

What Has Happened to Wages?

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Preface

The **Joseph Rowntree Foundation** has supported this project as part of its *Programme of Work on Income and Wealth*. The facts presented and views expressed in this report, however, are those of the authors and not necessarily those of the Foundation.

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Abstract

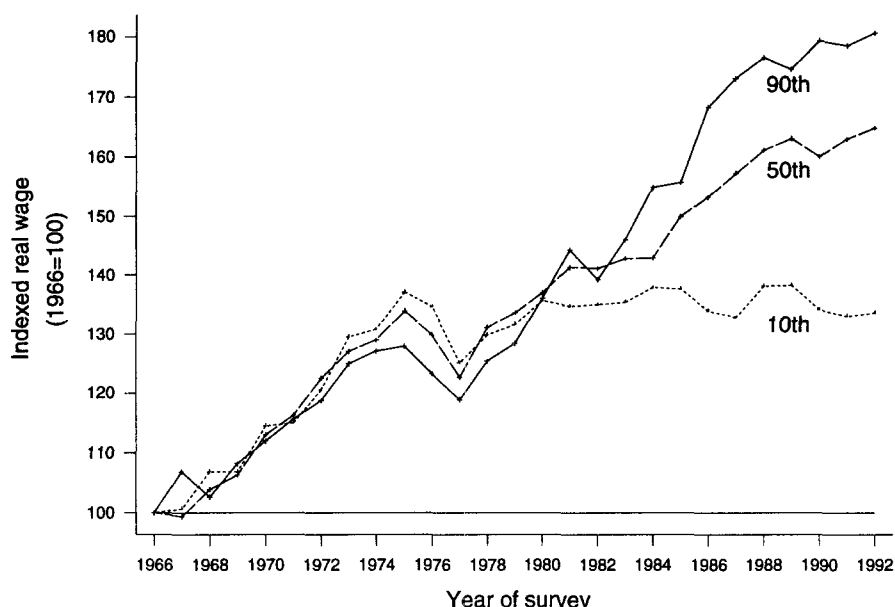
The aim of this project has been to explain and describe the changing distribution of male hourly wages in the UK over the last three decades. The key findings are as follows:

- (1) In the period 1966-75, young men entering the labour market could expect to receive higher real wages than their predecessors. After this period, this was true only for educated men and those men at the top of the wage distribution. Less-educated male labour market entrants have much poorer wage and employment prospects now than they did before.
- (2) There is little evidence of returns to experience for low-educated and low-skilled workers.
- (3) Although wage returns to education increased in the 1980s, this cannot explain all the increase in inequality because the wage distribution also widened within education groups.

1. Introduction

There has been much debate in recent years about the widening gap between rich and poor and the fact that while national income grew at post war record levels during the 1980s, the real incomes of the bottom 10 per cent of families were no higher in 1991 than there were in 1967 (see Goodman and Webb 1994). Wages are an important part of household income and the trends in the dispersion of wages mirror very closely the trends in the dispersion of income. Knowing the reasons for the changing structure of the wage distribution is thus crucial to an understanding of the trends in overall household income.

Figure 1.1
Indexed Real Hourly Earnings by Percentile



Source: Family Expenditure Surveys, 1966 to 1992.

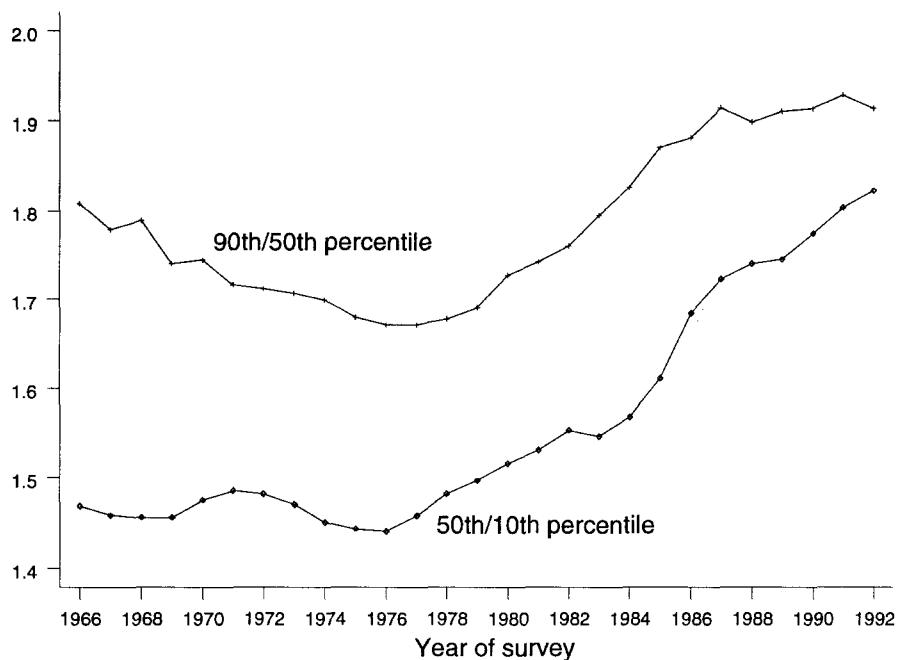
To give some indication of the magnitude of changes in the UK wage structure, Figure 1.1 plots indexed real hourly wages (1966=100) for different parts of the distribution. The following distinct stages are illustrated:

- (1) a period (1966-72) when there was no change in the wage structure; there was wage growth throughout the distribution;
- (2) a short period (1972-75) when relative differentials were falling and all wages were growing;
- (3) the two-year period when the social contract was at its toughest when all wages were falling but wages were hit hardest at the top;

- (4) a long sustained period from 1978 to 1992 when growth rates diverged across the distribution. Over these 15 years, the 10th percentile wage did not change, never recovering the wages received in 1975, while the median grew by 35 per cent and the 90th percentile by over 50 per cent.

