda \alpha_0) + \beta_2 (X_{i1} - X_{i0}) + (\beta_1 - \lambda \beta_0) X_{i0} + (\gamma_1 - \lambda \gamma_0) Z_i + (u_{i1} - \lambda u_{i0}) + (v_i - \lambda v_i)$$

Alternatively we can rewrite this as:

$$Y_{i1} = \lambda Y_{i0} + \delta_1 + \delta_2 (X_{i1} - X_{i0}) + \delta_3 X_{i0} + \delta_4 Z_i + \varepsilon_i$$

in which we assume that  $\delta_1 = (\alpha_1 - \lambda \alpha_0)$ ,  $\delta_2 = \beta_2$ ,  $\delta_3 = (\beta_1 - \lambda \beta_0)$ ,  $\delta_4 = (\gamma_1 - \lambda \gamma_0)$ ,  $\varepsilon_i = (u_{i1} - \lambda u_{i0}) + (v_i - \lambda v_i)$  and  $\delta_4 = (\gamma_1 - \lambda \gamma_0)$ . Hence we are assuming we can disaggregate the effect on outcomes of that part of the X variable which has not changed over time from the effect which does change over time. The example to consider in our data would be the effect of work experience. In this model we would consider this as two effects: the effect of work experience up to age 33 and the separate effect of the difference in work experience between age 42 and 33.

**5. The Empirical Results.**

Our main concern is to examine what factors affect career progression during an individual's working life, in this case for British men between the ages of 23 and 42. Our initial estimates focus on the role of traditional human capital variables. Later we will extend our analysis to include possible role of childhood factors such as those considered by Connolly *et al* (1992) and Harper and Haq (1997). Our preferred results are shown in Table 1 for hourly earnings. Table 2 contains similar estimates based on weekly earnings.

The estimates are based on a balanced sample of men for 1981, 1991 and 2000. The sample comprises the 845 men who have a full set of data in each year. The first two columns use the actual observed hourly earnings to form the dependent

variable while the last two use the typical earnings in an occupation. We consider two specifications for education; years of schooling represent education in the first and the qualifications obtained in the second. Table 1a reports the OLS estimates for the pooled sample; Table 1b the fixed effects estimates; and Table 1c the random effects estimates<sup>9</sup>.

The use of OLS or random effects makes little difference to the size or significance of the estimates for years of schooling, work experience, work experience squared and tenure. Each extra year of schooling adds 5-6% to hourly earnings. Tenure has small but robust effect on earnings with each extra year adding 0.3% to hourly earnings. Rather interesting, the estimates do not change very much when the dependent variable is the log of weekly earnings. This results contrast with the estimates for the separate cross-sectional samples for 1981, 1991 and 2000 given in the Appendix. The cross-sectional results are not stable over time and schooling, work experience and tenure are only all simultaneously significant in the 1991 sample.

Part of the contrast between the results for the whole sample and the individual cross-sections is due to the nature of the data. All the individuals were born at the same time and large numbers of them have broadly similar work histories at each survey date. There may be insufficient variation in variables such as tenure to robustly define its effects. We are only able to identify the effects of the human capital variables when the full panel is studied. The problem is further compounded by the nature of the 1981 data. At the one extreme, these data contain individuals with few qualifications who left school at 16 and have worked more or less continuously and have relatively high earnings. At the other extreme, there are individuals who have very high levels of qualifications but have only recently entered the labour market and have relatively low earnings in the light of their likely future careers.

We might expect the results to change when we consider the fixed effects estimates. However the estimates are of a similar order of magnitude for schooling, tenure and work experience squared and actually larger for work experience. This method does not suggest that endogeneity is a particular problem with these variables. Nonetheless, the t-values are much lower for schooling and tenure although the

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<sup>9</sup> Definitions of the variables are given in the Appendix, alongside with the mean and standard deviations for each variable.

schooling estimate may reflect the limited amount of full-time education undertaken after the age of 23.

We consider one less commonly used experience variable: number of years unemployed. This variable could reflect the depreciation of human capital that takes place when it is not used or, more pragmatically, the fact that earnings for entrants tend to be lower than for others. Unemployment has a large negative impact on earnings in the OLS and random effects models where an extra year unemployed lowers earnings by about 7%. The fixed effects estimates are even larger.

The level of qualifications is important in the OLS and random effects models where there are substantial premiums for possessing the highest NVQ levels. Cross-section OLS estimates of the earnings equations (in the Appendix) reveal an interesting pattern. The level of qualifications is not important in 1981. Most NVQ levels improve earnings in 1991 while only degree-equivalent qualifications are important in 2000. This suggests that NVQ levels have some role to play over time. By contrast, there is no significant role for qualifications in the fixed effects estimates. Since these estimates depend on changes in the levels of qualifications, they suggest that changes in qualifications after the age of 23 have little role to play.

As reported in tables 1a and 1c age 16 educational achievement plays an important role in determining the success either in terms of individual wage progression or occupational wage progression<sup>10</sup> (although the relationship is weaker in the latter case). Likewise, the principal component variable comprising math and reading test results, which is used as a proxy for ability, states a positive and highly significant coefficient, as expected.

The other variables included in the model (marital status, race, disability, union membership, etc.) do not exhibit a significant relationship with the wage pattern in the period accounted for, but in the case of individual occupations there are some differences among the occupational categories considered.

The lack of significance for NVQ level in the fixed effect estimates suggests that the change in earnings was not affected by NVQ level. This seems counter-intuitive although the lack of change in NVQ levels may account for this in practice. We have investigated an alternative hypothesis that NVQ's affect the growth on earnings by interacting the time dummies for 1991 and 2000 with each qualification

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<sup>10</sup> Age 16 educational attainment and principal component variable are not included in the fixed effects model because they are individual specific time invariant covariates.

level in 1981. The estimates of these terms will show the change from 1981 to the period in question in the return to each qualification measured relative to the earnings of someone with no qualifications. That is it shows the change in the premium associated with each qualification level in 1981 comparing 1991 with 1981 and 2000 with 1981. These results are shown in Table 3. The estimates establish the importance of NVQs for relative earnings over time. The earnings advantage that individuals with NVQ levels 4 and 5 enjoy over those with no NVQs had increased by about 40% by 2000. The estimates suggest that the earnings of those individuals with NVQ levels higher than level 1 increased their earnings relative to the others over time. Of course, the increasing inequality earnings from 1981 to 2000 and its association with qualifications has been documented elsewhere but these are the first estimates using UK panel data.

We are currently experimenting with panel estimation of the value-added model. This model includes a lagged value of the dependent variable so we are using Arellano-Bond estimators. This has necessitated the retrieval of wage for periods prior to 1981 in order to produce suitable instruments. Our preliminary estimates suggest that this method produces similar results to fixed effects.

## **6. Conclusions.**

To summarise our results it could be asserted that there is a high degree of concordance in the factors which influence individual wage progression and occupational wage progression. To be precise higher levels of ability, schooling, age 16 educational achievement, NVQs, job attachment and job tenure all influence the career progression an individual will make.

Additionally, further research remains to be conducted in order to shed light on the factors affecting the “career progress” pattern in a panel estimation framework.

Table 1a: OLS; Pooled sample (hourly wages)

	(1)	(2)	(3)	(4)
	Ln Actual hourly wages	Ln Actual hourly wages	Ln Typical hourly wages	Ln Typical hourly wages
year==1991	0.220 (3.09)***	0.464 (9.00)***	0.324 (5.51)***	0.359 (8.47)***
year==2000	0.358 (2.92)***	0.817 (9.91)***	0.576 (5.71)***	0.649 (9.63)***
Years of schooling	0.053 (5.80)***		0.010 (1.28)	
Years of experience	0.091 (8.91)***	0.065 (7.47)***	0.046 (5.46)***	0.042 (5.97)***
Years of experience squared	-0.002 (9.33)***	-0.002 (9.20)***	-0.001 (7.30)***	-0.002 (7.46)***
Years of tenure	0.003 (2.19)**	0.004 (2.61)***	0.002 (2.04)**	0.002 (2.27)**
Principal component reading plus math test	0.024 (2.92)***	0.025 (3.01)***	0.021 (3.14)***	0.018 (2.67)***
Total score on o-level or equ. by 16	0.003 (4.03)***	0.003 (4.10)***	0.001 (2.01)**	0.001 (1.42)
Married	-0.002 (0.11)	-0.006 (0.28)	-0.004 (0.22)	-0.005 (0.30)
Parent	0.054 (2.56)**	0.050 (2.37)**	0.030 (1.71)*	0.030 (1.72)*
Race: non white	0.134 (1.45)	0.122 (1.30)	-0.022 (0.29)	-0.031 (0.42)
Disabled	-0.054 (1.45)	-0.057 (1.51)	-0.027 (0.88)	-0.025 (0.81)
Union membership	-0.018 (1.03)	-0.020 (1.11)	0.005 (0.34)	0.003 (0.24)
Years unemployed since 1974	-0.072 (4.75)***	-0.092 (6.32)***	-0.015 (1.21)	-0.015 (1.25)
<b>Occupations:</b>				
Professional	0.174 (4.75)***	0.162 (4.31)***	0.458 (14.94)***	0.449 (14.30)***
Associate professional and tech.	0.164 (4.98)***	0.152 (4.54)***	0.370 (13.47)***	0.362 (13.01)***
Managers & administrators	0.261 (9.24)***	0.251 (8.75)***	0.507 (21.08)***	0.501 (20.62)***
Craft and related	0.031 (1.10)	0.021 (0.73)	0.195 (8.11)***	0.190 (7.86)***
Personal and protective services	0.135 (3.37)***	0.140 (3.46)***	0.267 (7.92)***	0.267 (7.92)***
Plant and machine operatives	-0.023 (0.71)	-0.015 (0.45)	0.050 (1.85)*	0.054 (2.01)**
Other occupations	-0.030 (0.69)	-0.022 (0.50)	0.043 (1.23)	0.060 (1.69)*
<b>Industry:</b>				
Farming	-0.162 (2.04)**	-0.167 (2.09)**	-0.068 (1.05)	-0.066 (1.02)
Mining	0.228 (4.26)***	0.228 (4.24)***	0.136 (3.07)***	0.140 (3.17)***
Electricity, gas and water supply	0.073 (1.40)	0.064 (1.23)	0.160 (3.71)***	0.154 (3.59)***
Construction	0.054 (1.28)	0.043 (1.01)	0.036 (1.04)	0.036 (1.04)
Sales	0.197	0.194	0.023	0.018

