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# Centre Piece

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Inside this issue: **What moved the Beveridge curve?**



# Bubble trouble

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# It pays to be

For the first time it is possible to estimate the effect of “family-friendly” management policies on the performance of women in the workforce. Helen Gray finds evidence that employment practices allowing women to cope with family responsibilities while maintaining their presence in the workplace are effective, but that those which enable women to reduce their workplace profile may not be.



# family-friendly

2000 was the first year when girls outperformed boys at both GCSE and A-level. This pattern was repeated in 2001. The most recently available information on university degrees shows that, in 2000, 54% of women obtained either a first or upper second class degree, compared with 47% of men. At the other end of the spectrum, 18% of male undergraduates received third class or pass degrees, compared with 13% women.

The fact that women now outperform men in gaining academic qualifications leads naturally to the possibility that they may also outperform them in the workplace. However, so long as women continue to bear the main family responsibilities, or face discrimination in the workplace, the performance benefits from having a better-educated female workforce may be lost. For women, the dual burden of paid and unpaid work may convince them to leave paid work, or to work shorter paid hours. Over the longer term, this would mean that women were less likely to move into better jobs.

While there is some evidence that men now undertake a greater share of unpaid work, the 1995 British Household Panel Survey found that, where a husband and wife were both in full-time employment, the woman did nine hours a week more housework, not including childcare. For this reason, policies aimed at reducing the disadvantage that women experience in the workplace due to their responsibilities outside work might be expected to have a positive impact on performance. To date, however, there has been little research on the links between family-friendly policies and workplace performance.

At last we have some data. The Department of Trade and Industry's 1998 Workplace Employee Relations Survey (WERS98) provides information on the performance of individual workplaces and about the use of particular family-friendly practices, plus other factors likely to affect establishment performance. This means that for the first time it is possible to consider the relationship between family-friendly policies and performance using a large, nationally representative dataset, thus providing a useful complement to previous case study work. This case study evidence already suggested that certain family-friendly practices are associated with enhanced performance, but left open the question whether family-friendly policies have different outcomes in workplaces with different characteristics. Clearly, generalisations cannot be made from single cases, but evidence from a survey covering a wide range of industrial sectors and establishment sizes, such as WERS98, is able to inform this debate.

Table 1 shows that there is a big difference between the public and private sectors in terms of the availability of family-friendly policies, with the incidence of all the policies under examination here being much higher in the public sector than the private.

In addition, the table shows that there is no uniform pattern to the ratio of the incidence of individual family-friendly policies between the public and private sectors. For example, having a workplace nursery is almost six times as common in the public sector as in the private sector, while paid time-off for childcare is only one and a half times more common in the public sector. As the two sectors differ so greatly in this way, they need to be treated separately in any

**Table 1** Incidence of Family-Friendly Policies in the Public and Private Sectors

|                                                  | Proportion of workplaces with practice |               | Ratio of public sector incidence to private sector incidence |
|--------------------------------------------------|----------------------------------------|---------------|--------------------------------------------------------------|
|                                                  | Private sector                         | Public sector |                                                              |
| Parental leave                                   | 25.7                                   | 61.1          | 2.4                                                          |
| Working from home                                | 9.9                                    | 20.9          | 2.1                                                          |
| Term-time only working                           | 9.3                                    | 34.8          | 3.7                                                          |
| Switching from full-time to part-time employment | 39.3                                   | 65.3          | 1.7                                                          |
| Job-sharing                                      | 16.4                                   | 64.6          | 3.9                                                          |
| Workplace nursery                                | 1.5                                    | 8.8           | 5.9                                                          |
| Financial help with childcare                    | 3.0                                    | 6.6           | 2.2                                                          |
| Paternity leave                                  | 22.6                                   | 66.7          | 3.0                                                          |
| Paid time-off for childcare at short-notice      | 52.6                                   | 78.5          | 1.5                                                          |
| Flexi-time                                       | 13.0                                   | 32.4          | 2.5                                                          |
| 9-day fortnight                                  | 2.2                                    | 4.2           | 1.9                                                          |



## A workplace nursery is almost six times as common in the public sector as in the private sector.

analysis. Here the focus is on the private sector, due to its greater share of employment in the economy as a whole.

The issue of how performance is measured is a controversial one. Rather than ask for information on absolute levels of performance, such as profits, the WERS98 management questionnaire asked managers to rate the financial performance, labour productivity and quality of their product or service relative to the average. As might be expected, there is a tendency for managers to rate the performance of their workplace as above average. Despite this, there is evidence that managers do assess performance reasonably accurately. For example, workplaces where lower levels of performance were reported in the 1984 WERS were more likely than average to have closed down by 1990.

Managers were also asked whether labour productivity (and labour costs relative to other costs) had gone up or down, compared with five years previously, and whether there had been a change in how hard employees worked over the same period. The management questionnaire also produced data on the number of voluntary resignations and the proportion of working days lost through sickness or unauthorised absence over the previous twelve months.

Analysis of this data suggests that, allowing for the effects of specific workplace characteristics, the majority of the individual family-friendly policies examined are associated with a greater likelihood that a workplace has above average performance. However, there are a few instances of the opposite. Given that all family-friendly policies are not associated with better performance, the question is whether on average we can expect workplaces that offer the full range of family-friendly policies to perform better than those with no such policies. It is possible to address this question by calculating the probability of a workplace having above average performance for different sets of workplace characteristics. Table 2 shows that 59% of managers in workplaces with typical characteristics report above average financial performance, compared with 97% in workplaces with the full range of family-friendly policies and only 55% in workplaces with no family-friendly policies.

The results give a strong indication that workplaces which

offer the full range of family-friendly policies perform better than those that do not offer any such policies, with the typical workplace lying somewhere between the two extremes, although closer to the workplace with no family-friendly policies than to one with the full range. Employers offering family-friendly policies are better able to retain staff, have an absenteeism rate of less than 1% (compared with a national average closer to 3%) and experience above average financial performance. Labour turnover is nine times higher in workplaces without family-friendly policies. These workplaces are also less likely to have experienced increases in employee work effort, or to have been able to cut labour costs relative to other costs.

The fact that the WERS98 data is cross-sectional means that we do not know when the family-friendly policies were introduced and whether performance has changed in response to the introduction of a policy. It is possible that workplaces with better performance might be more likely to introduce family-friendly policies, as they can afford to do so, meaning that better performance leads to the introduction of family-friendly policies rather than vice versa. However, whilst an establishment with good performance may be able to afford such policies, it also has less incentive to take action than a workplace experiencing difficulties. In addition, the introduction of family-friendly policies could create dissatisfaction amongst employees without families. In an already successful firm, it would seem that there are more attractive options for rewarding employees. For example, the employer could award higher than average pay, or provide benefits available to all, rather than just to those with families.

The question still remains why certain policies are negatively associated with particular performance measures. Just as part-time working can reduce career prospects, it is possible that certain family-friendly policies have a negative effect on the careers of women employees by affecting their work-related motivation over the long term. Demotivation could result, if the use of a particular policy causes an employee to be seen as less suitable for promotion, resulting in talent being lost to the firm through a higher resignation rate or a failure to maximise labour productivity. hours, while reducing the potential conflict with family life,

**Table 2** Benchmarking for Workplaces with All or No Family-Friendly Policies

|                                        | Typical workplace | All family-friendly policies | No family-friendly policies |
|----------------------------------------|-------------------|------------------------------|-----------------------------|
| Financial performance                  | 0.59              | 0.97                         | 0.55                        |
| Labour productivity                    | 0.47              | 0.44                         | 0.43                        |
| Increase in labour productivity        | 0.81              | 1.00                         | 0.68                        |
| Employees work harder than 5 years ago | 0.80              | 1.00                         | 0.69                        |
| Quality of product or service          | 0.82              | 0.99                         | 0.74                        |
| Relative labour costs fallen           | 0.05              | 0.26                         | 0.04                        |
| Quit rate                              | 15.0              | 1.9                          | 17.1                        |
| Absenteeism rate                       | 2.6               | 0.7                          | 2.5                         |

## It is possible that certain family-friendly policies have a negative effect on the careers of women.



**Table 3** Benchmarking Comparison Based on the Possible Career Impact of Family-Friendly Policies

|                                        | Financial help with childcare, workplace nursery, flexi-time, 9-day fortnight | Job-sharing, switching to part-time employment, home working, term-time only contracts |
|----------------------------------------|-------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
| Financial performance                  | 0.95                                                                          | 0.45                                                                                   |
| Labour productivity                    | 0.49                                                                          | 0.26                                                                                   |
| Increase in labour productivity        | 1.00                                                                          | 0.83                                                                                   |
| Employees work harder than 5 years ago | 0.98                                                                          | 0.90                                                                                   |
| Quality of product or service          | 0.98                                                                          | 0.76                                                                                   |
| Relative labour costs fallen           | 0.14                                                                          | 0.21                                                                                   |
| Quit rate                              | 1.46                                                                          | 19.9                                                                                   |
| Absenteeism rate                       | 1.1                                                                           | 2.2                                                                                    |

are perhaps more likely to ensure that employees with families compete on an equal basis with their colleagues than policies which reduce their visible presence in the workplace, such as working from home, term-time only contracts, part-time work and job-sharing.

To test this hypothesis, I consider the relationship between performance and each of the two sets of family-friendly policies outlined above. Table 3 suggests that the policies thought most likely to allow employees with families to develop their careers are more closely associated with better performance than those based on offering reduced hours or reduced-visibility work. The only exception is with the change in relative labour costs.

Only 14% of workplaces with the first set of family-friendly policies are likely to have experienced a fall in relative labour costs, compared with 21% of workplaces with the "reduced visibility" policies. This suggests that the policies considered less disadvantageous in terms of career prospects impose higher labour costs on the firm. However, financial performance and labour productivity in workplaces which offer a workplace nursery, financial help with child-care, flexi-time and 9-day fortnights are twice as likely to be reported as bring above-average, compared with those for workplaces which offer job-sharing, switching from full-time to part-time employment, home working and term-time only working. The quit rate is much lower where the career-oriented policies are on offer and the absenteeism rate is also relatively low. This suggests that, even if labour costs are more likely to rise relative to other costs where these policies are offered, there are many other performance benefits for the workplace which are likely to outweigh the increase in costs.

There is also strong evidence, when controlling for a wide range of workplace characteristics, to suggest that family-friendly policies are associated with superior performance. However, it seems that there is a distinction between policies that concentrate on allowing employees to manage their work and family lives while reducing their visibility in

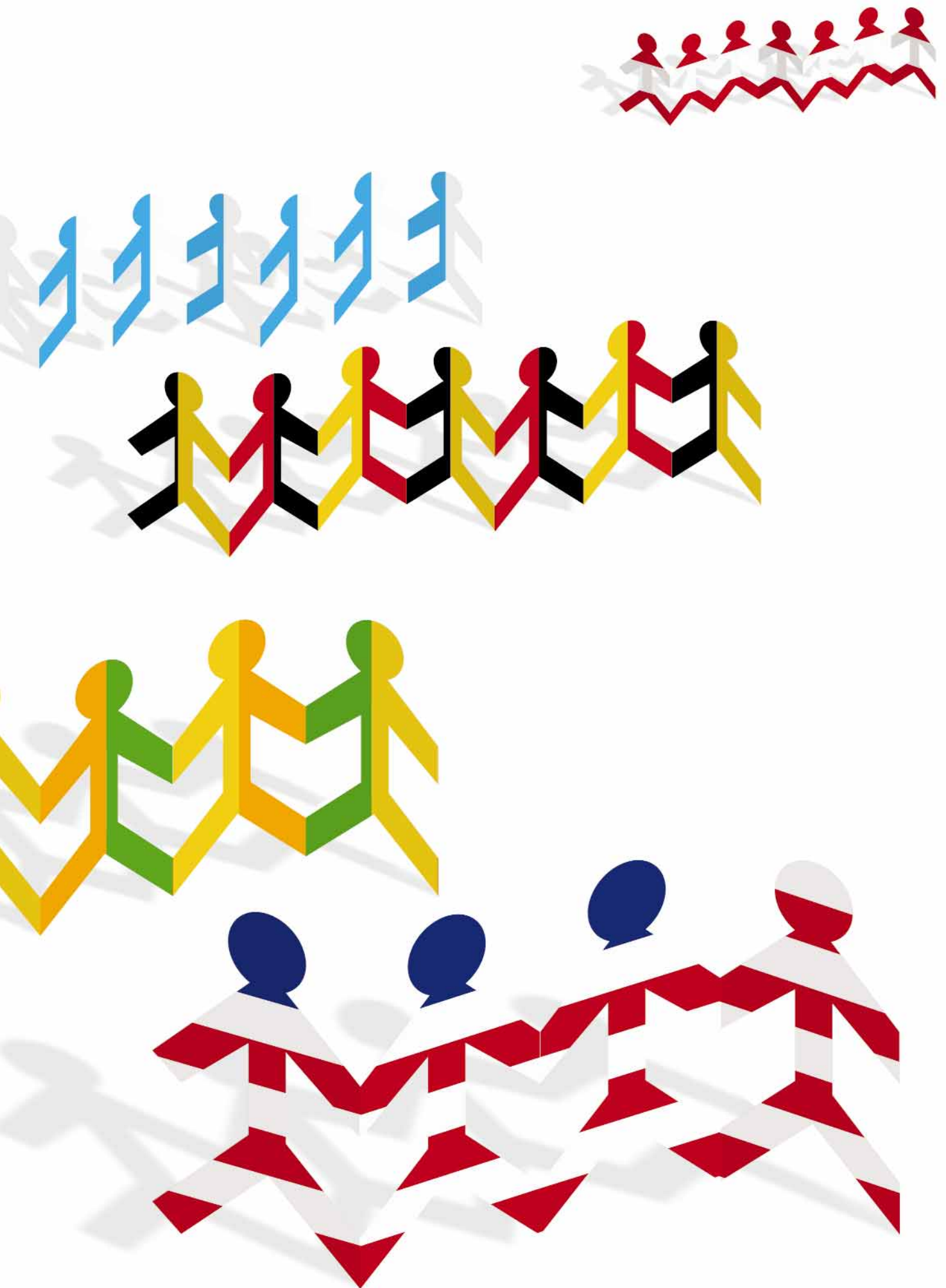
the workplace and those which are more likely to enable employees to develop their careers over the long term. This distinction is not just manifested in terms of the ability of employees to further their careers. There is evidence that workplaces in the first category experience lower levels of performance.