To draw out the relative differences, Figure 1.2 plots the ratios of the 90th percentile to the median and the median to the 10th percentile between 1966 and 1992. Looking first at the top line, the 90/50 ratio, a bowl-shaped relationship emerges, with differentials falling until the mid-1970s and then rising dramatically and overtaking the level that they were in 1966 by 1984. Apart from the period 1970-76 when pay differentials between the top and the bottom were compressed, there was no real change in the 50/10 ratio until after the incomes policy period of the mid- to late 1970s, after which the ratio rose steadily. Over the whole period, median wages increased from being 47 per cent more than the 10th percentile in 1966 to being over 80 per cent more by 1992. It is clear, therefore, that when one looks at the wages of 80 per cent of the work-force, the real changes have been at the bottom rather than the top of the distribution.

Figure 1.2
The Changing Dispersion of Male Wages, 1966-92



Source: Family Expenditure Surveys, 1966 to 1992.

To put the recent UK experience in context, it is necessary to look at what has happened over a longer time period and across other developed economies. There is no consistent time series of data on wage dispersion over the last century, but

what there is suggests that the gap between the highest and the lowest paid is now larger than it ever was. Moreover, the size of the changes over the last 15 or so years is unprecedented. Table 1.1 shows this quite clearly.

Table 1.1
Wage Dispersion of Full-Time Male Manual Workers,
1886-1990

	50th/10th differen- tial	90th/50th differen- tial
1886	1.458	1.431
1906	1.504	1.568
1938	1.477	1.399
1970	1.486	1.475
1976	1.279	1.449
1982	1.464	1.526
1988	1.556	1.565
1990	1.570	1.591

Sources: New Earnings Surveys; British Labour Statistics: *Historical Abstract 1886-1968, Table 79*.

In terms of the international picture, Freeman and Katz (1994) and Gregg and Machin (1994) cite evidence showing that the UK and the US are alone in experiencing such a widening of wage differentials in the 1980s (with the US still having a much higher level). While earnings differentials in most countries became more compressed in the 1970s, and the 1980s saw rises in a number of countries, the increases in dispersion of the 1980s are much smaller elsewhere than in the US or the UK. It is clear that the recent rise in earnings dispersion is not a global phenomenon. This is illustrated in Table 1.2 which reports the 90/10 male earnings ratio of several countries.

Table 1.2
Cross-Country Evidence on Male 90/10 Earnings ratio

Country	Early 1970s	Late 1970s / Early 1980s	Late 1980s
UK	2.48 (1973)	2.41 (1979)	3.39 (1991)
US	4.71 (1975)	4.48 (1980)	5.58 (1989)
Canada	-	3.60 (1981)	3.94 (1990)
France	3.22 (1973)	3.25 (1980)	3.42 (1991)
Sweden	2.06 (1973)	1.97 (1981)	2.16 (1991)
Norway	-	2.05 (1979)	1.97 (1991)

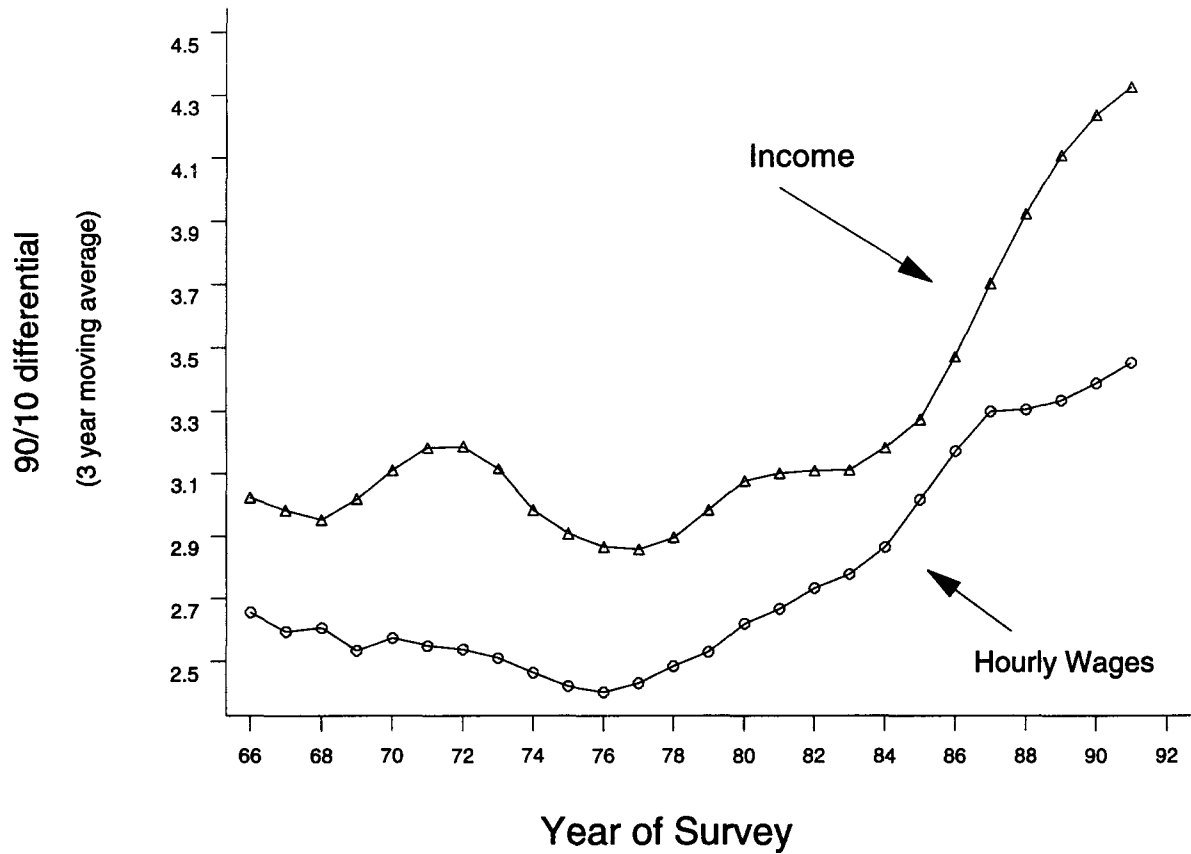
Source: Gregg and Machin, 1994.