	(5.08)***	(5.00)***	(0.73)	(0.55)
<b>Hotels and restaurants</b>	0.015	0.007	-0.244	-0.261
	(0.14)	(0.07)	(2.88)***	(3.09)***
<b>Transport</b>	0.096	0.080	0.053	0.044
	(2.91)***	(2.41)**	(1.94)*	(1.62)
<b>Finances</b>	0.236	0.229	0.191	0.189
	(6.13)***	(5.92)***	(5.92)***	(5.88)***
<b>Real state</b>	0.123	0.129	0.092	0.093
	(3.42)***	(3.56)***	(3.09)***	(3.14)***
<b>Public administration and defence</b>	0.031	0.027	0.088	0.084
	(0.88)	(0.78)	(3.01)***	(2.87)***
<b>Manufacturing</b>	0.121	0.116	0.078	0.074
	(4.49)***	(4.27)***	(3.48)***	(3.29)***
<b>Health</b>	0.032	0.027	-0.049	-0.053
	(0.65)	(0.55)	(1.21)	(1.31)
<b>Other community, social and per. acts.</b>	0.006	-0.005	0.012	0.005
	(0.09)	(0.08)	(0.24)	(0.10)
<b>Other industry</b>	-0.180	-0.190	-0.006	-0.004
	(0.65)	(0.69)	(0.02)	(0.01)
<b>Region:</b>				
<b>South East &amp; London</b>	0.127	0.149	-0.047	-0.040
	(4.36)***	(5.10)***	(1.95)*	(1.68)*
<b>North West</b>	-0.025	-0.006	0.039	0.047
	(0.72)	(0.18)	(1.36)	(1.66)*
<b>Yorkshire &amp; Humberside</b>	-0.014	-0.012	0.021	0.021
	(0.40)	(0.35)	(0.74)	(0.74)
<b>West Midlands</b>	0.101	0.120	-0.001	0.008
	(1.77)*	(2.10)**	(0.01)	(0.17)
<b>East Midlands</b>	-0.026	-0.010	-0.035	-0.026
	(0.76)	(0.30)	(1.23)	(0.93)
<b>East Anglia</b>	0.082	0.091	-0.040	-0.038
	(1.98)**	(2.17)**	(1.15)	(1.11)
<b>South West</b>	0.072	0.085	-0.062	-0.058
	(1.77)*	(2.05)**	(1.81)*	(1.69)*
<b>Scotland</b>	0.076	0.113	0.133	0.142
	(0.63)	(0.93)	(1.29)	(1.38)
<b>Wales</b>	0.119	0.175	0.035	0.069
	(1.19)	(1.74)*	(0.43)	(0.85)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.147		0.137
		(3.70)***		(4.21)***
<b>Level 3 is highest NVQ</b>		0.080		0.104
		(2.12)**		(3.41)***
<b>Level 2 is highest NVQ</b>		0.045		0.113
		(1.26)		(3.90)***
<b>Level 1 is highest NVQ</b>		0.040		0.102
		(1.08)		(3.37)***
<b>Constant</b>	0.287	0.957	1.094	1.127
	(2.00)**	(14.24)***	(9.27)***	(20.29)***
<b>Observations</b>	2504	2504	2430	2430
<b>R-squared</b>	0.57	0.57	0.61	0.61

**Table 1b: Fixed effects (hourly wages)**

	(1)	(2)	(3)	(4)
	Ln Actual hourly wages	Ln Actual hourly wages	Ln Typical hourly wages	Ln Typical hourly wages
<b>year==1991</b>	0.117 (1.06)	0.153 (1.41)	0.254 (2.75)***	0.274 (3.02)***
<b>year==2000</b>	0.143 (0.72)	0.227 (1.17)	0.455 (2.73)***	0.499 (3.09)***
<b>Years of schooling</b>	0.062 (1.79)*		0.034 (1.20)	
<b>Years of experience</b>	0.106 (7.65)***	0.105 (7.53)***	0.055 (4.74)***	0.054 (4.65)***
<b>Years of experience squared</b>	-0.002 (9.04)***	-0.002 (9.75)***	-0.002 (7.13)***	-0.002 (7.60)***
<b>Years of tenure</b>	0.003 (1.67)*	0.003 (1.60)	-0.001 (0.45)	-0.001 (0.49)
<b>Married</b>	-0.048 (1.82)*	-0.044 (1.67)*	0.014 (0.63)	0.016 (0.73)
<b>Has children</b>	0.079 (3.02)***	0.076 (2.89)***	0.035 (1.61)	0.034 (1.55)
<b>Disabled</b>	-0.062 (1.28)	-0.061 (1.26)	-0.009 (0.23)	-0.010 (0.25)
<b>Union membership</b>	-0.026 (1.02)	-0.024 (0.94)	-0.024 (1.09)	-0.023 (1.04)
<b>Years unemployed since 1974</b>	-0.098 (3.39)***	-0.100 (3.48)***	-0.059 (2.49)**	-0.059 (2.50)**
<b>Occupations:</b>				
<b>Professional</b>	0.088 (1.83)*	0.081 (1.67)*	0.449 (10.91)***	0.440 (10.57)***
<b>Associate professional and tech.</b>	0.084 (1.97)**	0.077 (1.80)*	0.377 (10.44)***	0.370 (10.17)***
<b>Managers &amp; administrators</b>	0.247 (7.12)***	0.242 (6.91)***	0.606 (20.32)***	0.599 (19.88)***
<b>Craft and related</b>	0.110 (2.71)***	0.105 (2.59)***	0.249 (7.10)***	0.244 (6.95)***
<b>Personal and protective services</b>	0.145 (2.55)**	0.140 (2.44)**	0.314 (6.27)***	0.309 (6.17)***
<b>Plant and machine operatives</b>	0.079 (1.78)*	0.074 (1.68)*	0.129 (3.44)***	0.125 (3.34)***
<b>Other occupations</b>	0.109 (1.91)*	0.101 (1.76)*	0.184 (3.82)***	0.177 (3.69)***
<b>Industry:</b>				
<b>Farming</b>	0.172 (1.21)	0.187 (1.32)	0.142 (1.22)	0.148 (1.28)
<b>Mining</b>	0.240 (3.49)***	0.239 (3.47)***	0.195 (3.38)***	0.195 (3.38)***
<b>Electricity, gas and water supply</b>	0.013 (0.16)	0.014 (0.17)	0.243 (3.52)***	0.243 (3.51)***
<b>Construction</b>	0.103 (1.66)*	0.107 (1.73)*	0.167 (3.25)***	0.167 (3.24)***
<b>Sales</b>	0.286 (6.37)***	0.283 (6.29)***	0.095 (2.52)**	0.092 (2.42)**
<b>Hotels and restaurants</b>	0.152 (1.12)	0.159 (1.17)	-0.065 (0.58)	-0.062 (0.56)
<b>Transport</b>	0.137 (2.66)***	0.137 (2.66)***	0.104 (2.39)**	0.104 (2.38)**
<b>Finances</b>	0.250 (3.01)***	0.252 (3.03)***	0.134 (1.90)*	0.135 (1.91)*
<b>Real state</b>	0.099	0.102	0.136	0.137

	(1.96)*	(2.02)**	(3.22)***	(3.25)***
<b>Public administration and defence</b>	0.015	0.022	0.067	0.070
	(0.28)	(0.40)	(1.43)	(1.51)
<b>Manufacturing</b>	0.115	0.119	0.109	0.110
	(2.86)***	(2.95)***	(3.16)***	(3.19)***
<b>Health</b>	0.107	0.126	0.039	0.053
	(1.33)	(1.56)	(0.58)	(0.78)
<b>Other community, social and per. acts.</b>	0.043	0.050	0.089	0.093
	(0.54)	(0.61)	(1.29)	(1.34)
<b>Other industry</b>	0.160	0.186	0.283	0.287
	(0.50)	(0.58)	(0.78)	(0.80)
<b>Region:</b>				
<b>South East &amp; London</b>	0.040	0.038	-0.060	-0.063
	(0.38)	(0.36)	(0.69)	(0.73)
<b>North West</b>	-0.129	-0.136	0.018	0.012
	(1.06)	(1.12)	(0.18)	(0.12)
<b>Yorkshire &amp; Humberside</b>	-0.089	-0.099	-0.030	-0.038
	(1.00)	(1.11)	(0.41)	(0.51)
<b>West Midlands</b>	-0.023	-0.032	0.010	0.003
	(0.18)	(0.25)	(0.09)	(0.03)
<b>East Midlands</b>	-0.089	-0.094	0.005	0.001
	(0.84)	(0.88)	(0.05)	(0.01)
<b>East Anglia</b>	-0.088	-0.084	-0.098	-0.095
	(0.75)	(0.72)	(0.98)	(0.95)
<b>South West</b>	-0.027	-0.036	-0.052	-0.061
	(0.22)	(0.30)	(0.51)	(0.59)
<b>Scotland</b>	-0.113	-0.116	-0.020	-0.024
	(0.62)	(0.64)	(0.13)	(0.15)
<b>Wales</b>	-0.077	-0.090	0.252	0.242
	(0.28)	(0.32)	(1.11)	(1.06)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.032		0.031
		(0.45)		(0.51)
<b>Level 3 is highest NVQ</b>		-0.015		-0.019
		(0.22)		(0.32)
<b>Level 2 is highest NVQ</b>		-0.019		-0.009
		(0.30)		(0.17)
<b>Level 1 is highest NVQ</b>		0.014		0.038
		(0.23)		(0.77)
<b>Constant</b>	0.223	0.922	0.747	1.131
	(0.55)	(7.06)***	(2.23)**	(10.39)***
<b>Observations</b>	2504	2504	2430	2430
<b>Number of group</b>	845	845	845	845
<b>R-squared</b>	0.64	0.64	0.69	0.69