Even more strikingly, it seems that financial performance and labour productivity are more likely to be above average (and the quit rate lower) in workplaces where no family-friendly policies are available than in those that offer the reduced-hours or reduced-visibility options. This implies that organisations seeking to further the interests of employees, such as the Equal Opportunities Commission or trade unions, can present a stronger business case for family-friendly policies that do not reduce the visibility of employees in the workplace. There is also the additional bonus that these policies may ultimately also result on greater equity than policies associated with lower levels of performance for the employer.

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This article is based on her Working Paper "Family-Friendly Working: What a Performance!" available from the Centre for Economic Performance (Working Paper 1135).

The 1998 Workplace Employee Relations Survey is distributed by the Data Archive, University of Essex, and originates from the Department of Trade and Industry, the Economic and Social Research Council, the Advisory, Conciliation and Arbitration Service and the Policy Studies Institute.



# Why do jobless rates differ?

The Beveridge Curve plots the relationship between unemployment and job vacancies. Stephen Nickell, Luca Nunziata, Wolfgang Ochel and Glenda Quintini look at the evidence on unemployment and wages in all OECD countries from 1960 to the 1990s and conclude that changes in labour market regimes explain most of the observed shifts.

*"The main message transmitted by the Beveridge curves for France and Germany goes squarely against the cliché that high and persistent unemployment is entirely or mainly a matter of worsening functioning of the labour market. It is precisely in France and Germany that there is no sign of a major unfavourable shift of the Beveridge curve during the period of rising unemployment."*

R. Solow, 2000, p.5

*"Explanations of high unemployment based solely on institutions also run however into a major empirical problem: many of these institutions were already present when unemployment was low. ... Thus, while labour market institutions can potentially explain cross country differences today, they do not appear able to explain the general evolution of unemployment over time."*

O.Blanchard and J.Wolfers, 2000, p.C2

*"Despite conventional wisdom, high unemployment does not appear to be primarily the result of things like overly generous benefits, trade union power, taxes, or wage 'inflexibility'."*

A.Oswald, 1997, p.1

It is widely accepted that labour market rigidities are an important part of the explanation for the high levels of unemployment that are still to be found in many OECD countries. However, this view is not universally accepted and there remain serious problems, our starting quotations indicate.

Labour market rigidities cannot explain why European unemployment is so much higher than US unemployment, because the institutions generating these rigidities were much the same in the 1960s as they are today and, in the 1960s, unemployment was much higher in the United States than in Europe. Before going any further, it is worth looking at the actual numbers reported in Table 1.

This confirms that the United States indeed had the highest unemployment in the OECD in the early 1960s, but the picture today is not quite as clear-cut as is commonly thought. In fact, many of the smaller European countries have unemployment rates that are in the same ballpark as the United States, although none has reached the extraordinarily low levels ruling in the early 1960s.

**Table 1** Unemployment (Standardised Rate) %

| May/June    | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 | 1996-99 | 2000 | 2001 |
|-------------|---------|---------|---------|---------|---------|---------|------|------|
| Australia   | 2.5     | 1.9     | 4.6     | 7.7     | 8.7     | 8.7     | 6.6  | 6.9  |
| Austria     | 1.6     | 1.4     | 1.4     | 3.1     | 3.6     | 4.3     | 3.4  | 3.7  |
| Belgium     | 2.3     | 2.3     | 5.8     | 11.2    | 8.4     | 9.4     | 7.0  | 6.9  |
| Canada      | 5.5     | 4.7     | 6.9     | 9.7     | 9.5     | 8.7     | 6.8  | 7.0  |
| Denmark     | 2.2     | 1.7     | 4.1     | 7.0     | 8.1     | 5.5     | 4.7  | 4.6  |
| Finland     | 1.4     | 2.4     | 4.1     | 5.1     | 9.9     | 12.2    | 9.8  | 8.9  |
| France      | 1.5     | 2.3     | 4.3     | 8.9     | 10.5    | 11.9    | 9.5  | 8.6  |
| Germany (W) | 0.8     | 0.8     | 2.9     | 6.1     | 5.6     | 7.1     | 6.4  | 6.0  |
| Ireland     | 5.1     | 5.3     | 7.3     | 13.8    | 14.7    | 8.9     | 4.2  | 3.8  |
| Italy       | 3.5     | 4.2     | 4.5     | 6.7     | 8.1     | 10.0    | 9.0  | 8.4  |
| Japan       | 1.4     | 1.3     | 1.8     | 2.5     | 2.5     | 3.9     | 4.7  | 5.0  |
| Netherlands | 0.9     | 1.7     | 4.7     | 10.0    | 7.2     | 4.7     | 2.8  | 2.3  |
| Norway      | 2.2     | 1.7     | 1.8     | 2.4     | 5.2     | 3.9     | 3.5  | –    |
| New Zealand | 0.0     | 0.3     | 0.7     | 4.7     | 8.1     | 6.8     | 6.0  | –    |
| Portugal    | 2.3     | 2.5     | 5.5     | 7.8     | 5.4     | 5.9     | 4.2  | 3.9  |
| Spain       | 2.4     | 2.7     | 4.9     | 17.6    | 19.6    | 19.4    | 14.1 | 12.9 |
| Sweden      | 1.2     | 1.6     | 1.6     | 2.3     | 5.1     | 8.7     | 5.9  | 5.0  |
| Switzerland | 0.2     | 0.0     | 0.8     | 1.8     | 2.8     | 3.7     | 2.6  | –    |
| UK          | 2.6     | 3.1     | 4.8     | 10.5    | 8.8     | 6.9     | 5.4  | 5.0  |
| USA         | 5.5     | 4.3     | 6.4     | 7.6     | 6.1     | 4.8     | 4.0  | 4.4  |

**Notes** As far as possible, these numbers correspond to the OECD standardised rates and conform to the ILO definition. The exception here is Italy, where we use the US Bureau of Labor Statistics "unemployment rates on US concepts". With the exception of Italy, these rates are similar to the OECD standardised rates. For earlier years we use the data reported in Layard et al. (1991), Table A3. For later years we use OECD Employment Outlook (2000) and UK Employment Trends, published by the UK Department of Education and Employment.

Our aim is to see how far it is possible to defend the proposition that the dramatic long term shifts in unemployment seen in the OECD countries over the period from the 1960s to the 1990s can be explained simply by changes in labour market institutions in the same period. The institutions concerned will be the usual suspects: generous benefits, trade union power, taxes and wage "inflexibility". Our strategy is very straightforward. We analyse shifts in the Beveridge Curve, real wages and unemployment over time and explain these shifts by institutional changes and macro-economic shocks. We focus on the times series variation in

the data and eschew the extensive use of interactions.

Are we successful in our main aim? We feel that we probably deserve a B grade. The story that emerges is reasonably consistent, but not totally decisive. Experts on individual countries would probably feel that we had not produced wholly persuasive explanations of the unemployment shifts in each country and we make no attempt to provide a country-by-country story.

There are innumerable detailed theories of unemployment in the long run. These may be divided into two broad groups: those based on flow models and those based on stock models. Fundamentally, all the models have the same broad implications. First, unemployment in the short and in the long run is determined by real demand. Second, over the long term, real demand and unemployment generally tend towards the level consistent with stable inflation. This we term the equilibrium level. Third, the equilibrium level of unemployment is affected both by any variable which influences the ease with which unemployed individuals can be matched to available job vacancies and also by any variable which tends to raise wages in a direct fashion despite



excess supply in the labour market. There may be variables common to both sets. Finally, both groups of variables will tend to impact on real wages in the same direction as they influence equilibrium unemployment, because equilibrium labour demand, which is negatively related to wages, has to move in the opposite direction to equilibrium unemployment.

It is worth noting that the first group of variables mentioned above will tend to impact on the position of the Beveridge Curve, whereas the second will not do so in any direct fashion. However, this division is not quite as clear-cut as it might appear at first sight. What we can say, nevertheless, is that any variable that shifts the Beveridge Curve to the right will increase equilibrium unemployment. So a shift of the Beveridge Curve is a sufficient but not necessary sign that equilibrium unemployment has changed.

We turn now to consider a series of variables that we might expect to influence equilibrium unemployment, either because of their impact on the effectiveness with which the unemployed are matched to available jobs or because of their direct effect on wages. The unemployment benefit system directly affects the readiness of the unemployed to fill vacancies. Important aspects of the system are clearly the level of benefits, their coverage, the length of time for which they are available and the strictness with which the system is operated. Related to unemployment benefits is the availability of other resources to those without jobs. Employment protection laws may tend to make firms more cautious about filling vacancies, which would slow the speed at which the unemployed move into work. This obviously reduces the efficiency of job matching.

However, the mechanism here is not clear-cut. For example, the introduction of employment laws often leads to an increased professionalisation of the personnel function within firms, as was the case in Britain in the 1970s. This can increase the efficiency of job matching. So, in terms of outflows from unemployment, the impact of employment protection laws can go either way. By contrast, it seems clear that such laws will tend to reduce involuntary separations and hence lower the flows into unemployment. So the overall impact on the Beveridge Curve is an empirical question. Furthermore, employment law may also have a direct impact on pay, since it raises the job security of existing employees, encouraging them to demand higher pay increases.

Anything that makes it easier to match the unemployed to the available vacancies will shift the Beveridge Curve to the left and reduce equilibrium unemployment. Factors which operate in this way include the reduction of barriers to mobility, which may be geographical or occupational. Furthermore, numerous government policies are concerned to increase the ability and willingness of the unemployed to take jobs. These are grouped under the heading of active labour market policies (ALMP).

The obvious place to start is the institutional structure of

wage determination. Within every country there is a variety of structures. In some sectors wages are determined more of less competitively, but in others wages are bargained between employers and trade unions at the level of the establishment, firm or even industry. The overall outcome depends on union power in wage bargains, union coverage and the degree of co-ordination of wage bargains. Generally, greater union power and coverage can be expected to exert upward pressure on wages, hence raising equilibrium unemployment, but this can be offset if union wage setting across the economy is co-ordinated.

Superficially, it may be argued that wage setting institutions impact directly on wages without influencing the efficiency of job matching or the separation rate into unemployment: ie without influencing the position of the Beveridge Curve. However, if we use a model of the Beveridge Curve that endogenises the rate of separation into unemployment or the rate of job destruction, this no longer applies. For example, if union power raises the share of the matching surplus going to wages, this will tend to raise the rate of job destruction and shift the Beveridge Curve to the right. The same thing will also happen, if factors such as the co-ordination of wage bargaining reduce the extent to which wages can fluctuate to offset idiosyncratic shocks and stabilise employment at the firm level. So, while co-ordination can reduce overall wage pressure, which tends to lower equilibrium unemployment, it may raise the rate of idiosyncratic job shifts, which will tend to shift the Beveridge Curve to the right and have an offsetting effect.

The final group of variables that directly impacts on wages falls under the heading of real wage resistance. The idea here is that workers attempt to sustain recent rates of real wage growth when the rate consistent with stable employment shifts unexpectedly. For example, if there is an adverse shift in the terms of trade, real consumption wages must fall if employment is not to decline. If workers persist in attempting to bargain for rates of real wage growth, which take no account of the movement in the terms of trade, this will tend to raise unemployment. Exactly the same argument applies if there is an unexpected fall in trend productivity growth (TPG), or an increase in labour taxes. For example, if labour taxes (payroll tax rates plus income tax rates plus consumption tax rates) go up, the real post-tax consumption wage must fall, if real labour costs per





employee are not to rise. Any resistance to this fall will lead to a rise in unemployment. This argument suggests that increases in real import prices, falls in trend productivity growth, or rises in the labour tax rate may lead to a temporary increase in unemployment.

However, some argue that these effects can be permanent. For example, Mortensen and Pissarides (1999) use their standard flow model of equilibrium unemployment to analyse various economic policies, including changes in payroll taxes. And they find enormous effects. For example, in one simulation, with a benefit replacement ratio of 0.4, a rise in the payroll tax rate from 15 to 25% is enough to raise equilibrium unemployment permanently by over 6 percentage points. The reason why labour taxes have a big impact in this case is because Mortensen and Pissarides introduce into their model a value of leisure, which is independent of the consumption wage. This fixing of an important element of the individual reservation wage implies that labour supply and willingness to work will increase permanently, if the real consumption wage goes up. This will induce permanent reductions in equilibrium unemployment, if labour taxes fall or productivity rises. Ultimately this is an empirical question; but it may be argued that, in a satisfactory model, the value of leisure and the individual reservation wage more generally should, in the long run, move proportionally to the consumption wage and the general level of productivity. If this adjustment is made in the Mortensen and Pissarides model, the impact of payroll taxes on equilibrium unemployment disappears.

Our purpose is to investigate the effect of changes in labour market "institutions" on the Beveridge Curve, real wages and equilibrium unemployment in the OECD from the 1960s to the 1990s. In order to undertake this task, we require long time series for the appropriate countries. What information do we possess and what are the gaps?

There are four aspects of the unemployment benefit system for which there are good theoretical and empirical reasons to believe that they will influence equilibrium unemployment. These are, in turn: the level of benefits, the duration of entitlement, the coverage of the system and the strictness with which the system is operated. Of these, only the first two are

available as time series for the OECD countries. The OECD has collected systematic data on the unemployment benefit replacement ratio for three different family types (single, with dependent spouse, with spouse at work) in three different duration categories (1st year, 2nd and 3rd years, 4th and 5th years) from 1961 to 1995 (every other year). A summary of these data is presented in Tables 2 and 3.