To highlight the potential role changes in the structure of earnings have played in shaping the changes in the distribution of household income we can compare the trends discussed above with trends in the overall distribution of income. Data on the distribution of income is usually at a family level and "*equivalised*" (normalised) to control for different family size. This means that the two trends are not directly comparable. Nevertheless, Figure 1.3 plots the 90/10 percentile ratio of hourly earnings with that of equivalised household income¹. As can be seen, the two series are very similar. Both household income and hourly wages of men were less dispersed in the middle 1970s than either the 1960s or the 1980s. Wage dispersion has been rising steadily since 1976 and income dispersion since 1977. Moreover, Gardiner (1994) shows that the economies with the fastest increase in the dispersion of incomes (i.e. the UK and the US) were also the countries with the fastest increase in the dispersion of wages.

The structure of this report is as follows. The next section discusses the issues and possible reasons for the observed widening of differentials. Section 3 reports empirical evidence based on data from the Family Expenditure Survey (FES) which examines and tests these arguments in more detail. Finally the last section discusses the policy implications of the research and offers some concluding remarks.

¹ see Goodman and Webb 1994 for details of how these figures were computed

Figure 1.3
Income and Wage Dispersion 1966 to 1991



Sources: Goodman and Webb, 1994.
Notes: Figure shows equivalised weekly income

2. The issues

2.1 Why should the wage distribution have changed over the last three decades?

The reasons given for the changes in the wage structure relate to the reasons why the relative demand for unskilled workers should have fallen. The first is that product markets are becoming more competitive across countries so that unskilled labour in the UK is now in direct competition with unskilled labour in developing economies with lower wages. This competition is either direct as developing countries are more attractive for overseas companies needing unskilled labour or indirect as goods made in these countries are cheaper. The second is that there have been changes in production processes which mean that many tasks are now done by machine and not by hand. Put simply, both of these factors together mean that there are now effectively fewer unskilled jobs at any given wage.¹ It may also be likely that the increase in female participation also means that there is more competition for these jobs, although what evidence there is suggests that the increase in participation has come from educated women. (see for example Gregg and Wadsworth 1994)

There is considerable evidence that important compositional changes have occurred in the UK labour market. In 1969, for example, 39 per cent of the work-force worked in manufacturing, whilst by 1990 this had fallen to 23 per cent. In 1969 the private service sector employed 49 per cent of the work-force, whilst by 1990 it employed 70 per cent.² It is likely that the return to skill is higher in these new types of employment where jobs are more heterogeneous.

It is important, however, not only to look at the changes in the pattern of demand. How these demand changes affect the distribution of wages will depend on how the supply side responds. It is here that labour market institutions are important. First, as discussed below, labour market institutions will shape the degree to which the collapse in demand for unskilled labour transmits itself to a fall in the wage or in employment. Second they will also effect the degree to which workers can obtain the skills that are in demand. The cross country differences in the changes in the wage structure described above underline the need to investigate the effect of institutional differences.

One important difference between the experience of the US and that of Europe over recent years is that the US has not experienced such large and persistent unemployment levels. In the UK inactivity rates of men of working age have

¹ See Bound and Freeman (1992), Murphy and Welch (1992) and Katz and Freeman (1992) for a discussion of some of these ideas in the US context

² Source: *Employment Gazette*.

doubled from 7 to 14 percent from 1973 to 1991 (source OECD outlook)¹. Moreover, median wages and below have been falling steadily in the US over the last 20 years. By contrast, in the UK wages at the 10th percentile have been flat. In many states in the US, there is no universal benefit available to able bodied unemployed men without children and benefit is instead restricted to those who have worked if only for a few weeks over the past year. The collapse in demand for unskilled workers is then more likely to affect their wages rather than their employment.