**Table 1c: Random effects (hourly wages)**

	(1)	(2)	(3)	(4)
	Ln Actual hourly wages	Ln Actual hourly wages	Ln Typical hourly wages	Ln Typical hourly wages
<b>year==1991</b>	0.205 (2.82)***	0.454 (8.51)***	0.312 (5.21)***	0.353 (8.12)***
<b>year==2000</b>	0.327 (2.57)**	0.798 (9.15)***	0.556 (5.37)***	0.640 (9.11)***
<b>Years of schooling</b>	0.057 (5.86)***		0.011 (1.42)	
<b>Years of experience</b>	0.093 (9.18)***	0.066 (7.72)***	0.048 (5.70)***	0.044 (6.15)***
<b>Years of experience squared</b>	-0.002 (9.75)***	-0.002 (9.68)***	-0.002 (7.66)***	-0.002 (7.79)***
<b>Years of tenure</b>	0.003 (2.21)**	0.004 (2.62)***	0.002 (1.75)*	0.002 (1.98)**
<b>Principal component reading plus math test</b>	0.026 (2.85)***	0.028 (3.02)***	0.022 (3.05)***	0.019 (2.65)***
<b>Total score on o-level or equ. by 16</b>	0.003 (3.80)***	0.003 (4.00)***	0.001 (1.90)*	0.001 (1.41)
<b>Married</b>	-0.010 (0.47)	-0.012 (0.57)	-0.002 (0.10)	-0.003 (0.18)
<b>Has children</b>	0.058 (2.75)***	0.053 (2.51)**	0.030 (1.70)*	0.029 (1.70)*
<b>Race: non white</b>	0.134 (1.32)	0.121 (1.18)	-0.021 (0.26)	-0.031 (0.38)
<b>Disabled</b>	-0.055 (1.46)	-0.057 (1.52)	-0.025 (0.83)	-0.024 (0.79)
<b>Union membership</b>	-0.020 (1.09)	-0.021 (1.14)	0.003 (0.19)	0.002 (0.12)
<b>Years unemployed since 1974</b>	-0.074 (4.64)***	-0.095 (6.16)***	-0.017 (1.33)	-0.017 (1.41)
<b>Occupations:</b>				
<b>Professional</b>	0.162 (4.39)***	0.151 (3.99)***	0.458 (14.78)***	0.448 (14.17)***
<b>Associate professional and tech.</b>	0.152 (4.60)***	0.141 (4.19)***	0.373 (13.50)***	0.365 (13.04)***
<b>Managers &amp; administrators</b>	0.259 (9.19)***	0.249 (8.71)***	0.520 (21.62)***	0.514 (21.13)***
<b>Craft and related</b>	0.040 (1.37)	0.029 (1.00)	0.202 (8.24)***	0.196 (7.99)***
<b>Personal and protective services</b>	0.135 (3.30)***	0.138 (3.34)***	0.273 (7.92)***	0.271 (7.91)***
<b>Plant and machine operatives</b>	-0.011 (0.34)	-0.005 (0.16)	0.060 (2.19)**	0.063 (2.28)**
<b>Other occupations</b>	-0.013 (0.31)	-0.009 (0.21)	0.060 (1.69)*	0.073 (2.03)**
<b>Farming</b>	-0.136 (1.64)	-0.135 (1.62)	-0.054 (0.81)	-0.051 (0.77)
<b>Mining</b>	0.235 (4.37)***	0.233 (4.33)***	0.143 (3.22)***	0.146 (3.30)***
<b>Electricity, gas and water supply</b>	0.065 (1.22)	0.057 (1.05)	0.167 (3.79)***	0.161 (3.66)***
<b>Construction</b>	0.061 (1.39)	0.051 (1.17)	0.051 (1.43)	0.050 (1.40)
<b>Sales</b>	0.213 (5.56)***	0.210 (5.46)***	0.033 (1.04)	0.028 (0.87)

<b>Hotels and restaurants</b>	0.041 (0.39)	0.034 (0.32)	-0.216 (2.54)**	-0.232 (2.73)***
<b>Transport</b>	0.101 (2.97)***	0.085 (2.50)**	0.059 (2.09)**	0.050 (1.78)*
<b>Finances</b>	0.240 (5.93)***	0.233 (5.73)***	0.192 (5.72)***	0.191 (5.71)***
<b>Real state</b>	0.123 (3.34)***	0.129 (3.48)***	0.098 (3.26)***	0.100 (3.30)***
<b>Public administration and defence</b>	0.030 (0.85)	0.028 (0.78)	0.090 (3.01)***	0.086 (2.90)***
<b>Manufacturing</b>	0.122 (4.40)***	0.117 (4.21)***	0.082 (3.57)***	0.078 (3.41)***
<b>Health</b>	0.044 (0.85)	0.040 (0.78)	-0.038 (0.91)	-0.042 (1.01)
<b>Other community, social and per. acts.</b>	0.017 (0.28)	0.008 (0.14)	0.025 (0.49)	0.018 (0.35)
<b>Other industry</b>	-0.117 (0.43)	-0.119 (0.43)	0.030 (0.10)	0.032 (0.10)
<b>Region:</b>				
<b>South East &amp; London</b>	0.124 (3.93)***	0.146 (4.63)***	-0.049 (1.94)*	-0.042 (1.67)*
<b>North West</b>	-0.028 (0.76)	-0.010 (0.26)	0.035 (1.15)	0.043 (1.44)
<b>Yorkshire &amp; Humberside</b>	-0.017 (0.47)	-0.017 (0.45)	0.018 (0.60)	0.018 (0.60)
<b>West Midlands</b>	0.097 (1.62)	0.117 (1.94)*	-0.001 (0.03)	0.007 (0.14)
<b>East Midlands</b>	-0.028 (0.77)	-0.013 (0.35)	-0.035 (1.16)	-0.026 (0.88)
<b>East Anglia</b>	0.073 (1.64)	0.082 (1.82)*	-0.044 (1.22)	-0.042 (1.17)
<b>South West</b>	0.070 (1.58)	0.082 (1.85)*	-0.063 (1.73)*	-0.058 (1.60)
<b>Scotland</b>	0.058 (0.47)	0.094 (0.76)	0.120 (1.13)	0.131 (1.24)
<b>Wales</b>	0.113 (1.05)	0.170 (1.57)	0.043 (0.50)	0.077 (0.90)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.147 (3.54)***		0.134 (3.99)***
<b>Level 3 is highest NVQ</b>		0.077 (1.97)**		0.100 (3.14)***
<b>Level 2 is highest NVQ</b>		0.042 (1.15)		0.108 (3.60)***
<b>Level 1 is highest NVQ</b>		0.038 (0.99)		0.100 (3.19)***
<b>Constant</b>	0.236 (1.59)	0.944 (13.68)***	1.059 (8.74)***	1.116 (19.71)***
<b>Observations</b>	2504	2504	2430	2430
<b>Number of group(nserial)</b>	845	845	845	845

Table 2a: OLS; Pooled sample (weekly wages)

	(1)	(2)	(3)	(4)
	Ln Actual weekly wages	Ln Actual weekly wages	Ln Typical weekly wages	Ln Typical weekly wages
year==1991	0.234 (3.28)***	0.497 (9.61)***	0.403 (9.41)***	0.473 (15.31)***
year==2000	0.319 (2.60)***	0.813 (9.84)***	0.543 (7.40)***	0.680 (13.87)***
Years of schooling	0.057 (6.21)***		0.016 (3.00)***	
Years of experience	0.090 (8.76)***	0.061 (7.03)***	0.035 (5.73)***	0.028 (5.35)***
Years of experience squared	-0.002 (8.59)***	-0.002 (8.44)***	-0.001 (6.20)***	-0.001 (6.31)***
Years of tenure	0.003 (2.32)**	0.004 (2.75)***	0.002 (2.18)**	0.002 (2.47)**
Working hours	0.016 (17.86)***	0.016 (17.87)***	-0.001 (1.46)	-0.001 (1.32)
Principal component reading plus math test	0.022 (2.68)***	0.024 (2.83)***	0.018 (3.55)***	0.016 (3.20)***
Total score on o-level or equ. by 16	0.002 (3.87)***	0.003 (4.04)***	0.001 (1.67)*	0.000 (1.14)
Married	0.000 (0.01)	-0.004 (0.17)	0.002 (0.15)	-0.000 (0.00)
Has children	0.054 (2.53)**	0.049 (2.32)**	0.029 (2.29)**	0.028 (2.25)**
Race: non white	0.141 (1.52)	0.127 (1.36)	-0.031 (0.56)	-0.038 (0.70)
Disabled	-0.038 (1.03)	-0.041 (1.10)	0.021 (0.97)	0.022 (1.00)
Union membership	-0.025 (1.42)	-0.027 (1.48)	-0.016 (1.46)	-0.016 (1.53)
Years unemployed since 1974	-0.073 (4.77)***	-0.095 (6.49)***	-0.024 (2.64)***	-0.028 (3.25)***
<b>Occupations:</b>				
Professional	0.178 (4.85)***	0.167 (4.43)***	0.435 (19.52)***	0.428 (18.71)***
Associate professional and tech.	0.162 (4.91)***	0.150 (4.49)***	0.344 (17.23)***	0.336 (16.57)***
Managers & administrators	0.270 (9.55)***	0.260 (9.06)***	0.526 (30.07)***	0.520 (29.37)***
Craft and related	0.042 (1.45)	0.031 (1.08)	0.207 (11.81)***	0.200 (11.42)***
Personal and protective services	0.132 (3.28)***	0.136 (3.38)***	0.268 (10.90)***	0.269 (10.97)***
Plant and machine operatives	-0.004 (0.11)	0.005 (0.16)	0.089 (4.54)***	0.094 (4.77)***
Other occupations	-0.037 (0.87)	-0.030 (0.70)	0.023 (0.91)	0.036 (1.38)
<b>Industry:</b>				
Farming	-0.154 (1.94)*	-0.161 (2.01)**	-0.062 (1.33)	-0.064 (1.37)
Mining	0.207 (3.86)***	0.206 (3.82)***	0.107 (3.34)***	0.109 (3.39)***
Electricity, gas and water supply	0.070 (1.34)	0.062 (1.18)	0.110 (3.53)***	0.106 (3.40)***
Construction	0.059 (1.38)	0.046 (1.08)	0.036 (1.43)	0.033 (1.30)