It is unfortunate that we have no comprehensive time series data on the coverage of the system or on the strictness with which it is administered. This is particularly true for "strictness", because the evidence we possess appears to indicate that this is of crucial importance in determining the extent to which a generous level of benefit will actually influence unemployment. For example, Denmark, which has very generous unemployment benefits, totally reformed the operation of its benefit system through the 1990s with a view to tightening the criteria for benefit receipt and the enforcement of these criteria via a comprehensive system of sanctions. The Danish Ministry of Labour is convinced that this process has played a major role in allowing Danish unemployment to fall dramatically since the early 1990s without generating inflationary pressure.

A further aspect of the structure of the benefit system for which we do not have detailed data back to the 1960s is those policies grouped under the heading of active labour market policies (ALMP). The purpose of these is to provide active assistance to the unemployed to improve their chances of obtaining work. Multi-country studies indicate that ALMPs do reduce unemployment. This broad-brush evidence is backed up by numbers of micro-econometric studies, also showing that, under some circumstances, active labour market policies are effective. In particular, job search assistance tends to have consistently positive outcomes, but other types of measure such as employment subsidies and labour market training must be well designed, if they are to have a significant impact.

In most OECD countries, the majority of workers have their wages set by collective bargaining between employers and trade unions at the plant, firm, industry or aggregate level. This is important for our purposes because there is some evidence that trade union power in wage setting has a significant impact on unemployment. Unfortunately, we do not have complete data on collective bargaining coverage (the proportion of employees covered by collective agreements), but the data presented in Table 4 give a reasonable picture. Across most of Continental Europe, including Scandinavia but excluding Switzerland, coverage is both high and stable. This is either because most people belong to trade unions, or because union agreements are extended by law to cover non-members in the same sector. In Switzerland and in the OECD countries outside Continental Europe and Scandinavia, coverage is generally much lower, with the exception of Australia. In the UK, the US and New Zealand coverage has declined with the fall in union density, there being no extension laws in place to compensate.

**Table 2** Unemployment Benefit Replacement Ratios  
1960-95

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 |
|-------------|---------|---------|---------|---------|---------|
| Australia   | 0.18    | 0.15    | 0.23    | 0.23    | 0.26    |
| Austria     | 0.15    | 0.17    | 0.30    | 0.34    | 0.34    |
| Belgium     | 0.37    | 0.40    | 0.55    | 0.50    | 0.48    |
| Canada      | 0.39    | 0.43    | 0.59    | 0.57    | 0.58    |
| Denmark     | 0.25    | 0.35    | 0.55    | 0.67    | 0.64    |
| Finland     | 0.13    | 0.18    | 0.29    | 0.38    | 0.53    |
| France      | 0.48    | 0.51    | 0.56    | 0.61    | 0.58    |
| Germany (W) | 0.43    | 0.41    | 0.39    | 0.38    | 0.37    |
| Ireland     | 0.21    | 0.24    | 0.44    | 0.50    | 0.40    |
| Italy       | 0.09    | 0.06    | 0.04    | 0.02    | 0.26    |
| Japan       | 0.36    | 0.38    | 0.31    | 0.29    | 0.30    |
| Netherlands | 0.39    | 0.64    | 0.65    | 0.67    | 0.70    |
| Norway      | 0.12    | 0.13    | 0.28    | 0.56    | 0.62    |
| New Zealand | 0.37    | 0.30    | 0.27    | 0.30    | 0.29    |
| Portugal    | –       | –       | 0.17    | 0.44    | 0.65    |
| Spain       | 0.35    | 0.48    | 0.62    | 0.75    | 0.68    |
| Sweden      | 0.11    | 0.16    | 0.57    | 0.70    | 0.72    |
| Switzerland | 0.04    | 0.02    | 0.21    | 0.48    | 0.61    |
| UK          | 0.27    | 0.36    | 0.34    | 0.26    | 0.22    |
| US          | 0.22    | 0.23    | 0.28    | 0.30    | 0.26    |

Source OECD. Based on the replacement ratio in the first year of an unemployment spell averaged over three family types. See OECD (1994), Table 8.1 for an example.

**Table 3** Unemployment Benefit Duration Index  
1960-95

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 |
|-------------|---------|---------|---------|---------|---------|
| Australia   | 1.02    | 1.02    | 1.02    | 1.02    | 1.02    |
| Austria     | 0       | 0       | 0.69    | 0.75    | 0.74    |
| Belgium     | 1.0     | 0.96    | 0.78    | 0.79    | 0.77    |
| Canada      | 0.33    | 0.31    | 0.20    | 0.25    | 0.22    |
| Denmark     | 0.63    | 0.66    | 0.66    | 0.62    | 0.84    |
| Finland     | 0       | 0.14    | 0.72    | 0.61    | 0.53    |
| France      | 0.28    | 0.23    | 0.19    | 0.37    | 0.49    |
| Germany     | 0.57    | 0.57    | 0.61    | 0.61    | 0.61    |
| Ireland     | 0.68    | 0.78    | 0.39    | 0.40    | 0.39    |
| Italy       | 0       | 0       | 0       | 0       | 0.13    |
| Japan       | 0       | 0       | 0       | 0       | 0       |
| Netherlands | 0.12    | 0.35    | 0.53    | 0.66    | 0.57    |
| Norway      | 0       | 0.07    | 0.45    | 0.49    | 0.50    |
| New Zealand | 1.02    | 1.02    | 1.02    | 1.04    | 1.04    |
| Portugal    | –       | –       | 0       | 0.11    | 0.35    |
| Spain       | 0       | 0       | 0.01    | 0.21    | 0.27    |
| Sweden      | 0       | 0       | 0.04    | 0.05    | 0.04    |
| Switzerland | 0       | 0       | 0       | 0       | 0.18    |
| UK          | 0.87    | 0.59    | 0.54    | 0.71    | 0.70    |
| US          | 0.12    | 0.17    | 0.19    | 0.17    | 0.18    |

Source OECD. Based on  $[0.06 \text{ (replacement ratio in 2nd and 3rd years of a spell)} + 0.04 \text{ (replacement ratio in 4th and 5th year of a spell)}] \div \text{(replacement ratio in 1st year of a spell)}$ .

**Table 4** Collective bargaining coverage (%)

| Country        | 1960 | 1965 | 1970 | 1975 | 1980 | 1985 | 1990 | 1994 | 1997 | 1999 |
|----------------|------|------|------|------|------|------|------|------|------|------|
| Austria        | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 99   | 99   | –    | –    |
| Belgium        | 80   | 80   | 80   | 85   | 90   | 90   | 90   | 90   | –    | –    |
| Denmark        | 67   | 68   | 68   | 70   | 72   | 74   | 69   | 69   | –    | –    |
| Finland        | 95   | 95   | 95   | 95   | 95   | 95   | 95   | 95   | –    | –    |
| France         | n.a. | n.a. | n.a. | n.a. | 85   | n.a. | 92   | 95   | 97   | –    |
| Germany        | 90   | 90   | 90   | 90   | 91   | 90   | 90   | 92   | –    | –    |
| Ireland        | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | –    | –    |
| Italy          | 91   | 90   | 88   | 85   | 85   | 85   | 83   | 82   | –    | –    |
| Netherlands    | 100  | n.a. | n.a. | n.a. | 76   | 80   | n.a. | 85   | –    | –    |
| Norway         | 65   | 65   | 65   | 65   | 70   | 70   | 70   | 70   | –    | –    |
| Portugal       | n.a. | n.a. | n.a. | n.a. | 70   | n.a. | 79   | 71   | –    | –    |
| Spain          | n.a. | n.a. | n.a. | n.a. | 68   | 70   | 76   | 78   | –    | –    |
| Sweden         | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 86   | 89   | –    | –    |
| Switzerland    | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 53   | 53   | –    | –    |
| United Kingdom | 67   | 67   | 68   | 72   | 70   | 64   | 54   | 40   | 36   | –    |
| Canada         | 35   | 33   | 36   | 39   | 40   | 39   | 38   | 36   | –    | –    |
| United States  | 29   | 27   | 27   | 24   | 21   | 21   | 18   | 17   | –    | 15   |
| Japan          | n.a. | n.a. | n.a. | n.a. | 28   | n.a. | 23   | 21   | –    | –    |
| Australia      | 85   | 85   | 85   | 85   | 85   | 85   | 80   | 80   | –    | –    |
| New Zealand    | n.a. | n.a. | n.a. | n.a. | n.a. | n.a. | 67   | 31   | –    | –    |

These data were collected by W. Ochel from specific country experts. We are grateful for all their assistance. Further details may be found in Ochel (2000).

**Table 5** Union Density (%)

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 | Extension laws<br>in place (a) |
|-------------|---------|---------|---------|---------|---------|--------------------------------|
| Australia   | 48      | 45      | 49      | 49      | 43      | ✓                              |
| Austria     | 59      | 57      | 52      | 51      | 45      | ✓                              |
| Belgium     | 40      | 42      | 52      | 52      | 52      | ✓                              |
| Canada      | 27      | 29      | 35      | 37      | 36      | ✗                              |
| Denmark     | 60      | 61      | 71      | 79      | 76      | ✗                              |
| Finland     | 35      | 47      | 66      | 69      | 76      | ✓                              |
| France      | 20      | 21      | 21      | 16      | 10      | ✓                              |
| Germany (W) | 34      | 32      | 35      | 34      | 31      | ✓                              |
| Ireland     | 47      | 51      | 56      | 56      | 51      | ✗                              |
| Italy       | 25      | 32      | 48      | 45      | 40      | ✓                              |
| Japan       | 33      | 33      | 30      | 27      | 24      | ✗                              |
| Netherlands | 41      | 38      | 37      | 30      | 24      | ✓                              |
| Norway      | 52      | 51      | 52      | 55      | 56      | ✗                              |
| New Zealand | 36      | 35      | 38      | 37      | 35      | ✗                              |
| Portugal    | 61      | 61      | 61      | 57      | 34      | ✓                              |
| Spain       | 9       | 9       | 9       | 11      | 16      | ✓                              |
| Sweden      | 64      | 66      | 76      | 83      | 84      | ✗                              |
| Switzerland | 35      | 32      | 32      | 29      | 25      | ✓(b)                           |
| UK          | 44      | 47      | 55      | 53      | 42      | ✗                              |
| USA         | 27      | 26      | 25      | 20      | 16      | ✗                              |

**Notes**

(i) Union density = union members as a percentage of employees. In both Spain and Portugal, union membership in the 1960s and 1970s does not have the same implications as elsewhere because there was pervasive government intervention in wage determination during most of this period.

(ii) (a) Effectively, bargained wages extended to non-union firms typically at the behest of one party to the bargain.

(b) Extension only at the behest of both parties to a bargain.

See OECD. For details, see OECD (1994), Table 5.11.

In Table 5, we present the percentage of employees who are union members. Across most of Scandinavia, membership tends to be high. By contrast, in much of Continental Europe and in Australia, union density tends to be less than 50% and is gradually declining. In these countries there is, consequently, a wide and widening gap between density and coverage, which it is the job of the extension laws to fill. This situation is at its most stark in France, which has the lowest union density in the OECD at around 10%, but one of the highest levels of coverage (around 95%). Outside these regions, both density and coverage tend to

be relatively low and both are declining at greater or lesser rates. The absence of complete coverage data means that we have to rely on the density variable to capture the impact of unionisation on unemployment. As should be clear, this is only half the story, so we must treat any results we find in this area with some caution.

The other aspect of wage bargaining which appears to have a significant impact on wages and unemployment is the extent to which bargaining is co-ordinated. Roughly speaking, the evidence suggests that, if bargaining is highly co-ordinated, this will completely offset the adverse effects of unionism on employment. Co-ordination refers to mechanisms whereby the aggregate employment implications of wage determination are taken into account when wage bargains are struck. This may be achieved if wage bargaining is highly centralised, as in Austria, or if there are institutions, such as employers' federations, which can assist bargainers to act in concert, even when bargaining itself ostensibly occurs at the level of the firm or industry, as in Germany or Japan.