Another important issue is the ability of workers to respond to the higher wages received by skilled workers, and students to the higher wage of educated workers by up-grading their skills. The education and training systems are then crucial. There is much evidence that not only are UK workers less skilled on average than those in the rest of Europe but also that they lack the general skills obtained from basic education that are necessary for further training (see Finegold and Soskice 1988).

There have been significant changes in public policy towards education in the last century. The oldest men in the sample that we study were born in 1908, and the youngest in 1967. The differences in the level and the quality of education received by these workers cannot be overstated. The minimum school-leaving age was raised to 15 in 1948 and again to 16 in 1973. The tripartite grammar, secondary modern, technical school structure had also been established and then dismantled and replaced in part by the comprehensive system during the period 1948 to 1967. The 1960s and 1970s saw the expansion of further and higher education after the Robbins Report. Given the increasing demand for educated workers, however, we should expect these changes to mitigate the increase in earnings dispersion.

Pay setting institutions are also important in determining the distribution of pay and its changes over time. Until 1978 there was centralized control of pay increases through incomes policies. These compressed the distribution of pay when they contained a flat rate element, a maximum level of increase or any preferential arrangement for low paid workers. They can also be expected to constrain the growth of pay differentials even amongst those workers who received the same proportional rate of increase. The particular incomes policies are shown below. As can be seen, many of them had explicit elements which served to hold back high pay more than low.

¹This includes the unemployed, the long term sick, those taking early retirement and the other inactive

Incomes Policies 1966 to 1977

(percentage increases are given in money terms)

1966	Statutory pay freeze, followed by a nil norm
1968-9	3.5% ceiling, replaced by a 2.5-4.5% range during which wage pay increases had to be linked to productivity gains
1972-74	
Stage I Nov 1972- March 1973	Pay Standstill
Stage II Mar-Sept 1973	Annual increases limited to £1 a week, and 4 percent of employers pay bill up to a maximum of £250
Stage III Nov 1974	Ceiling of 7% of group pay bill
The Social Contract 1975-1977	
July 1975	Pay increases limited to £6 a week, no increase for those earning above £8,500
July 1976	Pay increases limited to 5% with a lower limit of £2.50 and an upper limit of £4
1977	Pay increases limited to 10%

Source: Clegg (1979)

Other formal arrangements that protected low paid workers directly that have been removed or weakened over the 1980s. The fair wages resolution for example meant that any organization contracted to local or central government had to pay "fair wages". This was abolished in the 1980 Employment Act. Over the 80s young workers were taken out of the coverage of wages councils and the number of inspectors policing the awards were reduced.

The actual mechanisms by which pay is set are also important. There is evidence that the variance of wages is smaller when pay is set at an industry or national level and / or between unions and firms, then when it is set at a firm or establishment level unilaterally by the employer. Gosling and Machin (1995) for Britain; or Freeman (1980, 1982) and Card (1991) for the US show that trade unions are associated with lower levels of wage dispersion for example. Between 1980 and 1990, there was a large drop in union presence in the UK: the percentage of the work-force belonging to a trade union fell from 58 per cent to 42 per cent over this time period (see Waddington (1992)); the proportion of workplaces with

recognized unions fell from 64 per cent in 1980 to 53 per cent by 1990 (see Millward, Stevens, Smart and Hawes (1992) and Disney, Gosling and Machin (1994)). Moreover very few workers are covered by a national or industry level agreement (see Milward et al *ibid*)

2.2 Descriptive Statistics

We have thus summarized the main reasons why we should expect the shape of the earnings distribution to have changed. We present some preliminary evidence from our data on shifts in raw return to skill.

The first panel of Table 2.1 shows the differing composition of skills across three date-of-birth groups. On average, 12 per cent of those born between 1910 and 1920 worked in unskilled and 70 per cent in manual occupations. Of those born between 1950 and 1960, 40 years later, the comparable figures are 3 per cent and 56 per cent respectively. The next panel shows how younger cohorts are becoming more educated than older ones. We separated our sample by the education regimes they were under. Thus the minimum school-leaving age was 14 for those born before 1935, 15 for those born between 1935 and 1957 and 16 for those born after 1957. The striking thing is not only the fall in the proportions leaving school before 16 across generations, but the increase in those with post-compulsory and post-school education. For the work-force born before 1935, 6 per cent had some post-school education, compared with 19 per cent of those born after 1957. The average level of skill, therefore, measured both in terms of occupation and the average educational attainment of the work-force, has been rising over time. This could be either because workers are becoming more skilled, or because lower qualified workers can no longer find work.