<b>Sales</b>	0.200 (5.15)***	0.198 (5.08)***	0.006 (0.28)	0.003 (0.12)
<b>Hotels and restaurants</b>	0.031 (0.29)	0.025 (0.24)	-0.215 (3.49)***	-0.226 (3.68)***
<b>Transport</b>	0.102 (3.09)***	0.086 (2.58)***	0.078 (3.90)***	0.069 (3.44)***
<b>Finances</b>	0.234 (6.07)***	0.226 (5.83)***	0.171 (7.28)***	0.167 (7.11)***
<b>Real state</b>	0.121 (3.34)***	0.126 (3.48)***	0.056 (2.61)***	0.057 (2.64)***
<b>Public administration and defence</b>	0.032 (0.92)	0.029 (0.84)	0.056 (2.64)***	0.052 (2.45)**
<b>Manufacturing</b>	0.122 (4.50)***	0.116 (4.27)***	0.066 (4.05)***	0.062 (3.80)***
<b>Health</b>	0.013 (0.27)	0.009 (0.18)	-0.101 (3.39)***	-0.105 (3.52)***
<b>Other community, social and per. acts.</b>	-0.014 (0.24)	-0.025 (0.41)	-0.047 (1.28)	-0.052 (1.41)
<b>Other industry</b>	-0.170 (0.62)	-0.180 (0.65)	-0.162 (0.71)	-0.170 (0.75)
<b>Region:</b>				
<b>South East &amp; London</b>	0.151 (5.17)***	0.174 (5.93)***	0.015 (0.84)	0.023 (1.31)
<b>North West</b>	-0.038 (1.10)	-0.019 (0.54)	-0.001 (0.05)	0.007 (0.35)
<b>Yorkshire &amp; Humberside</b>	-0.010 (0.29)	-0.008 (0.22)	0.018 (0.87)	0.019 (0.93)
<b>West Midlands</b>	0.121 (2.13)**	0.141 (2.47)**	0.045 (1.32)	0.054 (1.59)
<b>East Midlands</b>	-0.011 (0.32)	0.004 (0.13)	0.001 (0.07)	0.009 (0.43)
<b>East Anglia</b>	0.091 (2.19)**	0.100 (2.38)**	-0.002 (0.09)	0.001 (0.03)
<b>South West</b>	0.098 (2.39)**	0.110 (2.67)***	0.013 (0.54)	0.017 (0.69)
<b>Scotland</b>	0.067 (0.55)	0.106 (0.87)	0.103 (1.37)	0.111 (1.48)
<b>Wales</b>	0.132 (1.32)	0.187 (1.85)*	0.031 (0.52)	0.059 (1.01)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.135 (3.40)***		0.104 (4.42)***
<b>Level 3 is highest NVQ</b>		0.069 (1.84)*		0.082 (3.66)***
<b>Level 2 is highest NVQ</b>		0.029 (0.83)		0.067 (3.20)***
<b>Level 1 is highest NVQ</b>		0.020 (0.55)		0.055 (2.48)**
<b>Constant</b>	3.241 (21.84)***	3.972 (50.45)***	4.759 (53.71)***	4.917 (103.97)***
<b>Observations</b>	2504	2504	2430	2430
<b>R-squared</b>	0.63	0.62	0.77	0.77

**Table 2b: Fixed effects (weekly wages)**

	(1)	(2)	(3)	(4)
	Ln Actual weekly wages	Ln Actual weekly wages	Ln Typical weekly wages	Ln Typical weekly wages
<b>year==1991</b>	0.140 (1.27)	0.171 (1.57)	0.347 (5.24)***	0.360 (5.53)***
<b>year==2000</b>	0.115 (0.58)	0.189 (0.97)	0.439 (3.68)***	0.469 (4.05)***
<b>Years of schooling</b>	0.056 (1.63)		0.026 (1.29)	
<b>Years of experience</b>	0.104 (7.49)***	0.103 (7.40)***	0.045 (5.43)***	0.045 (5.36)***
<b>Years of experience squared</b>	-0.002 (8.31)***	-0.002 (8.99)***	-0.001 (6.58)***	-0.001 (7.07)***
<b>Years of tenure</b>	0.004 (1.97)**	0.003 (1.89)*	0.000 (0.26)	0.000 (0.19)
<b>Working hours</b>	0.015 (13.95)***	0.015 (13.91)***	-0.001 (1.29)	-0.001 (1.32)
<b>Married</b>	-0.053 (1.98)**	-0.049 (1.85)*	-0.010 (0.64)	-0.009 (0.55)
<b>Has children</b>	0.077 (2.92)***	0.074 (2.80)***	0.028 (1.77)*	0.027 (1.70)*
<b>Disabled</b>	-0.047 (0.97)	-0.046 (0.95)	0.050 (1.72)*	0.049 (1.69)*
<b>Union membership</b>	-0.020 (0.80)	-0.018 (0.71)	-0.020 (1.28)	-0.018 (1.16)
<b>Years unemployed</b>	-0.090 (3.13)***	-0.094 (3.24)***	-0.049 (2.88)***	-0.049 (2.93)***
<b>Occupations:</b>				
<b>Professional</b>	0.082 (1.70)*	0.074 (1.53)	0.395 (13.37)***	0.385 (12.89)***
<b>Associate professional and tech.</b>	0.076 (1.79)*	0.069 (1.60)	0.326 (12.60)***	0.318 (12.20)***
<b>Managers &amp; administrators</b>	0.233 (6.70)***	0.228 (6.50)***	0.550 (25.70)***	0.542 (25.12)***
<b>Craft and related</b>	0.104 (2.56)**	0.100 (2.46)**	0.217 (8.65)***	0.214 (8.52)***
<b>Personal and protective services</b>	0.119 (2.08)**	0.114 (2.00)**	0.235 (6.55)***	0.232 (6.46)***
<b>Plant and machine operatives</b>	0.080 (1.81)*	0.076 (1.72)*	0.115 (4.31)***	0.112 (4.19)***
<b>Other occupations</b>	0.058 (1.01)	0.051 (0.89)	0.071 (2.05)**	0.066 (1.92)*
<b>Industry:</b>				
<b>Farming</b>	0.114 (0.80)	0.127 (0.89)	-0.027 (0.33)	-0.023 (0.28)
<b>Mining</b>	0.186 (2.70)***	0.184 (2.66)***	0.075 (1.82)*	0.073 (1.77)*
<b>Electricity, gas and water supply</b>	-0.029 (0.36)	-0.028 (0.34)	0.105 (2.12)**	0.107 (2.15)**
<b>Construction</b>	0.074 (1.19)	0.079 (1.26)	0.078 (2.12)**	0.079 (2.14)**
<b>Sales</b>	0.268 (5.94)***	0.266 (5.87)***	0.018 (0.66)	0.014 (0.51)
<b>Hotels and restaurants</b>	0.155 (1.14)	0.162 (1.19)	-0.029 (0.36)	-0.028 (0.35)
<b>Transport</b>	0.105 (2.03)**	0.105 (2.02)**	0.031 (0.98)	0.030 (0.97)

<b>Finances</b>	0.227 (2.73)***	0.230 (2.76)***	0.108 (2.13)**	0.110 (2.16)**
<b>Real state</b>	0.074 (1.46)	0.078 (1.54)	0.042 (1.37)	0.043 (1.43)
<b>Public administration and defence</b>	0.001 (0.01)	0.007 (0.13)	-0.006 (0.18)	-0.004 (0.12)
<b>Manufacturing</b>	0.102 (2.53)**	0.106 (2.63)***	0.065 (2.62)***	0.067 (2.69)***
<b>Health</b>	0.050 (0.62)	0.067 (0.83)	-0.073 (1.51)	-0.063 (1.31)
<b>Other community, social and per. acts.</b>	0.003 (0.04)	0.009 (0.11)	-0.035 (0.71)	-0.032 (0.65)
<b>Other industry</b>	0.124 (0.39)	0.151 (0.47)	-0.031 (0.12)	-0.024 (0.09)
<b>Region:</b>				
<b>South East &amp; London</b>	0.072 (0.68)	0.070 (0.67)	0.006 (0.09)	0.003 (0.04)
<b>North West</b>	-0.154 (1.26)	-0.158 (1.30)	-0.065 (0.90)	-0.067 (0.92)
<b>Yorkshire &amp; Humberside</b>	-0.079 (0.88)	-0.088 (0.98)	-0.014 (0.27)	-0.022 (0.41)
<b>West Midlands</b>	0.013 (0.10)	0.005 (0.04)	0.084 (1.10)	0.078 (1.02)
<b>East Midlands</b>	-0.075 (0.71)	-0.079 (0.74)	0.054 (0.86)	0.050 (0.80)
<b>East Anglia</b>	-0.055 (0.47)	-0.051 (0.44)	-0.031 (0.43)	-0.029 (0.41)
<b>South West</b>	0.016 (0.13)	0.007 (0.06)	0.010 (0.13)	0.001 (0.01)
<b>Scotland</b>	-0.082 (0.45)	-0.086 (0.47)	0.012 (0.11)	0.008 (0.07)
<b>Wales</b>	-0.101 (0.36)	-0.110 (0.39)	0.182 (1.12)	0.176 (1.08)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.040 (0.55)		0.041 (0.93)
<b>Level 3 is highest NVQ</b>		-0.015 (0.21)		-0.017 (0.41)
<b>Level 2 is highest NVQ</b>		-0.021 (0.34)		-0.017 (0.45)
<b>Level 1 is highest NVQ</b>		-0.011 (0.18)		0.012 (0.33)
<b>Constant</b>	3.346 (8.15)***	3.985 (28.44)***	4.650 (19.25)***	4.946 (59.21)***
<b>Observations</b>	2504	2504	2430	2430
<b>Number of group</b>	845	845	845	845
<b>R-squared</b>	0.69	0.69	0.83	0.83