It is worth noting that co-ordination is not, therefore, the



**Table 6** Co-ordination Indices (Range 1-3)

|             | 1960-64 |      | 1965-72 |      | 1973-79 |      | 1980-87 |      | 1988-95 |      |
|-------------|---------|------|---------|------|---------|------|---------|------|---------|------|
|             | 1       | 2    | 1       | 2    | 1       | 2    | 1       | 2    | 1       | 2    |
| Australia   | 2.25    | 2    | 2.25    | 2    | 2.25    | 2.36 | 2.25    | 2.31 | 1.92    | 1.63 |
| Austria     | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.42 |
| Belgium     | 2       | 2    | 2       | 2    | 2       | 2.1  | 2       | 2.55 | 2       | 2    |
| Canada      | 1       | 1    | 1       | 1    | 1       | 1.63 | 1       | 1.08 | 1       | 1    |
| Denmark     | 2.5     | 3    | 2.5     | 3    | 2.5     | 2.96 | 2.4     | 2.54 | 2.26    | 2.42 |
| Finland     | 2.25    | 1.5  | 2.25    | 1.69 | 2.25    | 2    | 2.25    | 2    | 2.25    | 2.38 |
| France      | 1.75    | 2    | 1.75    | 2    | 1.75    | 2    | 1.84    | 2    | 1.98    | 1.92 |
| Germany (W) | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  |
| Ireland     | 2       | 2    | 2       | 2.38 | 2       | 2.91 | 2       | 2.08 | 3       | 2.75 |
| Italy       | 1.5     | 1.94 | 1.5     | 1.73 | 1.5     | 2    | 1.5     | 1.81 | 1.4     | 1.95 |
| Japan       | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  | 3       | 2.5  |
| Netherlands | 2       | 3    | 2       | 2.56 | 2       | 2    | 2       | 2.38 | 2       | 3    |
| Norway      | 2.5     | 3    | 2.5     | 3    | 2.5     | 2.96 | 2.5     | 2.72 | 2.5     | 2.84 |
| New Zealand | 1.5     | 2.5  | 1.5     | 2.5  | 1.5     | 2.5  | 1.32    | 2.32 | 1       | 1.25 |
| Portugal    | 1.75    | 3    | 1.75    | 3    | 1.75    | 2.56 | 1.84    | 1.58 | 2       | 1.88 |
| Spain       | 2       | 3    | 2       | 3    | 2       | 2.64 | 2       | 2.3  | 2       | 2    |
| Sweden      | 2.5     | 3    | 2.5     | 3    | 2.5     | 3    | 2.41    | 2.53 | 2.15    | 1.94 |
| Switzerland | 2.25    | 2    | 2.25    | 2    | 2.25    | 2    | 2.25    | 2    | 2.25    | 1.63 |
| UK          | 1.5     | 1.56 | 1.5     | 1.77 | 1.5     | 1.77 | 1.41    | 1.08 | 1.15    | 1    |
| US          | 1       | 1    | 1       | 1    | 1       | 1    | 1       | 1    | 1       | 1    |

**Notes** The first series (1) only moves in response to major changes; the second series (2) attempts to capture all the nuances. Co-ordination 1 was provided by Michèle Belot to whom much thanks (see Belot and van Ours, 2000, for details). Co-ordination 2 is the work of W. Ochel. Co-ordination 1 appears in all the subsequent regressions.

same as centralisation, which refers simply to the level at which bargaining takes place (plant, firm, industry or economy-wide). In Table 6, we present co-ordination indices for the OECD from the 1960s. The first index (co-ord 1) basically ignores transient changes, whereas the second (co-ord 2) tries to capture the various detailed nuances of the variations in the institutional structure. Notable changes are the increases in co-ordination in Ireland and the Netherlands towards the end of the period and the declines in co-ordination in Australia, New Zealand and Sweden. Co-ordination also declines in the UK over the same period, but this simply reflects the sharp decline of unionism overall.

Employment protection laws are thought by many to be a key factor in generating labour market inflexibility. Despite this, evidence that they have a decisive impact on overall rates of unemployment is mixed, at best. In Table 7, we present details of an employment protection index for the OECD countries. Features to note are the wide variation in the index across countries and the fact that, in some countries, the basic legislation was not introduced until the 1970s.

In looking for the impact of taxes on employment, the important ones are those that form part of the wedge between the real product wage (labour costs per employee normalised on the output price) and the real consumption wage (after-tax pay normalised on the consumer price index). These are payroll taxes, income taxes and consumption taxes. Their combined impact on unemployment remains a subject of some debate, despite the large number of empirical investigations. Indeed some studies indicate that employment taxes have no long run impact whatever on unemployment, whereas others present results which imply that they can explain more or less all the rise in unemployment in most countries during the 1960-1985 period. In Table 8 we present the total tax rate on labour for the OECD countries. All countries exhibit a substantial increase over the period from the 1960s to the 1990s, although there are wide variations across countries. These mainly reflect the extent to which health, higher education and pensions are publicly provided, along with the all-round generosity of the social security system.

Oswald (1997) proposes that barriers to geographical mobility, as reflected in the rate of owner occupation of the

**Table 7** Employment Protection (Index, 0-2)

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 |
|-------------|---------|---------|---------|---------|---------|
| Australia   | 0.50    | 0.50    | 0.50    | 0.50    | 0.50    |
| Austria     | 0.65    | 0.65    | 0.84    | 1.27    | 1.30    |
| Belgium     | 0.72    | 1.24    | 1.55    | 1.55    | 1.35    |
| Canada      | 0.30    | 0.30    | 0.30    | 0.30    | 0.30    |
| Denmark     | 0.90    | 0.98    | 1.10    | 1.10    | 0.90    |
| Finland     | 1.20    | 1.20    | 1.20    | 1.20    | 1.13    |
| France      | 0.37    | 0.68    | 1.21    | 1.30    | 1.41    |
| Germany (W) | 0.45    | 1.05    | 1.65    | 1.65    | 1.52    |
| Ireland     | 0.02    | 0.19    | 0.45    | 0.50    | 0.52    |
| Italy       | 1.92    | 1.99    | 2.00    | 2.00    | 1.89    |
| Japan       | 1.40    | 1.40    | 1.40    | 1.40    | 1.40    |
| Netherlands | 1.35    | 1.35    | 1.35    | 1.35    | 1.28    |
| Norway      | 1.55    | 1.55    | 1.55    | 1.55    | 1.46    |
| New Zealand | 0.80    | 0.80    | 0.80    | 0.80    | 0.80    |
| Portugal    | 0.00    | 0.43    | 1.59    | 1.94    | 1.93    |
| Spain       | 2.00    | 2.00    | 1.99    | 1.91    | 1.74    |
| Sweden      | 0.00    | 0.23    | 1.46    | 1.80    | 1.53    |
| Switzerland | 0.55    | 0.55    | 0.55    | 0.55    | 0.55    |
| UK          | 0.16    | 0.21    | 0.33    | 0.35    | 0.35    |
| USA         | 0.10    | 0.10    | 0.10    | 0.10    | 0.10    |

**Note** These data are based on an interpolation of the variable used by Blanchard and Wolfers (2000), to whom we are most grateful. This variable is based on the series used by Lazear (1990) and that provided by the OECD for the late 1980s and 1990s. Since the Lazear index and the OECD index are not strictly comparable, the overall series is not completely reliable.

housing stock, also play a key role in determining unemployment. He finds that changes in unemployment are positively correlated with changes in owner occupation rates across countries, US states and UK regions. He also presents UK evidence that owner occupation represents a significant mobility barrier relative to private renting. However, Gregg et al. (2000) find that, while unemployment is significantly negatively related to unemployment both across UK regions and across time, in a regional fixed effects model this relationship becomes significantly positive once other relevant regional characteristics are included. We include

**Table 8** Total Taxes on Labour  
Payroll Tax Rate plus Income Tax Rate plus  
Consumption Tax Rate  
Total Tax Rate (%)

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 |
|-------------|---------|---------|---------|---------|---------|
| Australia   | 28      | 31      | 36      | 39      | –       |
| Austria     | 47      | 52      | 55      | 58      | 59      |
| Belgium     | 38      | 43      | 44      | 46      | 50      |
| Canada      | 31      | 39      | 41      | 42      | 50      |
| Denmark     | 32      | 46      | 53      | 59      | 60      |
| Finland     | 38      | 46      | 55      | 58      | 64      |
| France      | 55      | 57      | 60      | 64      | 67      |
| Germany (W) | 42      | 44      | 48      | 50      | 52      |
| Ireland     | 23      | 30      | 30      | 37      | 41      |
| Italy       | 57      | 56      | 54      | 56      | 67      |
| Japan       | 25      | 25      | 26      | 32      | 33      |
| Netherlands | 45      | 54      | 57      | 55      | 47      |
| Norway      | –       | 52      | 61      | 65      | 61      |
| New Zealand | –       | –       | 29      | 30      | –       |
| Portugal    | 20      | 25      | 26      | 33      | 40      |
| Spain       | 19      | 23      | 29      | 40      | 46      |
| Sweden      | 41      | 54      | 68      | 77      | 78      |
| Switzerland | 30      | 31      | 35      | 36      | 35      |
| UK          | 34      | 43      | 45      | 51      | 47      |
| USA         | 34      | 37      | 42      | 44      | 45      |

**Note** These data are based on the Centre for Economic Performance/ OECD dataset.

owner occupation as a variable in our investigation and the data are shown in Table 9. It must, however, be born in mind that these data are heavily interpolated, so the results should be treated with caution.

In seeking to explain the different patterns of unemployment exhibited across the OECD in the period from the 1960s to the 1990s, our approach is to see how far we can get with a very simple empirical model. We have already discussed those factors that can be expected to influence equilibrium unemployment in the long run. Since we are, in practice, going to explain actual unemployment, we must also include in our model those factors that might explain the short-run deviations of unemployment from its equilibrium level. These factors include aggregate demand shocks, productivity shocks and wage shocks.

Some further specific points are worth noting. The first of these is the role of productivity shocks and real import shocks in capturing real wage resistance. As we have productivity), if real consumption wages do not adjust appropriately. Second, we include the real interest rate because some have accorded it a significant role in the

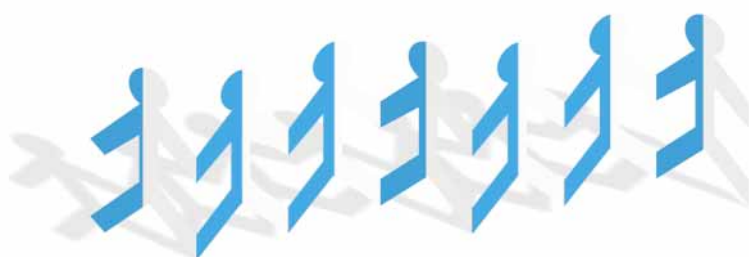


**Table 9** Mobility: Owner Occupation (%)

|             | 1960-64 | 1965-72 | 1973-79 | 1980-87 | 1988-95 |
|-------------|---------|---------|---------|---------|---------|
| Australia   | 64      | 66      | 69      | 71      | 70      |
| Austria     | 39      | 41      | 45      | 50      | 55      |
| Belgium     | 51      | 54      | 57      | 60      | 62      |
| Canada      | 65      | 61      | 61      | 62      | 61      |
| Denmark     | 44      | 48      | 51      | 52      | 51      |
| Finland     | 57      | 59      | 60      | 63      | 67      |
| France      | 42      | 44      | 49      | 52      | 54      |
| Germany (W) | 30      | 35      | 38      | 39      | 38      |
| Ireland     | 62      | 69      | 74      | 77      | 78      |
| Italy       | 46      | 49      | 55      | 62      | 67      |
| Japan       | 69      | 61      | 61      | 62      | 61      |
| Netherlands | 30      | 34      | 39      | 43      | 44      |
| Norway      | 53      | 53      | 57      | 59      | 59      |
| New Zealand | 69      | 68      | 69      | 70      | 71      |
| Portugal    | –       | –       | –       | –       | –       |
| Spain       | 54      | 62      | 69      | 75      | 78      |
| Sweden      | 36      | 35      | 39      | 41      | 42      |
| Switzerland | 33      | 29      | 29      | 30      | 30      |
| UK          | 43      | 48      | 53      | 60      | 68      |
| USA         | 64      | 65      | 67      | 67      | 64      |

**Note** These numbers are based on data supplied by Andrew Oswald to whom we are most grateful. For most countries, the original data are generated by the Population Census, which takes place relatively infrequently. They are then linearly interpolated.

determination of unemployment even in the long run. Third, we are not simply going to look at unemployment, but shall also try to explain real product wages (real labour costs) and shifts in the Beveridge Curve in order to see if we can obtain a consistent picture.

For those who are interested, the details of the equations we have used can be found via <http://cep.lse.ac.uk/papers/abstractquery.asp?type=502>. Here we shall confine ourselves to a summary of our findings.

Two points stand out. First, for every country except Norway and Sweden, the Beveridge Curve shifted to the right from the 1960s to the mid-1980s. Of course, the distance moved varied from country to country, but the movement is clear in all cases. Second, after the mid-1980s, the countries fall into two groups: those for which the Beveridge Curve carries on moving to the right with no serious hint of a turnaround and those for which it starts moving back to the left. The first group definitely includes Belgium, Finland, France, Germany, Japan, Norway, Spain, Sweden and Switzerland. (The movement in Belgium, France and Germany is particu-

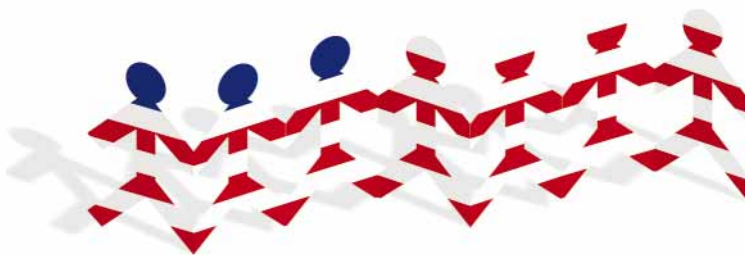


larly clear in the sense that both vacancies and unemployment were higher in the late 1990s' boom than in the late 1980s' boom and were higher in the late 1980s' boom than in the late 1970s' boom.) The second group definitely includes Canada, Denmark, Netherlands, the UK and the US. Australia, Austria, New Zealand and Portugal are harder to place, although all are probably showing some recent improvement (leftward move).

These reasonably clear-cut movements in the Beveridge Curve provide evidence that some factors of the type discussed have raised equilibrium unemployment in most countries over the period from the 1960s to the mid-1980s and that, from then on, they have caused a fall back in some of these countries and a continuing rise in others.

As an explanation of inflow rate into unemployment, it is notable that the impact of the owner occupation rate (i.e. mobility barriers) is only weakly positive, whereas that of employment protection is, as expected, negative. Of the variables that directly impact on wage determination, union density turns out to be strongly positive. This is consistent with the role of union power in the Mortensen and Pissarides (1994) model, where unions raise the destruction rate by increasing the share of the matching surplus going to wages.

Combining the Beveridge Curve and inflow rate equation, we found that, once we include the impact of these variables on the inflow rate the duration of benefits, union density and owner occupation all tend to shift the Beveridge Curve to the right, whereas stricter employment protection





shifted it to the left. These should translate directly into effects on equilibrium unemployment. However, we should bear in mind that variables such as union density, co-ordination and employment protection may also have a direct effect on wages and hence further effects on equilibrium unemployment. Indeed, we might expect employment protection to impact on unemployment via its direct wage effect in the opposite direction to the Beveridge Curve effects. So our next step was to go directly to the impact of our variables on unemployment and wages.