Table 2.1
Changes in Cohort Composition

Skill

	1910 to 1920	<i>Cohort born:</i> 1930 to 1940	1950 to 1960
Professional	9.92	16.35	22.76
Managerial	9.88	13.74	12.71
Clerical	9.44	6.99	8.87
Skilled	34.57	40.33	39.73
Semi-Skilled	24.61	17.58	13.09
Unskilled	11.58	5.01	2.84

Education

Age when left school	Before 1935	<i>Cohort born:</i> 1935 to 1957	After 1957
14 or less	59.06	3.87	0.80
15	15.63	43.93	6.55
16	12.15	22.99	55.16
17 or 18	7.14	13.98	18.48
Over 18	6.02	15.24	19.01

Table 2.2 shows the changing fortunes over time of different skill and education groups. Because the FES only asks occupational information on a consistent basis up to 1986 and on years of schooling after 1977, we cannot see how both have changed over the whole period. We report wages in logarithms rather than levels so that differences can be interpreted in proportionate terms. The difference between the median wage of professional workers and that of unskilled workers fell from 0.579 in 1968 to 0.464 in 1978 but rose to 0.608 in 1990. For manual workers, the log of the skill differential fell slightly from 0.143 in 1968 to 0.125 in 1978, but rose dramatically to 0.173 by 1990. The table also shows how the within-group variance has changed over time, and that the largest rises in variances have been amongst the lower-skilled workers - the lower-grade non-manual and the manual occupations. The returns to education have followed the same time profile as the returns to skill.

Table 2.2
Changes in Skill Differentials, 1968-90

	1968	1978	1986
Skill			
Professional	1.488 (0.955)	1.592 (0.941)	1.785 (0.964)
Managerial	1.425 (1.175)	1.568 (1.113)	1.707 (1.196)
Clerical	1.081 (0.747)	1.286 (0.726)	1.402 (0.955)
Skilled	1.052 (0.682)	1.253 (0.663)	1.350 (0.917)
Unskilled	0.909 (0.677)	1.128 (0.726)	1.177 (0.904)
	1968	1978	1990
Education			
11 or fewer years		1.263 (0.797)	1.386 (1.099)
12 or 13 years		1.305 (0.974)	1.696 (1.204)
Over 13 years		1.605 (1.113)	1.902 (1.233)

Note: Table shows median log wage in 1985 prices, with 90/10 differentials given in parentheses.

To summarise, there is evidence of an increase in the raw return to education over time - both those workers with some form of post-school education and those with some post-16 education have been doing consistently better than those with no post-16 education, and this gap has been widening over time. In terms of the return to skill, this mirrors the path of the 90/50 wage differential described above, with large falls in pay differentials in the early to mid-1970s and large rises thereafter. The increase in *within-group* variance means that there is more going on than a simple rise in the returns to (observable) skill.

3. Generational Effects on Wages

We next look at how the level and the growth of wages differ across generations. This is important because there are many reasons why changes in the labour market may affect entrants into the labour market in a different way from incumbents, not least because compositional changes in the labour market are driven by changes in the attributes of entrants. Moreover, this analysis permits us to look directly at other factors, such as the degree to which the skills of younger workers are substitutable for those of older workers, the effect of cohort size on wages, the effects of changing education policy and the degree of persistence of wages received at labour market entry.

The changing experiences of younger workers over the period is shown in Figure 3.1. Each panel plots the wages of both young (aged 22 to 28) and all workers for the relevant percentile. Figure 3.1 clearly draws out both the changing fortunes of each succeeding generation and the degree of substitutability between different age-groups over time. Taking the 10th percentile first (Figure 3.1(a)), it is striking that, before 1974, the 10th percentile wage of young workers exactly matches that of all workers. This suggests that what returns to experience are available to men at the bottom of the distribution are completely overshadowed by the improved performance of younger workers (this could imply that young workers are perfect substitutes for men in low-skilled and low-value-added occupations). The log of the 10th percentile wage of young workers reaches a maximum of 0.9 (=£3.74 in 1994 prices) in 1979 and falls from then on, while the overall 10th percentile wage remains relatively constant. The divergence during the 1980s tells us that younger workers are no longer able to compete on the same terms as older workers. This can be contrasted with the fortunes of workers at the top of the distribution (Figure 3.1(b)), where the difference between young and old workers remains constant over the whole period.

Figure 3.2 contrasts the fortunes of workers with different levels of education. The increase in the wage returns to education is shown by the divergence between the wages received by differently qualified young workers. Figure 3.2(a) looks at the 10th percentile of the wages received by young workers and by all workers. While the wages of workers with no post-school education are more divergent over time at this point in the distribution, the wages of the more highly educated group actually become closer. At the 90th percentile wage (Figure 3.2(b)), both the wages of young workers and those of all workers move up together, with the increases being more marked as the level of education increases. This tells us that it is only those workers with education and those who are located at the top of the wage distribution who can expect to do better than their predecessors.