**Table 2c: Random effects (weekly wages)**

	(1)	(2)	(3)	(4)
	Ln Actual weekly wages	Ln Actual weekly wages	Ln Typical weekly wages	Ln Typical weekly wages
<b>year==1991</b>	0.222 (3.05)***	0.488 (9.09)***	0.393 (8.97)***	0.465 (14.49)***
<b>year==2000</b>	0.291 (2.29)**	0.793 (9.06)***	0.526 (6.92)***	0.667 (12.80)***
<b>Years of schooling</b>	0.060 (6.20)***		0.018 (3.06)***	
<b>Years of experience</b>	0.092 (8.99)***	0.063 (7.29)***	0.037 (6.13)***	0.030 (5.76)***
<b>Years of experience squared</b>	-0.002 (8.97)***	-0.002 (8.89)***	-0.001 (6.76)***	-0.001 (6.87)***
<b>Years of tenure</b>	0.003 (2.37)**	0.004 (2.79)***	0.002 (1.89)*	0.002 (2.17)**
<b>Working hours</b>	0.016 (17.69)***	0.016 (17.67)***	-0.001 (1.54)	-0.001 (1.43)
<b>Principal component reading plus math test</b>	0.024 (2.62)***	0.026 (2.84)***	0.019 (3.40)***	0.017 (3.16)***
<b>Total score on o-level or equ. by 16</b>	0.003 (3.66)***	0.003 (3.93)***	0.001 (1.55)	0.000 (1.19)
<b>Married</b>	-0.009 (0.40)	-0.011 (0.51)	-0.000 (0.02)	-0.002 (0.13)
<b>Has children</b>	0.058 (2.72)***	0.052 (2.47)**	0.029 (2.28)**	0.028 (2.21)**
<b>Race: non white</b>	0.140 (1.37)	0.127 (1.23)	-0.032 (0.52)	-0.038 (0.63)
<b>Disabled</b>	-0.039 (1.03)	-0.042 (1.10)	0.026 (1.17)	0.026 (1.17)
<b>Union membership</b>	-0.025 (1.39)	-0.026 (1.43)	-0.016 (1.43)	-0.016 (1.47)
<b>Years unemployed since 1974</b>	-0.074 (4.65)***	-0.097 (6.30)***	-0.027 (2.82)***	-0.031 (3.42)***
<b>Occupations:</b>				
<b>Professional</b>	0.164 (4.44)***	0.153 (4.05)***	0.428 (18.99)***	0.420 (18.22)***
<b>Associate professional and tech.</b>	0.148 (4.48)***	0.137 (4.07)***	0.342 (17.00)***	0.334 (16.37)***
<b>Managers &amp; administrators</b>	0.265 (9.38)***	0.255 (8.90)***	0.531 (30.49)***	0.525 (29.75)***
<b>Craft and related</b>	0.048 (1.63)	0.037 (1.26)	0.208 (11.64)***	0.202 (11.26)***
<b>Personal and protective services</b>	0.129 (3.14)***	0.132 (3.20)***	0.263 (10.48)***	0.264 (10.53)***
<b>Plant and machine operatives</b>	0.005 (0.17)	0.012 (0.37)	0.094 (4.72)***	0.097 (4.85)***
<b>Other occupations</b>	-0.027 (0.62)	-0.024 (0.54)	0.032 (1.23)	0.040 (1.51)
<b>Industry:</b>				
<b>Farming</b>	-0.133 (1.60)	-0.133 (1.59)	-0.060 (1.21)	-0.058 (1.19)
<b>Mining</b>	0.209 (3.89)***	0.207 (3.82)***	0.101 (3.15)***	0.103 (3.19)***
<b>Electricity, gas and water supply</b>	0.057 (1.06)	0.048 (0.90)	0.109 (3.36)***	0.105 (3.23)***
<b>Construction</b>	0.061 (1.40)	0.050 (1.14)	0.044 (1.68)*	0.040 (1.56)

<b>Sales</b>	0.213 (5.53)***	0.211 (5.46)***	0.008 (0.32)	0.004 (0.18)
<b>Hotels and restaurants</b>	0.054 (0.52)	0.050 (0.47)	-0.176 (2.83)***	-0.187 (3.01)***
<b>Transport</b>	0.103 (3.01)***	0.087 (2.54)**	0.073 (3.52)***	0.064 (3.13)***
<b>Finances</b>	0.235 (5.79)***	0.227 (5.56)***	0.166 (6.68)***	0.163 (6.58)***
<b>Real state</b>	0.117 (3.16)***	0.123 (3.31)***	0.055 (2.51)**	0.057 (2.57)**
<b>Public administration and defence</b>	0.029 (0.80)	0.027 (0.74)	0.051 (2.32)**	0.048 (2.19)**
<b>Manufacturing</b>	0.120 (4.33)***	0.115 (4.13)***	0.066 (3.89)***	0.062 (3.70)***
<b>Health</b>	0.019 (0.37)	0.016 (0.31)	-0.095 (3.09)***	-0.099 (3.22)***
<b>Other community, social and per. acts.</b>	-0.007 (0.12)	-0.014 (0.23)	-0.041 (1.11)	-0.046 (1.23)
<b>Other industry</b>	-0.112 (0.41)	-0.113 (0.41)	-0.136 (0.61)	-0.140 (0.62)
<b>Region:</b>				
<b>South East &amp; London</b>	0.149 (4.72)***	0.172 (5.42)***	0.011 (0.59)	0.020 (1.04)
<b>North West</b>	-0.041 (1.09)	-0.022 (0.59)	-0.006 (0.29)	0.002 (0.08)
<b>Yorkshire &amp; Humberside</b>	-0.013 (0.35)	-0.012 (0.33)	0.014 (0.62)	0.015 (0.67)
<b>West Midlands</b>	0.120 (1.99)**	0.140 (2.31)**	0.048 (1.33)	0.056 (1.55)
<b>East Midlands</b>	-0.013 (0.36)	0.002 (0.05)	0.001 (0.03)	0.008 (0.35)
<b>East Anglia</b>	0.084 (1.88)*	0.093 (2.06)**	-0.007 (0.26)	-0.004 (0.16)
<b>South West</b>	0.097 (2.19)**	0.109 (2.46)**	0.012 (0.44)	0.016 (0.60)
<b>Scotland</b>	0.052 (0.42)	0.091 (0.72)	0.092 (1.18)	0.102 (1.33)
<b>Wales</b>	0.125 (1.16)	0.181 (1.66)*	0.040 (0.62)	0.068 (1.07)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.135 (3.25)***		0.101 (4.10)***
<b>Level 3 is highest NVQ</b>		0.066 (1.67)*		0.074 (3.15)***
<b>Level 2 is highest NVQ</b>		0.026 (0.71)		0.061 (2.75)***
<b>Level 1 is highest NVQ</b>		0.017 (0.43)		0.051 (2.22)**
<b>Constant</b>	3.209 (20.90)***	3.975 (49.44)***	4.740 (51.56)***	4.917 (101.80)***
<b>Observations</b>	2504	2504	2430	2430
<b>Number of group</b>	845	845	845	845

**Table 3a: Fixed effects estimates with NVQ level in 1981 (hourly wages)**

	Ln Actual hourly wages	Ln Typical hourly wage
NVQ level:		
Interaction nvq45 in 1981 & dummy 1991	0.338 (4.43)***	0.180 (2.81)***
Interaction nvq3 in 1981 & dummy 1991	0.200 (2.54)**	0.131 (1.98)**
Interaction nvq2 in 1981 & dummy 1991	0.215 (2.86)***	0.096 (1.52)
Interaction nvq1 in 1981 & dummy 1991	0.016 (0.19)	0.040 (0.57)
Interaction nvq45 in 1981 & dummy 2000	0.417 (4.80)***	0.338 (4.74)***
Interaction nvq3 in 1981 & dummy 2000	0.300 (3.38)***	0.284 (3.89)***
Interaction nvq2 in 1981 & dummy 2000	0.242 (2.84)***	0.219 (3.13)***
Interaction nvq1 in 1981 & dummy 2000	0.121 (1.31)	0.043 (0.56)

**Table 3b: Fixed effects estimates with NVQ level in 1981 (weekly wages)**

	Ln Actual weekly wages	Ln Typical weekly wage
NVQ level:		
Interaction nvq45 in 1981 & dummy 1991	0.326 (4.26)***	0.125 (2.72)***
Interaction nvq3 in 1981 & dummy 1991	0.178 (2.24)**	0.050 (1.05)
Interaction nvq2 in 1981 & dummy 1991	0.210 (2.78)***	0.056 (1.25)
Interaction nvq1 in 1981 & dummy 1991	0.020 (0.24)	0.044 (0.88)
Interaction nvq45 in 1981 & dummy 2000	0.393 (4.50)***	0.207 (4.05)***
Interaction nvq3 in 1981 & dummy 2000	0.268 (2.99)***	0.153 (2.93)***
Interaction nvq2 in 1981 & dummy 2000	0.215 (2.51)**	0.105 (2.10)**
Interaction nvq1 in 1981 & dummy 2000	0.102 (1.09)	-0.022 (0.40)

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## Appendix A

The variables used in our models are defined below:

### *Dependent variables:*

**Ln Gross weekly wages:** Logarithm of weekly wages.

**Ln Gross hourly wages:** Logarithm of hourly wages.

**Ln Typical weekly wages:** Logarithm of the mean weekly wage by occupational code, based on the information stated by the New Earnings Survey (NES).