The idea here is to add to the overall picture by seeing if the impact of the institutions on real wages is consistent with their impact on unemployment. Broadly speaking, the institution variables can influence wages directly by raising the bargaining power of workers, or they can operate by modifying the effect of unemployment on wages. For example, trade unions may reduce the impact of unemployment on wages by insulating the existing work force from the rigours of the external labour market. Either raising wages directly or reducing the (absolute) value of the unemployment coefficient will lead to an increase in equilibrium unemployment. Furthermore, it is worth noting that, in most standard models, institutions which shift the Beveridge Curve will also tend to impact on wages as well as on equilibrium unemployment.

We find co-ordination in wage bargaining increases the *absolute* impact of unemployment and that both union density and the benefit replacement ratio reduce it. The overall impact of both employment protection and employment taxes is to raise real wages, but these effects are modified in economies where wage bargaining is co-ordinated. Both the benefit replacement ratio and the benefit duration have a direct impact on wages. We also investigated the interaction between the two on the basis that higher benefits will have a bigger effect if duration is longer. This interaction effect was positive, but insignificant. Looking at real wage resistance effects, we find that a tfp shock has a negative effect on real wages (given trend productivity) and an import price shock has a positive effect. Both these are consistent with the real wage resistance story. Finally, we find that the impact of owner occupation on wages is positive and close to significance.

So how well does our model fit the data? Overall, it appears to do quite well, particularly for those countries with big changes in unemployment. However, for countries with minimal changes such as Austria, Japan and Switzerland, it is not great.

How do the institution effects compare with those in the wage equation? First, just as in the wage equation, both employment protection and employment taxes have a positive effect, with the latter being modified in economies with co-ordinated wage bargaining. Our tax effects are not nearly as large as those of Daveri and Tabellini (2000), with a 10 percentage point increase in the total employment tax rate leading to around a 1 percentage point rise in unemployment in the long run at average levels of co-ordination.

As might have been expected, benefit levels have an important impact on unemployment, as does benefit duration and their interaction, something that did not show up in the wage equation. Furthermore, despite the fact that union density reduces the unemployment effect in the wage equation, we can find no significant effect on unemployment, although we do find a positive rate of change effect. We do find a positive role for owner occupation but, as in the wage equation, it is not very significant. Finally, the impact of the import price and tfp shocks seem sensible and consistent with those in the wage equation. However, while money supply shocks do not have any effect, the real interest rate does have some positive impact.

So it appears that, overall, changing labour market institutions provide a reasonably satisfactory explanation of the broad pattern of unemployment shifts in the OECD countries and their impact on unemployment is broadly consistent with their impact on real wages. With better data, e.g. on union coverage or the administration of the benefit system, we could probably generate a more complete explanation, in particular one that did not rely on such a high level of endogenous persistence to fit.

In the following countries, changing institutions explain a significant part of the overall change in unemployment since the 1960s: Belgium, Canada, Denmark, Finland, France, Italy, Netherlands, Norway, Spain, UK, and the US. They explain far too much in Austria, Portugal and Sweden. They explain very little in Australia, Germany, Japan, New Zealand and Switzerland, although in Japan and Switzerland there is very little to explain. Again, the outcome is "not bad", given the weaknesses of the data.

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(York Publishing)

**edited by Richard Dickens, Jonathan Wadsworth and Paul Gregg**

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**forthcoming...**

# After the ball was over...

Looking back over the last two years, Clive Hollick takes a candid look at the experience of his United Business Media Group and the lessons to be learned from the Great Dotcom Bubble.

Over the last two years, our group has lost – or invested, if you want to put it nicely – about £100 million trying to find out how to make money on the Internet. Let me take you through what has happened to us over these two years, then try to explain where we are now focusing our interest and to share some insights about what we have learned along the way.

Two years ago we were driven by those two powerful forces: fear and greed. With our publications – both business to business and business to consumer – we were fearful that someone else from the online world would come along and eat our lunch. We were also fearful that many of our other information services, like *PR Newswire*, which is the largest distributor of news releases in the United States, would be disintermediated. So we said: “We really do have to respond to this threat, because if we don’t participate in this information revolution then sure as hell we’re going to lose out.”

Greed also pushed us forward, because we saw the opportunity of creating wholly new revenue streams, new opportunities to take money from our customers by providing them with

a range of new services. We also saw an opportunity to move into a new market for us, a market related to transactions. We knew that we were a media company, a company that published information, a company that collected information through our market research group (National Opinion Polls) and that distributed information through *PR Newswire*; but we were not actually part of any transactions. We saw in the Internet

**We were driven by those two powerful forces: fear and greed**

an opportunity to create some offerings that would allow us to participate in the commerce that went on in the markets that we described.

For example, we are the largest publisher of information about the paper and pulp market in the United States – a market with a turnover of about \$350 billion a year. Our business case was simple. Starting with a total annual market worth \$350 billion, the services that we were going to be offering would provide us with a turn of, say, 0.00125%. I never quite understood why we chose 0.00125%, but it was clear that we were looking at potentially a hugely profitable business opportunity and one that we could not pass up. I am, of course, oversimplifying, but we did believe that our strong position in terms of information gave us a great opportunity. We already had all the market information, so we knew what the prices were at each stage in the delivery chain, and we knew all the other main financial indicators. We thought, therefore, that it would be relatively easy to get involved in the market transactions themselves.

With hindsight, you can immediately see the absurdity of this strategy. But at the time our shareholders shared the vision. They thought: “This is a

marvelous way of making more money out of the existing assets. Just wrap a little bit of IT round them and put them on the net." So, with this good following wind, we set forth.

The first thing we did was to replicate all our publications and services online. That exercise proved to be so-so. We did derive quite a lot of extra advertising revenue in this way. For example, we publish *Information Week* in the United States, with a circulation of about 440,000 copies a week. It goes to all the CIO's in the United States. Since we could now deliver much the same audience for daily news updates and archive services, we could get good advertising revenue on the back of the new activity. That worked well. We got (and still have) advertising revenue of around \$200 a thousand, which is a good rate for targeted advertising.

Our second move was to set up portals linked to our areas of interest in the US, designed to attract a broad cross-section of people either in the IT industry or the paper and pulp industry or the health care industry. These portals have proved to be problematic. Many people visited our sites and at investor presentations I used to stand up and say things like: "We have the most trafficked site in popular music in Europe." Indeed we had, but could we make money out of it? With great difficulty, because they could not produce enough advertising revenue. We had some small successes with recruitment and in marriage broking between companies or people with ideas and potential investors. However, we could not really make these portal sites viable. Now they have merged with others. For example, in the United States we are in the process of putting all our high-tech sites together with other people and I suspect that we shall end up with just one or two. There seems to be room for just one or two in each market-place.

Our third application was in e-commerce sites and there we really lost a lot of money. The 0.000125%



## There seems to be room for just one or two in each market-place

just did not turn up. In the US paper and pulp market we were ranked as number three. There was another company, which was at one point capitalised – I never quite knew why – at \$3 billion and which was apparently going to do well. In reality, it did very little business. It found that, without industry sponsorship, without the industry itself buying into and being part of the market-place, the response was: "What's the benefit of trading there?"

So what did we do? We watched this other company go up to \$3 billion and come down to nothing. It has closed. We wised up to the fact that we needed actual industry partners, who had real services to offer and real transactions they wanted to do and quite liked the information services that we could wrap round it all. We have done that in the paper industry and in the film and television industry, where we effectively linked up with well-established companies that were already being used by film production businesses. In this context, the film production industry is an interesting little example. It is a *project* business. Every film is a new project, starting afresh and in need of outsourced services. We found that the most effective way of getting involved was to buy already established accounting companies, already established companies that worked out residuals, already established companies that

knew where producers and line assistants were and how to call them up at a moment's notice. With both paper and pulp and film and television (which is based in Hollywood), we made our operations work by teaming up with already established providers and effectively just wrapping round some IT. We took an existing customer service, which people already knew and loved, and simply moved it one stage further.

The lesson here is that in many markets there are well established ways of doing things and that sometimes new technology and business ideas take time to gel. People are slow to change the habits that they have built up over a long time. That is a dimension that we did not build into our thinking. There are certainly examples where something new has come along and totally transformed a market; but, mostly, basing the overall package on tried and trusted services has proved to be effective.

Meanwhile, the real heavy spending was the continued investment throughout our group in systems, to ensure that the information flows were really working. We did not shout about it, but putting a lot of that £100 million into data capture and data management has proved to be what has changed our business most and given us the opportunity to improve it in a number of different ways.

So what is the balance here for the last two years? We have owned up to the fact that quite a lot of the money invested is probably lost. Fortunately, we have managed to sell one or two of our portals and, if we hold on to the shares that we got in exchange for them and if those shares ever recover from their current levels, then we might just about wash our face. The failures have either been closed down or sold off to somebody who can make better sense of them, usually by aggregation. Ignoring the cost of capital and the opportunity cost, we might just about get our money back.



We are left with a lot of publication and service sites, which were set up separately but which were related to particular publications or services. These we have reintegrated. Now, if you are the editor of *Information Week*, or if you are one of our health care consultants in the United States, using market research to provide information to the pharmaceutical industry, you effectively run all channels. You run the print channel, the online channel and, importantly, you are now beginning to run the new broadband channel. We have reversed our original position, which was based on the idea of separate, stand alone new business, which needed all kinds of new exciting people. Of course, we have retained some of the people with the new IT and marketing skills and with the "vision", but they are now part of the editorial and product development team associated with the original core business, because that is where the basic business relationship and understanding of the market lies. Effectively, we have integrated the online with other channels.

We have also learned (and learned to love the fact) that this is the most wonderful low-cost distribution channel. It is interactive, which is extremely valuable for a business like ours that is constantly collecting information, sending out messages and then wanting to find out what people think about them, ie market research. All of our businesses now use the Internet to distribute their information. *PR Newswire* distributes about 1,000 press releases a day in the US. In a way, it was an original online business, set up in 1953 as a wire service. As each wave of new technology has come through, it has grabbed it: first the fax, then online, and now broadband (which is point-to-point and inexpensive). Broadband does not yet quite work in some ways, because there is no proof of receipt for earnings' announcements that satisfies the US Securities and Exchange Commission. But the technology will shortly cope with that requirement.

With the capital markets, *PR Newswire* is in the business of getting information out to investors around the world. The Internet has helped that business to grow – at about 30% per annum and with great margins. The fear that someone else would come and eat our lunch by putting all these press releases on the Internet for nothing has not materialised. Why? Because we "own" the customers. As with the Internet, the service is free to the user, but the customers pay us to pump their messages out. Then we made a smart addition. *e-watch* is an internet clipping company, with a software development whereby a word or a phrase put into the system will throw up all related mentions. *e-watch* tried to exploit its development but failed. We put it through our distribution network, with 40,000 customers, and it is now selling nicely. That is one of three or four examples of how we have kept our eyes open for new ideas and products that are IT based, which we can then sell through our distribution network.

The interactive side is also important for us. *PR Newswire* puts out press releases. What people who put out a press release want to know is who has read it; what did they think about it; what did they write about it; and what did they do about it. We use the Internet to help us to provide that feedback to customers. This has greatly enhanced our service and has developed a number of new revenue streams.

In market research, the most single important change brought about by the new technology is that we can increasingly sit directly on platforms in certain sectors. Let us take the US health care market, where we are the leading market research company. We have a panel of 35,000 doctors in the US, who provide us with information. In the past, they used to write this out once a month and we used to give them a game of golf in return, or a weekend in Hawaii, if they were really helpful. They would tell us what they

diagnosed, what they prescribed and give us the life cycle of a particular patient. It was a laborious, but very valuable, service for us and vital to the pharmaceutical companies to whom we sold the information. Today, we sit on the proprietary software system inside the doctor's surgery and, obviously on an anonymous basis and with the doctor's approval, are able to collect information that: a) gives us far more detail; b) provides a much bigger sample; c) does not waste a busy doctor's time; and c) still lets him go to Hawaii. Sitting on these platforms (and there are similar ones in a number of different professions) is helping us to create far richer databases, which are transforming their industries. It also reduces significantly the cost of collecting high quality data, the more so as the population with Internet access increases.

Customer relations' management has probably been one of the most significant areas of advance. We now know much more about our customers. We can find out what people think and what they like, making it possible to manage the customer and the customer relationship more effectively. This relates to the single most transforming thing that the Internet brings to our business. It is the ability to collect and manage data in vast quantities and to provide it to people when they need it and in the form that they can understand and use.

That takes us up to the present. Here are a few insights from that experience. First, for a number of reasons, the barriers to entry are much higher than you might think. Established companies have customer relationships which, if they have been nurtured, represent a very real barrier to a new service. Secondly, the smarter established companies keep an eye on what others are up to and replicate it. In this way, we have teamed up with new entrants and their new ideas. They come up with a good idea and give us a license (perhaps related to revenue). If it works for us



## **The fear that someone else would eat our lunch has not materialised.**

when we put it through our marketing and sales network, we are happy and they make more money than if they went it alone. That represents a significant change from two years ago, when there was lots of venture capital money around for anyone wanting to start up.

It is clear, however, that a number of important new businesses have been created. Amazon is not yet cash flow positive, but it is heading that way. E-bay and Yahoo are sizeable businesses, which have been created in a very short period of time. That all points to the fact that, if you get in first with a good idea, are really brave and have got tons of capital, you can create a winner.

What have these last two years done to jobs? In the first phase, we took on a lot of people. Now, after closures and re-integration, the job gains have been relatively modest and have probably been offset by job losses created in other areas by increased efficiency. Looking at our group (and the same is true of many other media companies), we have lost jobs overall, but have gained new types of higher value jobs. The hope is that the overall improvement in economic activity will create other jobs in other parts of the economy.