Figure 3.1(a)
10th Percentile Wages of All Workers and of Young Workers, 1966-92

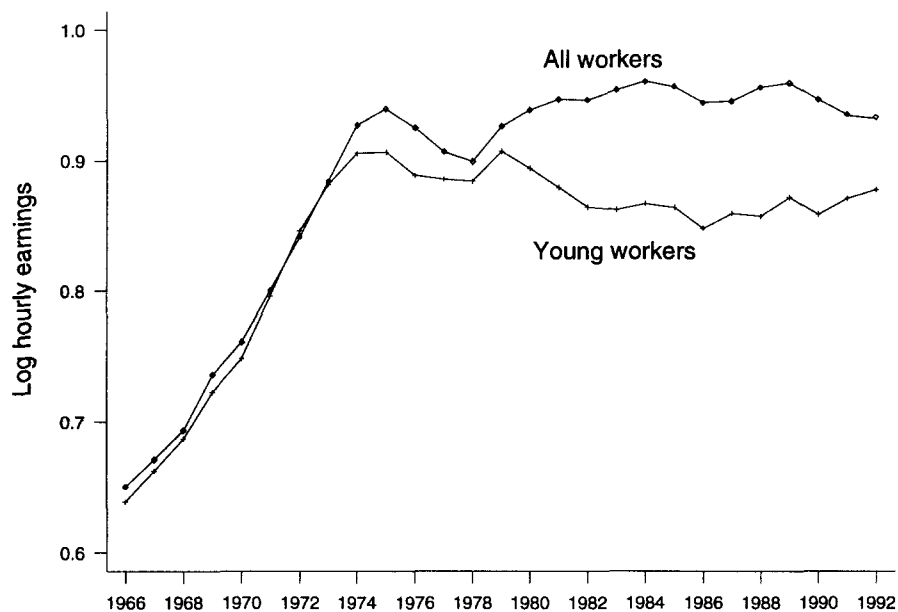
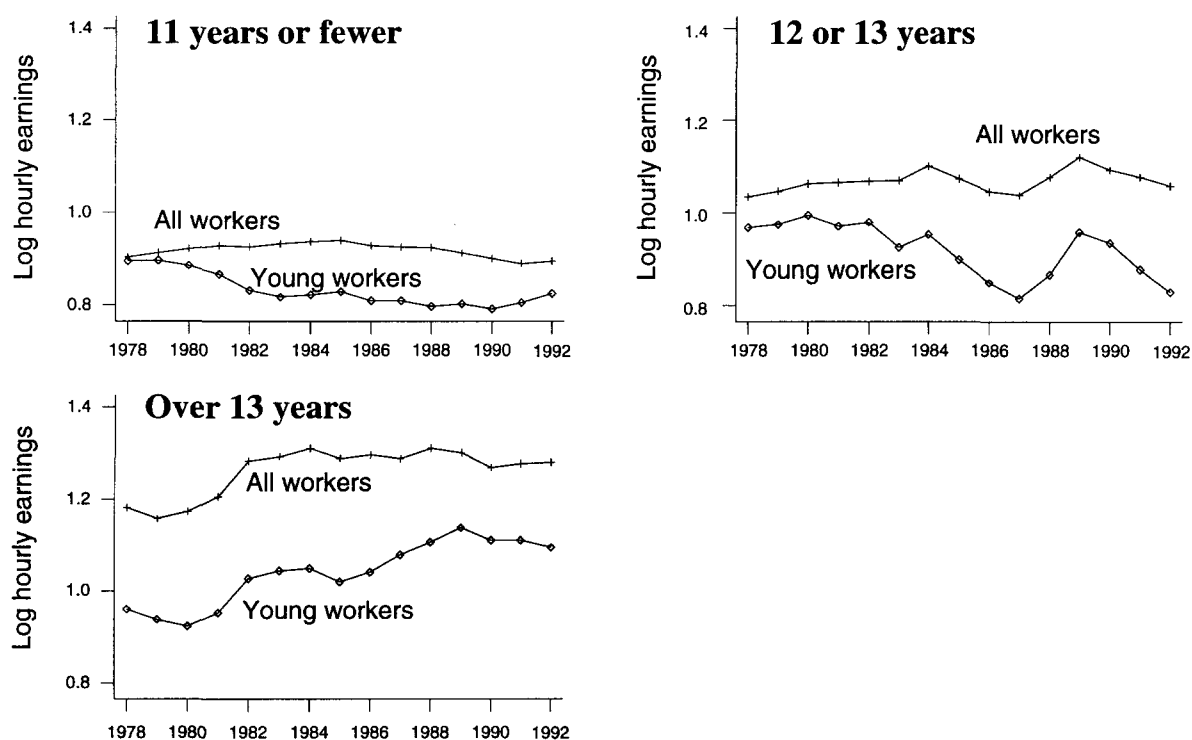