### **Personal Characteristics Variables**

**Married:** Equals 1 if married, 0 otherwise.

**Parent:** Equals 1 if respondent has children when surveyed 0 otherwise.

**Own transport:** Equals 1 if respondent uses own transport and 0 otherwise.

**Race:** Equals 0 if respondent is the white, 1 otherwise.

**Disabled:** Equals 1 if respondent reports any long standing illness which limits daily activities, 0 otherwise.

**Geographic Area :** Dummy variables for each region (according to the standard region classification): North, North West, Yorkshire & Humberside, West Midlands, East Midlands, East Anglia, South West, Scotland, Wales (base case South East & London).

### **Job characteristics**

**Experience:** Years working.

**Tenure:** Years working at the current firm.

**Years unemployed:** Years unemployed since respondent was 16.

**Working hours:** Weekly working hours.

**Union member:** Equals 1 if respondent is currently trades union membership.

**Occupation:** Dummy variables for employee's occupation in his current job, according to the SOC 1-digit: Professional occupations, Associate professional and technical occupations, Clerical and secretarial occupations, Craft & related occupations, Personal & protective service occupations, Sales occupations, Plant & machine operatives, Other occupations (base case Managers and administrators).

**Industry:** Dummy variables for employee's industry in his current job, according to the SIC 1-digit: Farming (Agriculture, Hunting, Forestry and

Fishing), Mining & Quarrying, Electricity (Electricity, Gas & Water supply), Construction, Sales (Wholesale & Retail Trade) Hotels & Restaurants, Transport (Transport, Storage & Communications), Finances (Financial intermediation), Real Estate (Real Estate, Renting & Business Activities), Public Administration and Defence, Education, Health (Health & Social work), Other Community, Social and Personal Services, Other industry (base case Manufacturing).

### **Educational background**

**Principal component reading plus math test:** Principal component (one factor) of the variables “score on 11 year old math” and “score on 11 year old Southgate reading”.

**Total score on O-level or equivalent (by 16):** Total score on O-level or equivalent when the respondent was aged 16.

**Schooling:** Total years in full time education (worked out as the difference between age left full time education and starting age).

**Dummy variables reporting the highest NVQ achievement when surveyed** (the qualifications includes in each NVQ are detailed in Table 1A below)-base case none NVQ.

**Table A1: Classification of qualifications by NVQ level**

<b>NVQ Level</b>	<b>Academic</b>	<b>Vocational</b>
<b>4 &amp; 5</b>	Higher Degree Degree HE Diploma PGCE Other teacher training qualification	NVQ level 5 BTEC Higher Certificate Diploma HNC/HND NVQ level 4 Professional degree level qualifications Nursing/paramedic RSA Higher Diploma
<b>3</b>	2 or more A-levels Scottish Highers Scottish Certificate of 6 <sup>th</sup> Year Studies	BTEC National Diploma ONC/OND City & Guilds Part 4/Career Ext/Full Tech City & Guilds Part 2/Craft/Intermediate City & Guilds Part 3/Final/Advanced Craft RSA Advanced Diploma Pitmans level 3 Advanced GNVQ NVQ level 3
<b>2</b>	1 A-level 2 or more AS levels GCSE grade A*-C O-levels grade A-C CSE grade 1	BTEC First Certificate BTEC First Diploma Apprenticeships City & Guilds Part 1 RSA First Diploma Pitmans level 2 Intermediate GNVQ NVQ level 2
<b>1</b>	GCSE grade D-G CSEs grades 2-5 Scottish Standard grades 4-5 Other Scottish school qualification O levels grade D-E (not GCSE)	City & Guilds Other RSA Cert/Other Pitmans level 1 Other vocational qualifications HGV Foundation GNVQ/Other GNVQ NVQ level 1 Other NVQ/Units towards NVQ

**Table A2: Descriptive statistics**

	1981		1991		2000	
	Mean	Std. Deviation	Mean	Std. Deviation	Mean	Std. Deviation
<b>Ln actual hourly wage</b>	1.59	0.37	2.27	0.41	2.45	0.54
<b>Ln actual weekly wage</b>	5.26	0.44	6.03	0.42	6.20	0.55
<b>Ln typical hourly wage</b>	1.69	0.33	2.24	0.34	2.43	0.45
<b>Ln typical weekly wage</b>	5.35	0.19	6.01	0.30	6.17	0.40
Regressors:						
<b>Years of schooling</b>	11.10	1.66	11.19	1.85	11.20	1.87
<b>Experience (years)</b>	5.76	1.94	15.10	2.42	23.58	2.61
<b>Experience squared</b>	36.96	17.60	233.76	63.77	562.91	111.51
<b>Tenure (years)</b>	3.68	2.45	7.29	5.75	12.29	8.74
<b>Working hours</b>	40.48	9.60	43.52	8.20	42.94	8.37
<b>Principal component math &amp; reading</b>	0.32	1.20	0.32	1.20	0.32	1.20
<b>Total score on o-level or equivalent (by 16)</b>	17.86	16.52	17.86	16.52	17.86	16.52
<b>Married</b>	0.39	0.49	0.83	0.37	0.85	0.36
<b>Parent</b>	0.12	0.32	0.64	0.48	0.73	0.45
<b>Race: non white (=1)</b>	0.007	0.08	0.007	0.08	0.007	0.08
<b>Disabled</b>	0.03	0.18	0.04	0.19	0.07	0.25
<b>Union membership</b>	0.53	0.50	0.43	0.50	0.38	0.49
<b>Years unemployed</b>	0.14	0.35	0.27	0.64	0.33	0.75
Occupation						
<b>Professional</b>	0.08	0.28	0.08	0.28	0.08	0.28
<b>Associate professional and technical</b>	0.09	0.28	0.11	0.31	0.11	0.32
<b>Managers and administrators</b>	0.07	0.26	0.23	0.42	0.29	0.46
<b>Craft and related</b>	0.28	0.45	0.19	0.39	0.17	0.38
<b>Personal &amp; protective services</b>	0.08	0.27	0.07	0.26	0.06	0.23
<b>Plant &amp; machine operatives</b>	0.12	0.33	0.13	0.33	0.11	0.32
<b>Other</b>	0.06	0.23	0.01	0.11	0.06	0.23
Industry						
<b>Farming</b>	0.02	0.12	0.01	0.11	0.008	0.09
<b>Mining &amp; quarrying</b>	0.05	0.22	0.02	0.14	0.008	0.09
<b>Electricity</b>	0.06	0.23	0.02	0.13	0.02	0.12
<b>Construction</b>	0.05	0.22	0.04	0.20	0.05	0.21
<b>Sales</b>	0.11	0.31	0.03	0.17	0.03	0.18
<b>Hotels &amp; restaurants</b>	0.01	0.10	0.002	0.05	0.005	0.069
<b>Transport</b>	0.10	0.31	0.13	0.33	0.12	0.33
<b>Finances</b>	0.06	0.24	0.07	0.25	0.07	0.25
<b>Real state</b>	0.04	0.19	0.09	0.28	0.10	0.30
<b>Public Administration and defence</b>	0.13	0.33	0.12	0.32	0.13	0.34
<b>Manufacturing</b>	0.29	0.45	0.28	0.45	0.29	0.45
<b>Health</b>	0.03	0.16	0.04	0.19	0.03	0.18
<b>Other services</b>	0.02	0.12	0.02	0.13	0.03	0.16
<b>Other industry</b>	0.001	0.03	0.0	0.0	0.001	0.03
Region:						
<b>South East &amp; London</b>	0.42	0.49	0.42	0.49	0.40	0.49
<b>North West</b>	0.12	0.32	0.11	0.31	0.11	0.32
<b>Yorkshire &amp; Humberside</b>	0.11	0.31	0.13	0.33	0.11	0.32
<b>West Midlands</b>	0.02	0.13	0.03	0.16	0.03	0.16
<b>East Midlands</b>	0.12	0.33	0.12	0.33	0.11	0.31
<b>East Anglia</b>	0.05	0.22	0.05	0.22	0.06	0.25
<b>South West</b>	0.05	0.22	0.06	0.23	0.07	0.25
<b>Scotland</b>	0.004	0.07	0.002	0.05	0.006	0.08
<b>Wales</b>	0.006	0.08	0.006	0.08	0.007	0.08
NVQ level:						
<b>NVQ 4 or 5</b>	0.22	0.42	0.33	0.47	0.38	0.48
<b>NVQ 3</b>	0.25	0.43	0.19	0.39	0.19	0.39
<b>NVQ 2</b>	0.26	0.44	0.30	0.46	0.28	0.45
<b>NVQ 1</b>	0.17	0.38	0.12	0.32	0.11	0.31

**Appendix B: Cross-sectional Results for specific years**  
**Table B1a: Actual and Typical weekly wages in 1981**  
**(OLS estimations)**