One of the crucial factors leading to net job losses for us is the way in

which the new access to information has changed the way that we run the group. It has reduced the need for a lot of supervisory management, who were spending their time collecting that information and presenting it to the right people in the right way. The filter between the CEO of a particular business unit and the people who are creating or selling the product now needs very few people. In fact, the relationship can almost be a direct link. The CEO of one very large British company told me recently that he now gets information directly, which three years ago had been filtered to him through three people.

This de-layering of the supervisory function means that the business head is now effectively more concerned about product development, marketing and strategy. Meanwhile, the people who are running the business have far more delegated authority, which is terrific in terms of job satisfaction in the workplace. The threat, however, to people with established middle management jobs is significant, creating a very real problem in terms of business culture that needs to be addressed.

A related cultural problem is that home working in our group has now gone up to around 40 or 50%. We "hot desk" in a lot of our businesses, plugging people in so that they can work from home for two or three days of the week. This has proved to be good in terms of job retention and recruitment of people, who otherwise would not have joined us. This access to a much wider population has been a considerable benefit to the group.

There has also been a change in the way businesses operate. I was brought up to think of business as a very competitive activity. It still is, but we are now having to learn far more about co-operation and partnerships. In addition to working with people who come up with smart ideas, we are also having to learn how to work in partnerships, sometimes even with our competitors, because alone we cannot achieve results.

Product innovation is another exciting beneficiary of this information revolution. Lots of new ideas are thrown up, some duff and some viable. In this new world the customer now has now an expectation that there will be a much faster rate of product enhancement and that the products and services that we offer will be constantly reviewed. If you do not meet that challenge, you move backwards. It is not enough to say that you have got another product and might launch it in 18 months time. Constant improvement, constant recalibration of existing products is now expected and essential. This promoted innovation is very much to the benefit of the consumer.

Looking back over the past two years, we saw a South Sea Bubble of investment, often inflated by whim and hope rather than clear-sighted analysis. It has produced a vast increase in the capacity to produce hardware and software to meet the Internet-related demand. That bubble burst some time in the middle of last year and is now having a serious downward effect on the US economy. I think that those who believe that the UK and the European economies are going to be untouched by this are wrong.

So the revolution of which we speak, with its great benefits and its successes and failures, is going to pale compared with the real damage that the unjustified exuberance has done to the market place. This exuberance was the unanticipated consequence of the combination of an exciting new technology and free capital, with greed very much winning out over fear. There is quite a lot of clearing up to be done and this is certainly having a pretty nasty impact on a number of parts of our business. But I hope that this phase will be relatively short lived. We are certainly a lot wiser about what works and what does not.

**Lord Hollick** is Chairman of United Business Media.

This is an edited version of a talk to the CEP's Senior Business Forum on 26 June 2001.

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# Low pay

**Richard Dickens finds that the new floor on wages in the UK has not had the negative effect on employment that conventional economic models predicted and that it has been set too low to affect all of those targeted on the bottom 9% of the wage scale.**

**O**n 1 April 1999 the first legally binding National Minimum Wage (NMW) was introduced in the UK. What has been the evidence so far about its impact on pay, employment, poverty and income inequality?

Britain has never before had a national wage floor. Between 1909 and 1993, Wages Councils set minimum rates in a number of different low paying industries and a minimum wage still exists in the agricultural sector. This was set at £3.60 an hour for workers aged 22 and over and at £3.00 an hour for those aged 18 to 21. These rates were changed in June 2000 to £3.20 an hour for youths and in October 2000 to £3.70 an hour for adults. The Labour government also made an election pledge to increase the adult rate to £4.10 an hour in October 2001 and to £4.20 an hour a year after that.

One might imagine that measuring the number of workers affected by the introduction of the minimum wage would be relatively straightforward. However, the available UK survey data on individuals' hourly earnings are just not up to the job. This has led to considerable uncertainty over the likely impact of the minimum wage, both in terms of how many workers will experience a wage increase and the size of that increase. Before its introduction, the Low Pay Commission (LPC) estimated that around 2 million workers (or 9%) would receive a wage increase, with the average wage increase being in the region of 30%. However, since then the LPC has twice revised down its estimates of the number of workers affected to 1.5 million (6.4%) in February 2000 and then to 1.3 million (5.5%) in March 2001.

The problem arises because none of the available survey data provides an accurate measure of individuals' hourly wages. The two surveys most commonly used for this type of analysis are the Labour Force Survey (LFS) and the New Earnings Survey (NES). The LFS is a household based survey that samples about 60,000 households every quarter. Individuals are asked about their most recent

earnings and their number of hours worked. The responses are used to compute an hourly wage. However, there is good reason to think there is a large amount of measurement error in these computed hourly wages. This probably arises for a number of reasons, including the large number of proxy responses in the LFS and confusion over *gross* and *net* wages. Computing hourly wages by dividing earnings by hours is likely to amplify any such errors. The earnings information in the NES is likely to be much more accurate, since it is obtained from employers. However, since the NES sample is constructed from tax records, it under-samples workers with low earnings (mainly part-timers and women) and so is not very useful for measuring the extent of low pay.

The Low Pay Commission is well aware of these problems and has made a number of attempts to obtain a better estimate of the extent of low pay. In March 1999 a question was introduced into the LFS asking workers whether they were hourly paid and for their hourly rate. Since only a proportion of workers report an hourly rate, some form of imputation is required for those not reporting one. The LPC combines this imputed hourly rate information from the LFS with information from the NES to compute an overall estimate of the number of affected workers. Table 1 presents the latest LPC estimates of those paid below the minimum wage in Spring 1998.

**Table 1 LPC estimates of the number of workers affected by the NMW**

|                    | Individuals paid less than NMW |         |
|--------------------|--------------------------------|---------|
|                    | %                              | ('000s) |
| <b>Spring 1998</b> |                                |         |
| 18-21 years        | 6.6                            | 105     |
| 22 years and over  | 5.3                            | 1,150   |
| All over 18 years  | 5.4                            | 1,255   |

Computed from Table A1.5 in Low Pay Commission, 2001a). Figures are those for adults and youths paid below £3.50 and £2.90 respectively in Spring 1998 to allow for earnings growth between Spring 1998 and Spring 1999.

## We estimate that in March 1999 some 6% of workers were paid below the minimum.

These LPC estimates suggest that before the NMW just under 1.3 million workers were paid less than the minimum rate (deflated to Spring 1998 earnings levels). This constitutes some 5.4% of workers: 5.3% of adults and 6.6% of youths. These figures are well below the original estimate of 2 million workers (9%). This is important, since one of the stated criteria used by the LPC in deciding what the minimum rate should be was the proportion of workers affected (Low Pay Commission, 1999). Clearly, if the intention was to set the rate so that 9% of workers were covered, then a substantially higher rate is required. Using the most recent LPC estimates of the proportions paid below different hourly rates, the adult minimum would have had to have been £4.00 an hour to affect 9% (Low Pay Commission, 2001a).

Since the LPC is largely concerned with under-payment, most of the figures it publishes refer to the number (or proportion) of workers paid below the minimum wage. However, we are interested in the numbers actually paid the minimum wage when it was introduced and up-rated. Therefore, we have computed our own estimates of the distribution of hourly pay, based on the hourly rate information in the LFS. Table 2 presents these estimates of the proportion of adult workers whose pay lies in different hourly pay bands over the period of the introduction of the minimum wage and the period when the adult rate was up-rated to £3.70. Rather than taking the exact minimum rate, we look at a 5p pay band around it.

We estimate that in March 1999 some 6% of workers were paid below the minimum and about 1% were paid at the minimum. These estimates are somewhat above those reported by the LPC. By April-May 1999 we find 5% paid at the minimum, so it appears that the legislation did impact substantially on wages. We do find a significant number paid below the minimum (1.6%), but this proportion declines by the next period (June-August 1999) as the proportion at the minimum increases slightly to 5.2%.

The next period of interest is October 2000, when the adult rate was up-rated. By September 2000 only 2% of workers were paid at the minimum wage (and very few below). Overall wage growth lessened its impact on the distribution.

Consequently, when it was increased by only 10p, the number of workers affected was much less than at the initial introduction. In the period October to November 2000 we find only 2.2% of workers at the new rate of £3.70, with some still at the old rate. By December 2000 to February 2001 the proportion below has declined, but there are still only 2% at the new rate. In October 2001 the rate was increased to £4.10. We can see that some 7.6% of adult workers are paid below £4.10 in the period December 2000 to February 2001. Given that overall wage growth is currently strong, this represents an upper bound on the proportion of workers who will be affected by the October 2001 up-rating. We expect this to be similar to the proportion affected by original introduction of the NMW.

One of the major considerations in introducing the minimum wage was the effect it might have on employment. The conventional model of the labour market unambiguously predicts that, if a minimum wage is introduced above the market clearing wage, employment will fall. Until the early 1990s, the conventional wisdom was that minimum wages set at levels generally observed in Europe and the US had small negative effects on employment. However, more recent estimates of the impact of raising the US minimum wage in the early 1990s (Card and Krueger, 1995) and the impact of the UK Wages Councils (Dickens, Machin and Manning, 1999) found small positive effects on employment.

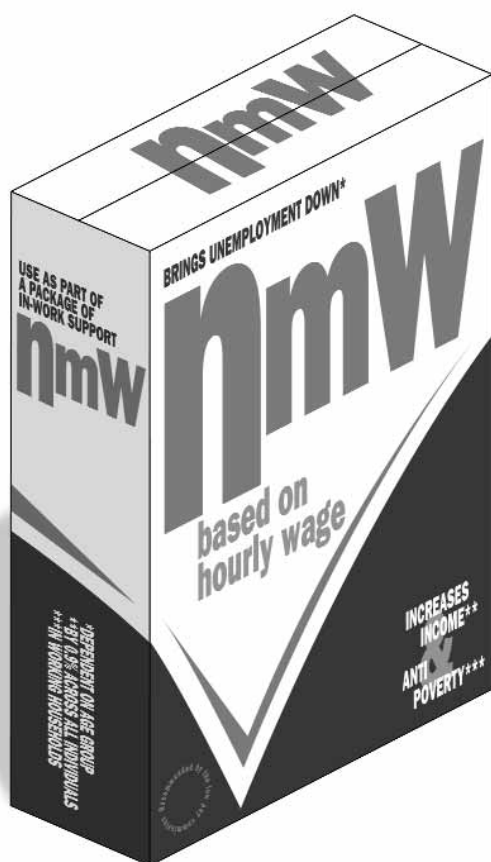
Trying to estimate the impact of introduction of the minimum wage on aggregate employment levels is difficult. Aggregate employment growth has been strong throughout this period, with employment reaching a record level of 28 million by the end of 2000. Of course, we do not know what would have happened in the absence of the minimum wage. A simple way of attempting to evaluate this is to examine employment rates across different age groups. Since there is no minimum wage for 16 and 17 year olds, and since the minimum wage for 18 to 21 year olds has more bite than the adult rate, we might expect to see some substitution between these groups. In fact, estimates from the LPC show that between Spring 1999 and Spring 2000 the employment share of 16 and 17 year olds actually fell, while the employment share of 18 to 21 year olds increased.

**Table 2 Proportion of adult workers in hourly rate bands**

|                 | March<br>1999 | April-May<br>1999 | June-Aug<br>1999 | Sep<br>2000 | Oct-Nov<br>2000 | Dec 2000 –<br>Feb 2001 |
|-----------------|---------------|-------------------|------------------|-------------|-----------------|------------------------|
| Under £3.575    | 5.97          | 1.58              | 0.86             | 0.45        | 0.43            | 0.38                   |
| £3.575 – £3.625 | 0.98          | 4.99              | 5.20             | 2.07        | 0.72            | 0.40                   |
| £3.625 – £3.675 | 0.37          | 0.71              | 0.59             | 0.12        | 0.14            | 0.02                   |
| £3.675 – £3.725 | 0.61          | 0.74              | 0.60             | 0.54        | 2.17            | 2.06                   |
| £3.725 – £4.00  | 2.67          | 3.25              | 3.32             | 2.27        | 2.14            | 1.94                   |
| £4.00 – £4.10   | 3.42          | 4.03              | 4.19             | 3.38        | 3.06            | 2.83                   |

Estimates from Dickens and Manning (2001). Labour Force Survey data.

## The Low Pay Commission has twice revised down its estimates of the numbers affected.



However, there have been other policy changes that will have affected these age groups differently, e.g. the New Deal and education enrolment. Overall, the evidence from aggregate employment levels is inconclusive.

Another approach is to examine the micro-economic evidence on employment change. Stewart (2001) compares the probability of remaining in employment from one period to the next between workers directly affected by the minimum wage and those not directly affected. The conventional model would predict a relative fall in employment rates for those affected over the period of introduc-

tion. He finds essentially no significant difference in the employment retention rates of those initially paid below the minimum and those paid above over the period of introduction. In fact, he finds small positive effects for young men, adult men and young women, but small (insignificant) negative effects for adult women. One difficulty in this type of analysis is choosing a suitable comparison group. Stewart focused on those paid just above the minimum wage prior to introduction. However, we have seen above that this earnings data contains a substantial amount of measurement error, which may mean that the comparison group is unreliable.

Another way to analyse aggregate employment changes due to the minimum wage is to utilise the regional variation in wages that exists across Britain. We expect those regions that are most affected by the minimum wage to exhibit the greatest employment changes over the period of introduction. Using county level data from the LFS, we examine differences in employment in the six months after introduction (April to September 1999) compared with those in the six month period a year earlier (April to September 1999). We use regression analysis in order to control for other characteristics in the counties. Table 3 presents our results using three different measures of employment (change in (log) employment-population ratio, change in (log) total employment and change in (log) total hours worked) and two measures of the impact of the minimum wage (the initial proportion paid below the NMW and the wage gap: the wage increase required to raise everyone up to the minimum wage expressed as a percentage of the total wage bill).