Figure 3.1(b)
90th Percentile Wages of All Workers and of Young Workers, 1966-92



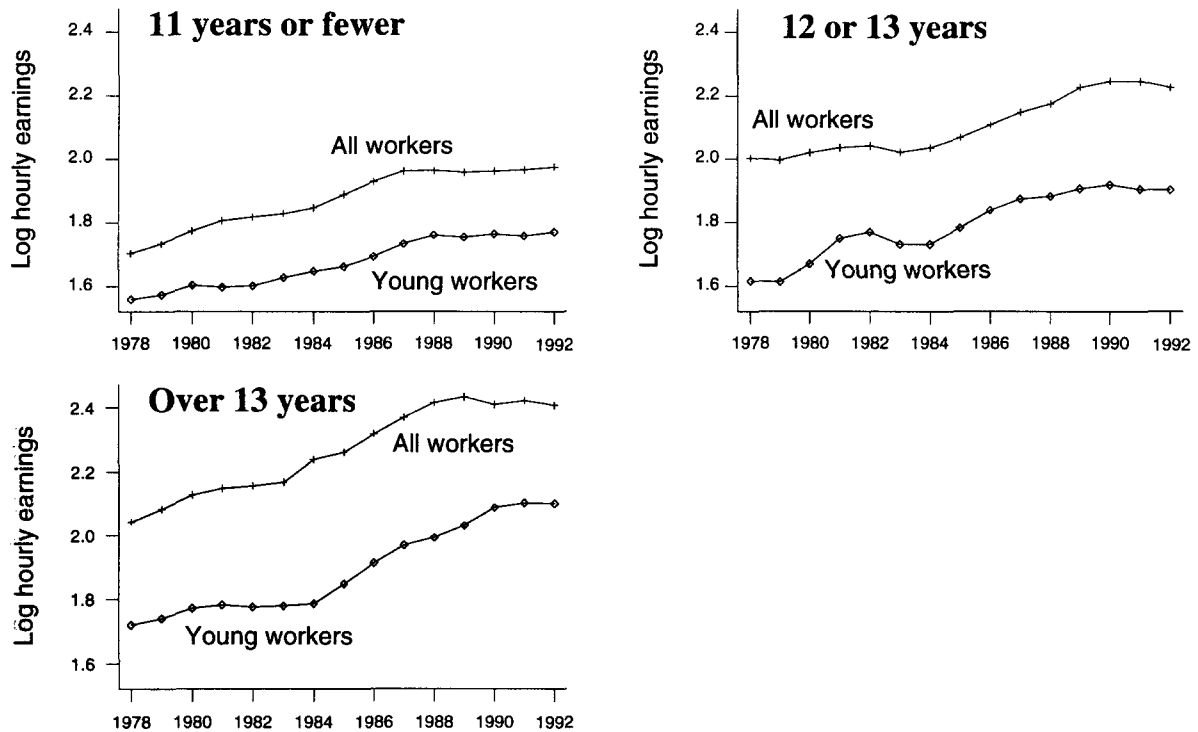
Figure 3.2(a)
10th Percentile Wages of All Workers and of Young Workers
by Years of Schooling, 1966-92



The worrying point is that there is no evidence of returns to experience at the bottom of the pay distribution. This is demonstrated quite clearly by the small gap between the wages of young workers and of all workers in the early part of the period. The increase in the gap in the 1980s could imply that the returns to experience have increased, but this seems unlikely. The fact that these workers are located in 'dead-end' jobs with no opportunity to augment their human capital by acquiring job-specific skills is the reason behind the small returns to experience. If anything, the expansion of the service industries has increased rather than reduced the predominance of these jobs. This implies that not only are these young workers coming into the labour market at lower wages than their predecessors but the expected growth rate over the life cycle is lower.

This underlines the inherent difficulty in measuring the returns to experience. Data from the 1970s would give completely the opposite story to data from the 1980s. In the 1970s the *cross-sectional* returns to experience (the difference between the wages of older workers and those of younger workers at any point in time) are non-existent while the *longitudinal* returns (the growth rates of particular workers over time) are much greater. This picture completely reverses during the 1980s, with younger workers earning much less than older workers, but not increasing their wages over time. In all, the factors that influence wages can be grouped into three:

Figure 3.2(b)
90th Percentile Wages of All Workers and of Young Workers
by Years of Schooling, 1966-92



- (1) age effects (the returns to experience);
- (2) cohort effects (the differences across generations);
- (3) time effects (the effects of changes in the macro-environment, aggregate productivity growth and so on).

In the more detailed exposition in Gosling, Machin and Meghir (1994) we discuss the difficulties in separating out these factors, the motivation being that it is important to separate out the effects of long-run changes in the structure of the economy from the effects of changing institutions and cyclical factors. We found that this latter separation could be achieved by a comparison of wage evolution in the late 1960s and early 1970s with that over the last 15 years using some reasonable assumptions. Thus, while it might be impossible to separate out the different effects of time, age and cohort on wages, we can ascribe any *changes* in the dependence of wages on age, conditioned on date of birth, and of wages on cohort, conditioned on age, as a function of time. We leave technical discussion of these issues to Gosling, Machin and Meghir (1994). but summarise the results below.

Changes in the structure of male wages, 1966-92

Our methodology involved aggregating 27 years of FES data into 999 cells, one for each age at each year. For each cell, we computed the wage at each decile of the distribution. For a subset of the data, where we have information on years of schooling (1978 onwards), we further divided the data into education subgroups - those with 11 or fewer years of education (no post-16 education), those with 12 or 13 years of education (some post-16 education) and those with over 13 years of education (some post-school education). We used regression analysis to relate each decile of the wage distribution of a particular cohort/year cell to age, cyclical factors, education and a fixed cohort effect. We thus gain some insight into the relative effects of compositional factors, long-term trends and time-specific shocks on the distribution of wages. We can also show how and for whom the returns to education have changed. The principal results that emerged were the following (more details are given in Gosling, Machin and Meghir (1994)):

- (1) The social contract of the mid-1970s had a negative effect on wages throughout the distribution, but the top of the distribution was hit harder than the median and below. There is no evidence of a 'catch-up' period after 1977, however. The incomes policies of the period thus appeared to have caused a *permanent* shock to wages.
- (2) During the early 1970s, there was no real difference in growth rates across the distribution. The predicted increases in the wages of a particular birth cohort from the ages of 25 to 50 were the same for the top decile and quartile as for the bottom. Similarly, the predicted difference across generations did not vary over the distribution.
- (3) After 1977, however, all this changed. Increases in wages across generations were limited to the top of the distribution and only above-median wages of a particular cohort could be expected to increase with age. The implication for workers at the bottom end of the wage distribution of more recent cohorts does not look promising for the future. They seem to have entered the labour market at lower real wages than their earlier counterparts or, as in the discussion of non-employment earlier, have not been able to enter the labour market at all.
- (4) There is a substantial increase in the variance of wages with age. There is only evidence of returns to experience for educated workers and workers at the top of the wage distribution. This can not explain any of the overall increase in dispersion, however, as the age composition of the workforce has not changed
- (5) There is no evidence that the return to experience has changed over time. The growing difference between the wages of young and old workers described above can be entirely explained by a fixed cohort effect which is constant over the life-cycle