	(1)	(2)	(3)	(4)
	Ln Wage (Actual)	Ln Wage (Actual)	Ln Wage (Typical)	Ln Wage (Typical)
Schooling (years)	0.067 (1.43)		0.019 (0.82)	
Experience (years)	0.161 (3.08)***	0.094 (2.37)**	-0.007 (0.28)	-0.028 (1.50)
Experience squared	-0.010 (2.40)**	-0.009 (2.09)**	0.003 (1.31)	0.003 (1.56)
Tenure (years)	0.000 (0.01)	0.000 (0.07)	-0.001 (0.20)	0.000 (0.02)
Working hours	0.020 (13.35)***	0.020 (13.28)***	-0.000 (0.36)	-0.000 (0.32)
Principal component math & reading	0.011 (0.74)	0.012 (0.86)	0.010 (1.43)	0.010 (1.42)
Total score on o-level or equivalent (by 16)	0.000 (0.21)	0.000 (0.39)	0.001 (0.99)	0.000 (0.20)
Married	-0.017 (0.56)	-0.012 (0.39)	0.019 (1.31)	0.021 (1.45)
Parent	0.029 (0.64)	0.023 (0.50)	-0.016 (0.73)	-0.018 (0.82)
Race: non white (=1)	-0.021 (0.13)	-0.007 (0.04)	-0.039 (0.52)	-0.031 (0.41)
Disabled	-0.009 (0.13)	-0.008 (0.11)	0.015 (0.44)	0.018 (0.51)
Union membership	-0.047 (1.55)	-0.044 (1.44)	0.002 (0.12)	0.005 (0.33)
Years unemployed	0.008 (0.13)	-0.054 (1.24)	-0.007 (0.24)	-0.021 (1.01)
<b>Occupations:</b>				
Professional	0.045 (0.70)	0.063 (0.94)	0.202 (6.67)***	0.200 (6.36)***
Associate professional and tech.	0.006 (0.11)	0.015 (0.25)	0.119 (4.44)***	0.111 (3.98)***
Managers & administrators	-0.071 (1.16)	-0.062 (1.01)	0.062 (2.04)**	0.066 (2.18)**
Craft and related	0.017 (0.37)	0.018 (0.39)	0.152 (6.92)***	0.143 (6.41)***
Personal and protective services	0.026 (0.38)	0.035 (0.51)	0.127 (3.84)***	0.130 (3.95)***
Plant and machine operatives	-0.002 (0.05)	0.001 (0.02)	0.086 (3.32)***	0.085 (3.33)***
Other occupations	0.006 (0.08)	0.008 (0.11)	0.052 (1.48)	0.063 (1.80)*
<b>Industry:</b>				
Farming	-0.086 (0.63)	-0.086 (0.63)	-0.125 (1.93)*	-0.129 (2.00)**
Mining	0.103 (1.15)	0.100 (1.11)	-0.078 (1.82)*	-0.076 (1.79)*
Electricity, gas and water supply	-0.020 (0.23)	-0.025 (0.28)	-0.042 (0.98)	-0.043 (1.03)
Construction	0.126 (1.38)	0.118 (1.29)	-0.081 (1.88)*	-0.076 (1.76)*
Sales	0.152 (1.84)*	0.151 (1.82)*	-0.153 (3.91)***	-0.160 (4.10)***

<b>Hotels and restaurants</b>	0.018 (0.12)	0.018 (0.12)	-0.211 (2.97)***	-0.224 (3.17)***
<b>Transport</b>	0.177 (2.17)**	0.173 (2.12)**	-0.070 (1.79)*	-0.076 (1.97)**
<b>Finances</b>	-0.030 (0.33)	-0.037 (0.40)	-0.114 (2.58)**	-0.120 (2.73)***
<b>Real state</b>	0.098 (1.03)	0.088 (0.92)	-0.082 (1.82)*	-0.088 (1.95)*
<b>Public administration and defence</b>	-0.039 (0.47)	-0.043 (0.51)	-0.085 (2.13)**	-0.089 (2.25)**
<b>Manufacturing</b>	0.071 (0.97)	0.067 (0.92)	-0.056 (1.62)	-0.058 (1.69)*
<b>Health</b>	0.205 (1.95)*	0.196 (1.86)*	-0.194 (3.91)***	-0.201 (4.07)***
<b>Other community, social and per. acts.</b>	0.163 (1.28)	0.145 (1.13)	-0.127 (2.03)**	-0.137 (2.21)**
<b>Other industry</b>	-0.054 (0.14)	-0.050 (0.13)	0.000 (.)	0.000 (.)
<b>Region:</b>				
<b>South East &amp; London</b>	0.150 (3.07)***	0.152 (3.11)***	0.018 (0.79)	0.024 (1.01)
<b>North West</b>	-0.111 (1.96)*	-0.105 (1.86)*	0.046 (1.70)*	0.051 (1.88)*
<b>Yorkshire &amp; Humberside</b>	-0.033 (0.57)	-0.034 (0.59)	0.062 (2.23)**	0.060 (2.20)**
<b>West Midlands</b>	0.245 (2.27)**	0.247 (2.27)**	0.041 (0.79)	0.049 (0.95)
<b>East Midlands</b>	-0.041 (0.72)	-0.041 (0.72)	0.020 (0.76)	0.024 (0.88)
<b>East Anglia</b>	0.199 (2.79)***	0.195 (2.72)***	0.007 (0.21)	0.009 (0.26)
<b>South West</b>	0.172 (2.41)**	0.172 (2.41)**	0.070 (2.02)**	0.068 (1.96)*
<b>Scotland</b>	0.062 (0.32)	0.071 (0.36)	0.104 (0.98)	0.103 (0.97)
<b>Wales</b>	0.199 (1.15)	0.208 (1.19)	0.030 (0.37)	0.079 (0.96)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		-0.048 (0.70)		0.078 (2.42)**
<b>Level 3 is highest NVQ</b>		0.007 (0.13)		0.097 (3.55)***
<b>Level 2 is highest NVQ</b>		-0.035 (0.63)		0.057 (2.18)**
<b>Level 1 is highest NVQ</b>		-0.022 (0.40)		0.077 (2.93)***
<b>Constant</b>	3.042 (4.03)***	4.156 (29.50)***	5.036 (13.32)***	5.285 (79.08)***
<b>Observations</b>	815	815	784	784
<b>R-squared</b>	0.34	0.34	0.24	0.26

**Table B1b: Actual and Typical weekly in 1991  
(OLS estimations)**

	(1)	(2)	(3)	(4)
	Ln Wage (Actual)	Ln Wage (Actual)	Ln Wage (Typical)	Ln Wage (Typical)
<b>Schooling (years)</b>	0.042 (3.10)***		0.016 (1.79)*	
<b>Experience (years)</b>	0.079 (2.24)**	0.095 (2.75)***	0.001 (0.03)	0.009 (0.38)
<b>Experience squared</b>	-0.003 (1.82)*	-0.004 (2.99)***	0.000 (0.12)	-0.001 (0.54)
<b>Tenure (years)</b>	0.004 (1.88)*	0.005 (2.18)**	0.002 (1.57)	0.002 (1.74)*
<b>Working hours</b>	0.014 (9.46)***	0.014 (9.52)***	0.001 (1.04)	0.001 (1.02)
<b>Principal component math &amp; reading</b>	0.025 (2.06)**	0.016 (1.33)	0.014 (1.87)*	0.011 (1.46)
<b>Total score on o-level or equivalent (by 16)</b>	0.004 (3.94)***	0.003 (3.70)***	0.001 (1.20)	0.001 (1.15)
<b>Married</b>	0.036 (0.99)	0.035 (0.97)	-0.040 (1.68)*	-0.037 (1.56)
<b>Parent</b>	0.049 (1.71)*	0.046 (1.61)	0.034 (1.88)*	0.031 (1.69)*
<b>Race: non white (=1)</b>	0.163 (1.21)	0.154 (1.14)	0.006 (0.07)	0.003 (0.03)
<b>Disabled</b>	-0.056 (0.94)	-0.061 (1.02)	0.022 (0.58)	0.021 (0.54)
<b>Union membership</b>	0.006 (0.22)	0.001 (0.04)	-0.018 (1.06)	-0.019 (1.13)
<b>Years unemployed</b>	-0.082 (3.71)***	-0.093 (4.54)***	-0.012 (0.83)	-0.016 (1.20)
<b>Occupations:</b>				
<b>Professional</b>	0.196 (3.63)***	0.172 (3.17)***	0.422 (11.07)***	0.414 (10.68)***
<b>Associate professional and tech.</b>	0.197 (3.97)***	0.185 (3.72)***	0.457 (12.92)***	0.455 (12.75)***
<b>Managers &amp; administrators</b>	0.221 (5.16)***	0.210 (4.91)***	0.563 (17.71)***	0.559 (17.47)***
<b>Craft and related</b>	0.034 (0.75)	0.031 (0.69)	0.233 (7.13)***	0.232 (7.11)***
<b>Personal and protective services</b>	0.169 (2.76)***	0.167 (2.75)***	0.407 (9.59)***	0.405 (9.57)***
<b>Plant and machine operatives</b>	0.016 (0.33)	0.039 (0.79)	0.124 (3.55)***	0.127 (3.61)***
<b>Other occupations</b>	-0.070 (1.11)	-0.032 (0.50)	0.052 (1.22)	0.064 (1.47)
<b>Industry:</b>				
<b>Farming</b>	-0.388 (3.43)***	-0.394 (3.51)***	-0.198 (2.79)***	-0.193 (2.73)***
<b>Mining</b>	0.249 (2.90)***	0.263 (3.07)***	0.174 (3.22)***	0.179 (3.31)***
<b>Electricity, gas and water supply</b>	0.142 (1.59)	0.128 (1.43)	0.062 (1.10)	0.051 (0.91)
<b>Construction</b>	-0.048 (0.80)	-0.059 (0.98)	-0.001 (0.03)	-0.002 (0.05)
<b>Sales</b>	0.181 (2.45)**	0.187 (2.56)**	0.193 (3.85)***	0.195 (3.89)***
<b>Hotels and restaurants</b>	0.277	0.233	-0.202	-0.223