We find that those counties most affected by the minimum wage have a small increase in employment (both in the employment-population rate and in the employment level), although none of our results is significant. Thus a 1% increase in the proportion paid below the NMW prior to introduction leads to a 0.18% change in the employment/population ratio. We find a small negative impact on total hours, but again this is insignificant. So, while nothing very strong emerges here, we can find no evidence that the minimum wage has adversely affected aggregate employment.

The National Minimum Wage was introduced as part of an anti-poverty strategy designed to make work pay. However, many commentators have doubted the effectiveness of the minimum wage as an anti-poverty device. An argument often made is that the minimum wage raises the incomes of second earners in relatively well off households (teenagers and working wives), whereas most of the poor are those without work (pensioners and the jobless). Indeed, in 1978 the Royal Commission on Income and Wealth rejected the introduction of a minimum wage for precisely these reasons.

However, rising wage inequality in the 1980s and 1990s

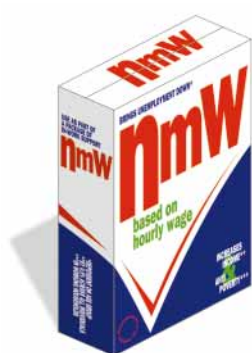
**Table 3** County level changes in Employment and Hours. April-Sep 1998 and April-Sep 1999

| Effect of 1% change in minimum wage measure on |       |        |
|------------------------------------------------|-------|--------|
| Change in employment/population ratio (%)      |       |        |
| Initial proportion paid below NMW              | 0.18  | (0.20) |
| Wage Gap                                       | 1.60  | (1.44) |
| Change in employment (%)                       |       |        |
| Initial proportion paid below NMW              | 0.06  | (0.35) |
| Wage Gap                                       | 0.03  | (2.51) |
| Change in total hours (%)                      |       |        |
| Initial proportion paid below NMW              | -0.06 | (0.34) |
| Wage Gap                                       | -0.92 | (2.45) |

**Notes:** Regression on 65 counties in Great Britain. Other control variables are proportion female, proportion manual, average age, proportion white. Wage Gap is the wage cost of raising those below NMW up to NMW, expressed as percent of total hourly wage bill. Standard errors in brackets.

**Table 4** Household Income Deciles of individuals in households affected by minimum wage

| Household income decile | All individuals |                          | Individuals in working age households |                          | Individuals in working age employed households |                          |
|-------------------------|-----------------|--------------------------|---------------------------------------|--------------------------|------------------------------------------------|--------------------------|
|                         | % Affected      | Distribution of affected | % Affected                            | Distribution of affected | % Affected                                     | Distribution of affected |
| 1st decile              | 12.7            | 12.6                     | 14.2                                  | 12.9                     | 39.7                                           | 30.2                     |
| 2nd decile              | 16.1            | 14.3                     | 21.7                                  | 18.2                     | 22.8                                           | 16.4                     |
| 3rd decile              | 14.5            | 11.7                     | 16.8                                  | 13.6                     | 22.3                                           | 15.1                     |
| 4th decile              | 16.0            | 14.1                     | 18.2                                  | 15.5                     | 18.9                                           | 12.7                     |
| 5th decile              | 15.2            | 13.9                     | 16.8                                  | 14.1                     | 9.4                                            | 5.6                      |
| 6th decile              | 11.8            | 10.8                     | 8.9                                   | 6.7                      | 11.3                                           | 6.7                      |
| 7th decile              | 9.3             | 8.3                      | 9.0                                   | 6.8                      | 7.6                                            | 4.4                      |
| 8th decile              | 6.3             | 5.7                      | 8.9                                   | 6.5                      | 8.7                                            | 4.7                      |
| 9th decile              | 7.0             | 5.8                      | 4.7                                   | 3.1                      | 5.9                                            | 3.0                      |
| 10th decile             | 3.6             | 2.8                      | 4.0                                   | 2.6                      | 2.8                                            | 1.4                      |
| <b>All deciles</b>      | <b>11.4</b>     | <b>100.0</b>             | <b>12.8</b>                           | <b>100.0</b>             | <b>16.3</b>                                    | <b>100.0</b>             |



**Rising wage inequality has made the minimum wage a more effective tool for tackling poverty.**

(and the increasing prosperity of pensioners) has resulted in a stronger link between low pay and low household income (Dickens, 1999). This has made the minimum wage a more effective policy tool for tackling poverty and reducing inequality. Table 4 presents information on the link between low pay and household income, using data from the Family Expenditure Survey 1998/99. The analysis considered the impact of going from a situation with no minimum wage to one of £4.10 for adults and £3.50 for those aged 18 to 20 (at October 2001 earnings levels). The Table presents the percentage of individuals, by household income decile, affected by the minimum wage for three different populations: all individuals, individuals in working age households and individuals in working age employed households. Also presented is the distribution of affected workers across household income deciles. Note that

**Table 5** Gains from the minimum wage across household income deciles

| Household income decile | All individuals      |                       | Individuals in working age households |                       | Individuals in working age employed households |                       |
|-------------------------|----------------------|-----------------------|---------------------------------------|-----------------------|------------------------------------------------|-----------------------|
|                         | % increase in income | Distribution of gains | % increase in income                  | Distribution of gains | % increase in income                           | Distribution of gains |
| 1st decile              | 2.3                  | 13.0                  | 2.5                                   | 13.1                  | 5.2                                            | 28.9                  |
| 2nd decile              | 1.5                  | 13.9                  | 2.1                                   | 18.2                  | 1.8                                            | 16.8                  |
| 3rd decile              | 1.4                  | 16.5                  | 1.3                                   | 15.3                  | 1.3                                            | 14.9                  |
| 4th decile              | 0.9                  | 12.9                  | 1.1                                   | 15.1                  | 0.8                                            | 9.0                   |
| 5th decile              | 0.9                  | 12.8                  | 0.7                                   | 9.6                   | 0.4                                            | 5.5                   |
| 6th decile              | 0.5                  | 7.1                   | 0.4                                   | 6.4                   | 0.6                                            | 8.8                   |
| 7th decile              | 0.4                  | 8.5                   | 0.5                                   | 9.1                   | 0.3                                            | 4.7                   |
| 8th decile              | 0.3                  | 5.9                   | 0.2                                   | 5.8                   | 0.2                                            | 5.3                   |
| 9th decile              | 0.2                  | 6.5                   | 0.2                                   | 4.4                   | 0.2                                            | 4.1                   |
| 10th decile             | 0.1                  | 2.8                   | 0.1                                   | 3.1                   | 0.1                                            | 2.1                   |
| <b>All deciles</b>      | <b>0.9</b>           | <b>100.0</b>          | <b>1.0</b>                            | <b>100.0</b>          | <b>1.3</b>                                     | <b>100.0</b>          |

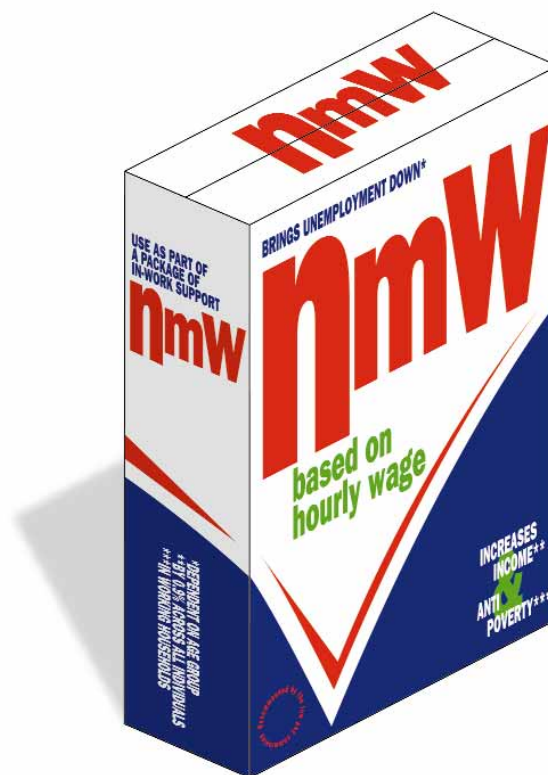
individuals may be affected if they live with a minimum wage worker, thus bringing the effect on children into the picture.

Looking first at the impact across all individuals, we see that some 11% are affected by the introduction of the minimum wage at these rates. Some 13% of those with incomes in the bottom decile are affected and 16% of those in the second decile. Many of those in the bottom decile are pensioners and workless households. The second column presents the distribution of affected individuals. We see that over 50% of those affected are in the bottom four deciles of the household income distribution. Dropping pensioner households from this analysis strengthens the link between low pay and low income. Here some 60% of affected individuals are in the bottom four deciles. When we focus on those in households of working age with someone in work, we see a much stronger link. Almost 40% of those in the bottom decile are affected by the minimum wage and almost 75% of those affected have incomes in the bottom four deciles.

These figures show us the incidence of low pay in households with different incomes, but tell us nothing about the impact of the minimum wage upon these incomes. Table 5 presents the percentage change in household income arising from the introduction of the minimum wage at these rates and the distribution of the gains across income deciles for all individuals in these three populations.

One should note that these are gross gains and so take no account of tax and benefit changes that will arise with the increase in earnings. These changes will dampen the effect of the minimum for all households. The table shows that the distribution of gains is similar to the distribution of affected workers in Table 4. This suggests that it is the presence of a single minimum wage worker in the household that is important, rather than the number of hours they work or the presence of more than two or more minimum wage workers.

Across all individuals the minimum wage raises gross income by 0.9%. The largest affect is for those individuals whose household income is in the bottom decile. Their incomes rises by 2.3%, compared with 0.9% for those in decile five and 0.1% for those in the top decile. This means that the minimum wage will have some impact on household income inequality, by raising incomes at the bottom by more than at the top of the distribution. The figures for individuals in working age employed households are stronger still. Overall income will rise by 1.3%, but for those in the bottom decile of this population incomes rises by 5.2%. While it is clear that the minimum wage cannot directly affect individuals who are out of work, it appears that it will have some relatively modest effects on the incomes of the working poor. Furthermore, the minimum wage has been introduced as part of a package of in-work support, which overall will have larger effects on poverty.



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# The rate for the job

How can trade unions cope with performance-related pay?

**Unions have long bargained on the basis of “standard” rates. Today they are having to come to terms with managements rewarding individual performance. David Marsden argues that unions still have an important role to play in preserving the idea of fairness in the workplace.**

**N**ew thinking on the organisation of work and pay has brought management into direct conflict with long-established trade unions ideas of fairness and the methods they have used to defend their members' interests. As employers have striven to make their organisations more responsive to more competitive and faster changing markets, they have sought to devolve decision making and to rely more upon employees thinking for themselves and using their own initiative. They have felt the need to adopt more performance-oriented reward systems to reinforce this shift.

Historically, a key principle of trade union regulation of workers' pay and conditions has been the “common rule”, which has given substance to notions of fairness. One of its most important manifestations has been the “standard rate”, the idea that unions should seek to establish a minimum rate of pay for particular types of work: a minimum rate per unit of time, or per piece, or job realised. Today, in continental Europe and still in large parts of the British public services, there are sectoral agreements establishing such standard rates of pay, usually linking these to complex systems of job classification.

In the workplace too, the idea of a common rule fitted with traditional payment-by-results (PBR) systems that applied common rates of pay to particular jobs, or applied common rules for the number of pieces produced. William Brown's famous study of piecework bargaining (1973) illustrates just how the logic of a common rule could apply even in at the work group level. Management acts, of commission or omission, establish precedents and the workplace representatives use these to lever up the pay of all, establishing a new common rule.

For many decades, such rules also fitted with management's approach to work organisation and performance, often referred to as the “bureaucratic” model of work organisation. For unions and their members, such rules are simple to enforce, as it is relatively easy to detect backsliding by management. For management, having a standard set of rates of pay greatly eases day-to-day work assignments by removing the incentive to use each change as a pretext for renewed negotiation over pay.

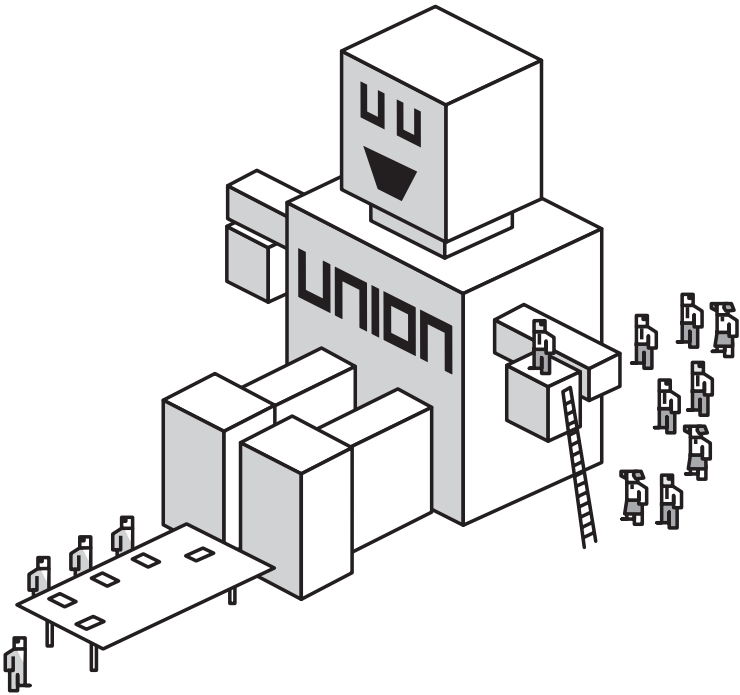
In a word, one might characterise the “common rule” as focusing on the job or the skill as the bearer of rewards,

# Fairness meant giving the same rewards for comparable jobs.

with adjustments being made for workloads and working conditions. Fairness meant giving the same rewards for comparable jobs. Employee performance was assumed to be determined by the job. This was always a fiction. Any line manager or experienced trade unionist would tell you, there are “good” and “bad” workers. But, as bureaucratic work systems set rather narrow limits within which individual employees could vary their performance, it was a reasonable approximation.