- (6) The returns to education have risen over time and across generations, but they can explain little of the increase in the overall variance of wages. This is because most of the changes have been driven by increases in the variance of wages amongst those with similar education and experience.
- (7) There has been an increase in the wage returns to education across generations, so that workers in newer cohorts are more heavily penalised for having no post-16 education than their predecessors and gain more from having some post-school education. However, not all the observed increases in the variance of wages over time can be ascribed to the changing returns to and composition of education, as the variance of wages has risen significantly within various education groups.

In summary, the overall increase in the dispersion of earnings cannot be explained by increases in the relative demand for *observable* skill.

4. Policy Implications and Concluding Remarks

In the UK there was a large increase in the dispersion of male hourly earnings from the late 1970s onwards. The magnitude of this rise is unprecedented when one considers the historical evolution of the UK wage distribution and the experience of other countries, (with the exception of the United States). In this project we have investigated this dramatic shift in the anatomy of the UK wage structure, looking at the distribution of real hourly wages for men between 1966 and 1992 using microeconomic data from the Family Expenditure Survey.

The collapse in labour market opportunities at the lower end of the skill distribution has been so drastic that some men can no longer to provide for themselves through employment. In terms of family income, this may not be important if the decline of the male breadwinner were offset by coincident increases in female earnings and employment. However, recent research (Machin and Waldfogel, 1994) casts doubt on this by presenting evidence that the observed increases in female labour force participation have occurred in families where the husband is working. Wives of unemployed men are not much more likely to work than before. One of the problems here appears to be the high marginal tax rates faced by these women as benefit eligibility and tax liability is assessed on the strength of family rather than individual income. There has thus been an increase in the 1980s in the relative frequency of "no-earner" families.

It appears that there was a major change in the labour market opportunities available to new entrants from the mid-1970s onwards. Median wages of young (20 to 28) years olds who left school before 16 were the same in 1978 as in 1992, while wages at the 90th percentile for this group grew by 25%. Wages at the 10th percentile actually fell from £3.64 an hour in 1994 prices to £2.95. If this situation continues and as there is no evidence of returns to experience for workers located at the bottom of the distribution, it is unlikely that their wages in relative and absolute terms will improve. Workers with some form of post compulsory education continued to do well throughout the distribution over the whole period.

There may be particular reasons why we should be concerned about fall in relative and absolute wages received by this group. In the US, certain authors (eg Freeman 1992; Jencks and Mayer 1993) have linked the deterioration of labour market opportunities for young males to the huge increase in crime and ghettoisation of many US inner cities.

The increases in the wage returns to education suggest that the relative demand for skills has shifted and that, despite big increases, the relative supply of highly educated workers has not increased fast enough. It is likely therefore that policies

that encourage children to stay on at school and more people to go into further, higher and adult education are necessary to reduce the skills shortages experienced and to improve opportunities for workers at the bottom of the distribution.

The returns to the observable aspect of skill that we measure (education) is, however, by no means the full explanation as the major part of the increase occurred *within* educational groups. There must therefore be other changes, which are not observable to us in the FES data, that have significantly affected the structure of wages. These could be unobserved skill attributes of individuals or changes in pay setting institutions such as trade unions or wages councils.

The unobserved skill attributes of individuals that yield differential labour market returns could be related to changes in the quality of education, aspects of vocational training, the nature of jobs on offer in the labour market, the decline of labour market institutions or to more social factors like increased deprivation in some inner city areas. The last would be particularly worrying as it implies that the growth of no-earner families will have long term social and economic consequences.

It is very important to consider whether the widening of the earnings distribution means that individuals are now better rewarded for their observable and unobservable skills so that the labour market is "flexible" enough to create appropriate incentives to increase the supply of skilled labour. If this is the case, then the earnings distribution will not continue to widen in the long term, providing there are no significant barriers, such as liquidity constraints preventing workers improving their skills. To alleviate this, one may wish to subsidise education and training. Whether it is better to subsidise firms (tax credits for training), individuals or institutions will depend on the precise nature of the shortage of skills. And, of course the precise nature of the potential reforms of the education and training system need to be discussed. For example whether work based or school based learning systems are preferable.

If the increase in relative pay differentials is due mainly to the decline of labour market institutions like unions and minimum wages¹ and if one is concerned about the rise in dispersion and poverty, the feasibility of introducing policies such as introducing minimum wages and / or offering employment subsidies to employers should be evaluated.

In terms of informing policy it is very important to shed some light on these questions. If the rise in within-group inequality matters, then designing the appropriate policy response depends fundamentally on what is the principal driving force. Moreover, the precise nature of the reforms needs to be discussed. Further work should be done to address these important issues.

¹ This has been stressed in the United States context (see Freeman, 1994)

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