	(1.20)	(1.02)	(1.40)	(1.55)
<b>Transport</b>	-0.037	-0.052	0.042	0.032
	(0.84)	(1.19)	(1.46)	(1.13)
<b>Finances</b>	0.236	0.220	0.127	0.120
	(4.53)***	(4.27)***	(3.77)***	(3.58)***
<b>Real state</b>	0.068	0.064	0.046	0.043
	(1.44)	(1.36)	(1.50)	(1.42)
<b>Public administration and defence</b>	-0.026	-0.033	0.010	0.007
	(0.52)	(0.67)	(0.31)	(0.23)
<b>Manufacturing</b>	0.042	0.031	0.001	-0.006
	(1.15)	(0.87)	(0.05)	(0.27)
<b>Health</b>	-0.130	-0.138	-0.118	-0.127
	(1.96)*	(2.09)**	(2.73)***	(2.90)***
<b>Other community, social and per. acts.</b>	-0.071	-0.069	-0.073	-0.080
	(0.75)	(0.73)	(1.12)	(1.24)
<b>Other industry</b>	0.000	0.000	0.000	0.000
	(.)	(.)	(.)	(.)
<b>Region:</b>				
<b>South East &amp; London</b>	0.160	0.185	-0.006	0.003
	(3.63)***	(4.23)***	(0.22)	(0.10)
<b>North West</b>	0.023	0.049	-0.009	0.002
	(0.44)	(0.95)	(0.28)	(0.07)
<b>Yorkshire &amp; Humberside</b>	0.012	0.017	-0.001	-0.001
	(0.24)	(0.34)	(0.04)	(0.02)
<b>West Midlands</b>	0.055	0.049	0.019	0.017
	(0.68)	(0.60)	(0.36)	(0.33)
<b>East Midlands</b>	0.052	0.078	-0.013	-0.001
	(1.02)	(1.53)	(0.40)	(0.02)
<b>East Anglia</b>	0.047	0.057	0.012	0.014
	(0.75)	(0.92)	(0.31)	(0.35)
<b>South West</b>	0.065	0.079	-0.021	-0.012
	(1.07)	(1.30)	(0.51)	(0.29)
<b>Scotland</b>	0.026	0.108	0.237	0.275
	(0.10)	(0.44)	(1.55)	(1.79)*
<b>Wales</b>	0.131	0.182	-0.057	-0.036
	(0.87)	(1.22)	(0.61)	(0.39)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.237		0.110
		(4.12)***		(2.95)***
<b>Level 3 is highest NVQ</b>		0.127		0.066
		(2.29)**		(1.84)*
<b>Level 2 is highest NVQ</b>		0.137		0.081
		(2.65)***		(2.42)**
<b>Level 1 is highest NVQ</b>		0.060		0.083
		(1.08)		(2.34)**
<b>Constant</b>	4.030	4.434	5.400	5.514
	(13.73)***	(18.70)***	(27.41)***	(32.92)***
<b>Observations</b>	845	845	805	805
<b>R-squared</b>	0.46	0.47	0.57	0.58

**Table B1c: Actual and Typical weekly wages in 2000  
(OLS estimations)**

	(1)	(2)	(3)	(4)
	Ln Wage (Actual)	Ln Wage (Actual)	Ln Wage (Typical)	Ln Wage (Typical)
<b>schooling 42 (yrs)</b>	0.060 (3.71)***		0.009 (1.07)	
<b>Experience (years)</b>	0.033 (0.61)	0.080 (1.52)	-0.012 (0.39)	-0.004 (0.16)
<b>Experience squared</b>	-0.000 (0.33)	-0.002 (1.75)*	0.000 (0.48)	0.000 (0.12)
<b>Tenure (years)</b>	0.001 (0.48)	0.002 (0.86)	0.001 (0.81)	0.001 (1.00)
<b>Working hours</b>	0.017 (9.37)***	0.018 (9.78)***	-0.000 (0.19)	0.000 (0.05)
<b>Principal component math &amp; reading (by 11)</b>	0.028 (1.77)*	0.028 (1.72)*	0.027 (3.15)***	0.023 (2.66)***
<b>Total score on o-level or equivalent (by 16)</b>	0.003 (2.46)**	0.003 (2.73)***	0.001 (0.92)	0.000 (0.65)
<b>Married</b>	-0.018 (0.36)	-0.026 (0.51)	-0.008 (0.28)	-0.013 (0.47)
<b>Parent</b>	0.051 (1.30)	0.049 (1.24)	0.030 (1.41)	0.031 (1.47)
<b>Race: non white (=1)</b>	0.221 (1.24)	0.180 (1.00)	0.030 (0.31)	0.011 (0.11)
<b>Disabled</b>	-0.056 (0.93)	-0.067 (1.11)	0.047 (1.42)	0.050 (1.52)
<b>Union membership</b>	-0.021 (0.61)	-0.027 (0.78)	-0.019 (1.02)	-0.021 (1.14)
<b>Years unemployed</b>	-0.068 (2.74)***	-0.092 (3.93)***	-0.009 (0.69)	-0.012 (0.92)
<b>Occupation:</b>				
<b>Professional</b>	0.392 (4.90)***	0.383 (4.72)***	0.810 (18.54)***	0.806 (18.27)***
<b>Associate professional and tech.</b>	0.349 (4.76)***	0.341 (4.60)***	0.598 (14.90)***	0.589 (14.64)***
<b>Managers &amp; administrators</b>	0.505 (7.79)***	0.486 (7.41)***	0.827 (23.37)***	0.821 (23.05)***
<b>Craft and related</b>	0.140 (2.02)**	0.142 (2.04)**	0.383 (10.16)***	0.382 (10.14)***
<b>Personal and protective services</b>	0.298 (3.50)***	0.310 (3.62)***	0.421 (9.06)***	0.425 (9.13)***
<b>Plant and machine operatives</b>	0.042 (0.58)	0.054 (0.73)	0.203 (5.11)***	0.217 (5.44)***
<b>Other occupations</b>	-0.013 (0.15)	0.001 (0.01)	0.091 (1.88)*	0.109 (2.24)**
<b>Industry:</b>				
<b>Farming</b>	-0.081 (0.46)	-0.077 (0.44)	-0.002 (0.02)	-0.000 (0.00)
<b>Mining</b>	0.544 (3.26)***	0.553 (3.30)***	0.167 (1.83)*	0.168 (1.85)*
<b>Electricity, gas and water supply</b>	0.248 (1.93)*	0.204 (1.58)	0.228 (3.24)***	0.221 (3.15)***
<b>Construction</b>	0.027 (0.33)	0.001 (0.01)	0.038 (0.87)	0.028 (0.65)
<b>Sales</b>	0.429 (4.37)***	0.430 (4.35)***	0.297 (5.55)***	0.293 (5.47)***
<b>Hotels and restaurants</b>	-0.247	-0.235	-0.497	-0.502

	(1.13)	(1.07)	(4.16)***	(4.20)***
<b>Transport</b>	0.173	0.143	0.160	0.151
	(2.85)***	(2.35)**	(4.79)***	(4.55)***
<b>Finances</b>	0.364	0.357	0.252	0.247
	(5.11)***	(4.99)***	(6.49)***	(6.35)***
<b>Real state</b>	0.149	0.150	0.084	0.084
	(2.40)**	(2.41)**	(2.46)**	(2.46)**
<b>Public administration and defence</b>	0.115	0.108	0.145	0.135
	(1.86)*	(1.73)*	(4.25)***	(3.97)***
<b>Manufacturing</b>	0.210	0.201	0.143	0.137
	(4.29)***	(4.08)***	(5.34)***	(5.12)***
<b>Health</b>	-0.061	-0.077	-0.098	-0.100
	(0.66)	(0.83)	(1.93)*	(1.97)**
<b>Other community, social and per. acts.</b>	-0.072	-0.086	-0.027	-0.027
	(0.73)	(0.87)	(0.50)	(0.50)
<b>Other industry</b>	-0.251	-0.260	-0.083	-0.106
	(0.58)	(0.60)	(0.36)	(0.45)
<b>Region:</b>				
<b>South East &amp; London</b>	0.142	0.176	0.024	0.030
	(2.60)***	(3.19)***	(0.80)	(1.00)
<b>North West</b>	0.018	0.050	-0.020	-0.013
	(0.27)	(0.76)	(0.56)	(0.37)
<b>Yorkshire &amp; Humberside</b>	0.015	0.027	0.008	0.010
	(0.23)	(0.41)	(0.22)	(0.28)
<b>West Midlands</b>	0.104	0.134	0.037	0.049
	(1.01)	(1.29)	(0.66)	(0.87)
<b>East Midlands</b>	-0.040	-0.019	-0.025	-0.022
	(0.60)	(0.29)	(0.68)	(0.61)
<b>East Anglia</b>	0.089	0.110	-0.009	-0.006
	(1.16)	(1.44)	(0.21)	(0.13)
<b>South West</b>	0.077	0.098	0.013	0.011
	(1.02)	(1.30)	(0.32)	(0.28)
<b>Scotland</b>	0.105	0.172	-0.041	-0.044
	(0.53)	(0.86)	(0.38)	(0.40)
<b>Wales</b>	0.073	0.135	0.080	0.097
	(0.40)	(0.74)	(0.81)	(0.98)
<b>NVQ level:</b>				
<b>Level 4 or 5 is highest NVQ</b>		0.201		0.093
		(2.45)**		(2.09)**
<b>Level 3 is highest NVQ</b>		0.118		0.095
		(1.46)		(2.16)**
<b>Level 2 is highest NVQ</b>		0.067		0.077
		(0.87)		(1.87)*
<b>Level 1 is highest NVQ</b>		0.102		0.017
		(1.26)		(0.38)
<b>Constant</b>	3.688	4.084	5.479	5.499
	(6.68)***	(7.42)***	(18.15)***	(18.41)***
<b>Observations</b>	844	844	841	841
<b>R-squared</b>	0.45	0.45	0.68	0.69