Rewarding individual performance rather than the job makes the old-style “common rule” inapplicable and has boosted management’s preference for non-union arrangements. I should like to argue that by seeking to maintain the fairness with which modern incentive systems operate, their “procedural justice”, unions still have an important role to play. The early Christian missionaries understood that they had to win over the local chief as well as the people to establish their churches. In the same way, unions’ success in representing their members depends upon gaining recognition from employers. In turn, this depends on convincing employers that jointly managed reward systems work better than those they manage unilaterally.

Over the past two decades, the British public services have led the way internationally in modernising public management and developing more performance oriented work and reward systems. Yet, summarising the research findings on the main public service performance pay schemes, the government’s Makinson report (2000) observed that current arrangements were “ineffective and discredited” and contrasted “approval of the principle and disenchantment with the practice of performance pay”.



Both economists and psychologists involved in personnel management agree that monetary incentives will only work if employees believe their efforts will be rewarded; or, at least, that there is a good chance they will be. Employees may doubt this for several reasons. They may question management’s competence to measure performance accurately. More seriously, they may doubt the good faith and sincerity of management’s promises to reward good performance. The CEP’s work on performance pay illustrates just how widespread such feelings are, even within the public sector (Table 1).

**Table 1** Do public servants trust their management over PRP?

| Question: % replying ‘agree’                                   | Civil Service       |                     | NHS trust hospitals |                      |                 | Schools (heads) |           |
|----------------------------------------------------------------|---------------------|---------------------|---------------------|----------------------|-----------------|-----------------|-----------|
|                                                                | Inland Revenue 1991 | Inland Revenue 1996 | Employment Service  | Individual PRP trust | Group PRP trust | Primary         | Secondary |
| <b>Relations with management</b>                               |                     |                     |                     |                      |                 |                 |           |
| My last appraisal was NOT a fair reflection of my performance* | 27                  | 28                  | 31                  | 33                   | 19              | 33              | 29        |
| Management use PRP to reward their favourites                  | 35                  | 57                  | 41                  | 41                   | 27              | Na              | na        |
| There is a quota on good assessments                           | 74                  | 78                  | 74                  | 57                   | na              | 48              | 45        |
| <b>Line manager views:</b>                                     |                     |                     |                     |                      |                 |                 |           |
| PRP has reduced staff willingness to cooperate with management | 20                  | 45                  | 39                  | 30                   | 27              | Na              | na        |

\* reverse scored.  
**Source** Marsden and French (1998), and Marsden and Richardson (1994).



## It is hard to relate pupil performance to the work of individual teachers.

All but one of these PRP schemes in Table 1 depended on performance appraisal by line managers. The exception was the trust hospital using a trust-wide bonus. Around 30% of employees thought their last appraisal, on which their latest performance pay award depended, was not a fair reflection of their performance. Many thought managers used PRP to reward their favourites and that senior management set quotas on good appraisals in order to save money. Many line managers thought PRP had made staff less cooperative. Such expressions of employee distrust of management are not just old British "them and us" attitudes. Milkovitch and Wigdor (1991) report similar employee concerns in the US Federal Service performance management systems.

Both theory and this evidence indicate that management has much to gain from measures that can build employee confidence in the design and operation of their performance management systems. Yet it is hard for them to demonstrate with mere words the credibility of their promises to reward performance. It is hard to refute the quip "they would say that wouldn't they".

Let us consider three examples where unions can act to improve the procedural justice of the new pay and performance management systems.

### The operation of PRP schemes

Several of the schemes we studied had limited appeals procedures for individuals, although these tended to be lengthy and many employees might hesitate to challenge the person who would be responsible for their future performance appraisals. Many responded to our surveys that appeal procedures needed to be more effective.

Greater union involvement in the monitoring the operation of performance pay would in fact be building on what already exists. In the organisations we studied, management often went to considerable lengths to communicate with staff and their representatives. Sometimes, our survey results were discussed jointly. More important, information about the operation of performance management systems is shared, such as the distribution of appraisal scores at a fairly aggregated level. Under the March 2000 "partnership agreement" between the Cabinet Office and the Civil Service unions, union involvement the operation of pay reform has an official place.

### The choice of incentives that employees feel are appropriate

Although many respondents accepted the principle of paying for performance, the devil is often in the detail: what is "performance" and what kinds of performance can or should be rewarded. Let us consider some examples.

Professionals are more likely than office staff to resent interference in their work by bureaucratic managers. Teachers and health professionals were far less happy about PRP

than civil servants and hospital administrative staff. Professionals were also more likely to respond that they already worked to what they considered an appropriate standard. Such standards are inculcated during professional training and sustained by peer group activities and professional organisations. Employees in bureaucratic functions are more accustomed to direct management control of their work, so that PRP appears as less of an intrusion into their professional autonomy.

Employees who are committed to their organisation are less likely to minimise their effort than those who are not. Yet the design of incentive pay schemes often assumes that this is how employees will behave, unless they have an incentive to do otherwise. For those with a strong professional or public service orientation, this may be a mistaken assumption. A great many of our respondents showed high levels of organisational commitment, compared with studies of other employees. Indeed, our statistical analysis found that strong organisational commitment helped to counteract the negative effects of PRP on motivation and work relations. Worrying, though, were signs that the tensions surrounding PRP had eroded commitment at the Inland Revenue between 1991 and 1996 (Marsden and French 2002).

Disagreement between management and staff over appropriate objectives may also undermine the legitimacy of PRP. In the health services, how long should a ward cleaner or a nurse chat to a sick patient? Such activities add to costs, but they may improve the quality of the patient's stay. In the Employment Service, employees often feel they cannot find an individual job-seeker suitable work within the pre-determined time limit on interviews. Many teachers give large amounts of their own time to support their pupils, because

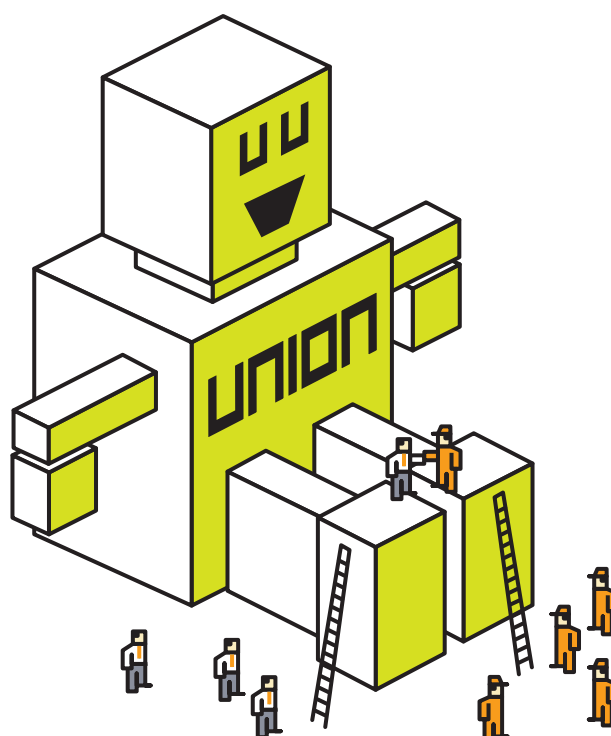




**Table 2** Which groups do you identify as sharing the same interests as you in connection with Performance Management (PM)?

| When considering the implementation of PM, which groups do you feel share broadly the same interests as yourself? |                  |                  |                  |
|-------------------------------------------------------------------------------------------------------------------|------------------|------------------|------------------|
|                                                                                                                   | Broadly the same | Mostly different | It's hard to say |
| a) Your school's governors                                                                                        | 23.3             | 14.3             | 62.4             |
| b) The leadership group/management team in your school                                                            | 53.7             | 17.0             | 29.4             |
| c) Other teachers in your school                                                                                  | 79.8             | 5.2              | 15.0             |
| d) Other teachers in your union or professional association                                                       | 63.5             | 4.8              | 31.6             |
| e) Your union or professional association                                                                         | 60.4             | 7.5              | 32.0             |
| f) The DfEE or your LEA                                                                                           | 10.7             | 35.4             | 53.9             |

Source Marsden (2000).

budgetary pressures leave them little alternative, if they are to give the quality of education they think right.

Top management, which decides on the choice of incentive scheme, is often far removed from such information. Yet, on the basis of our evidence, inappropriately designed objectives cause employees to feel the targets they have been assigned are irrelevant to their work.

In public services, performance often has many dimensions. Measuring it is partly a question of measuring activities employees consider relevant to their work, but also partly one of measuring those over which they believe they have some control.

### Conveying employees' views on measurement difficulties

We found widespread concern about management's ability to measure different aspects of performance and whether managers knew enough about the jobs of their staff to

appraise them properly and to deal with poor performance. If line managers themselves are unsure about the content of jobs of their staff and how to relate it to top management's objectives, they will find it safer to ask for more of the same, ie to emphasise quantity. Indeed, many of the civil service respondents thought there was too much emphasis on quantity, which is more easily measured than quality, despite information campaigns by top management stressing the importance of quality. Performance assessment in team working raises particular measurement problems, especially when PRP focuses on individual performance. In schools, for example, both heads and classroom teachers strongly believed that it was hard to relate pupil performance to the work of individual teachers. Thus a scheme that purports to link pay to the performance of individual teachers' pupils is felt to be measuring the wrong thing.

Finally, top management may overestimate the degree to which the jobs of employees lower down the ladder really give them scope to raise performance and to assume that, if they don't, it is because of lack of motivation. We asked teachers why they thought classroom effectiveness, surely the key element in performance, varied among individual teachers (Marsden, 2000). Only a third thought morale and motivation were the key cause. Most of the other causes cited, notably, skills, ability to motivate pupils and difficult workloads, could be not addressed by individual teachers on their own and so would elude individual PRP.

It is often difficult for individual employees to communicate such information to their managers. There is a fine line between failing to perform because one is incompetent and failing because one lacks necessary resources. Line managers may also think their staff are bargaining for easier targets. If the problem is poor line management, it becomes even harder to transmit the information to higher management. For these and other reasons higher management may well be cut off from the information it needs to design and operate its incentive schemes effectively.

To involve unions in this process may seem like them to help management. However, promoting procedural justice is

**Table 3** Who should determine standards of teaching excellence?

| Who do you think should have most say in determining standards of excellence in teaching?<br>(Select the top two) |      |
|-------------------------------------------------------------------------------------------------------------------|------|
| a) The government and its agencies<br>(eg. DfEE, Ofsted, QCA)                                                     | 10.5 |
| b) Practising teachers as a whole<br>(the teaching profession)                                                    | 36.5 |
| c) Practising teachers in one's own discipline                                                                    | 23.4 |
| d) The management team in individual schools                                                                      | 21.8 |
| e) The school's governors                                                                                         | 1.5  |
| f) Parents                                                                                                        | 1.7  |
| g) Local and national employers                                                                                   | 1.6  |
| h) Other (please specify)                                                                                         | 1.9  |
| i) Several of the above                                                                                           | 1.1  |

Source Marsden (2000)



also protecting their members against unfair treatment by their managers and, perhaps more important, it is not pleasant to work in an environment in which colleagues are demoralised and relations with management soured.

Whether or not unions are the best-placed bodies to take up these issues depends on the confidence of their members. Our study of teachers provides some evidence on this issue (see Table 2). Who did they identify as sharing the same interests in connection with performance management? Unsurprisingly, "other teachers" came out as the group most likely to share the same interests. However, the teachers' unions and professional associations came out strongly, much more so than the DfEE or the LEA and the school's governors.

We also asked who might be a legitimate voice for teachers' views about performance standards: who should determine standards of excellence in teaching (see Table 3). The teaching profession emerged as the leading candidate. As the unions play an important part in maintaining the overall coherence of the teaching profession, this suggests that they can have a clear role.

These findings indicate that the unions can play a critical role in promoting the procedural justice of performance pay schemes and that they would have the confidence of their members.

If unions are to invest heavily in replacing the "common rule" with "procedural justice", we need to answer two questions. First, had not the very public service PRP schemes that Makinson criticised involved the unions in significant ways? Second, if unions become too closely involved in the operation of PRP schemes, do they not run the risk of getting too close to management and forgetting their members?

It is true that the unions were involved in the operation of most of the PRP schemes. However, management either told them they would go ahead without them anyway, or involved them only after the scheme had been implemented. In both cases, unions face a dilemma: oppose the scheme outright and do nothing for individual members, or cooperate in running a scheme about which they have profound misgivings. In none of the schemes were unions or their members given much influence over design and performance measurement.

Had they been more closely involved, might not the unions have found themselves trapped: so closely implicated in the schemes that they could no longer represent their members? Since its inception, unions have never been able to rely solely upon the "common rule". Piecework was never as simple in reality as it is in theory. Because "pieces" are never quite the same and working conditions vary, output fluctuates for reasons beyond workers' control. What seemed a fair rate of pay under good conditions becomes

inadequate if conditions change and piece workers can achieve only a fraction of their target. Older piecework systems built up complex sets of rules for managing this. Adjustments would be made if the quality of components, or the working environment, deteriorated. Someone had to decide whether the change was sufficiently great for the special adjustment to be applied. This cannot be done by management alone for the very reasons discussed earlier. Workplace union representatives became heavily involved in such issues and learned to manage the tensions involved in this role.

The ability of workplace representatives to manage this role depends heavily on the back up provided by their unions and professional organisations. With rising levels of general and higher education, management may have less of an educational advantage over union representatives than in the past, but they will still have greater organisational resources at their command. Whether management should subsidise this function, given the benefits it derives from effective procedural justice, is a moot point. On balance, it would probably leave the unions too much in management's debt, and undermine their independence in the eyes of the membership.

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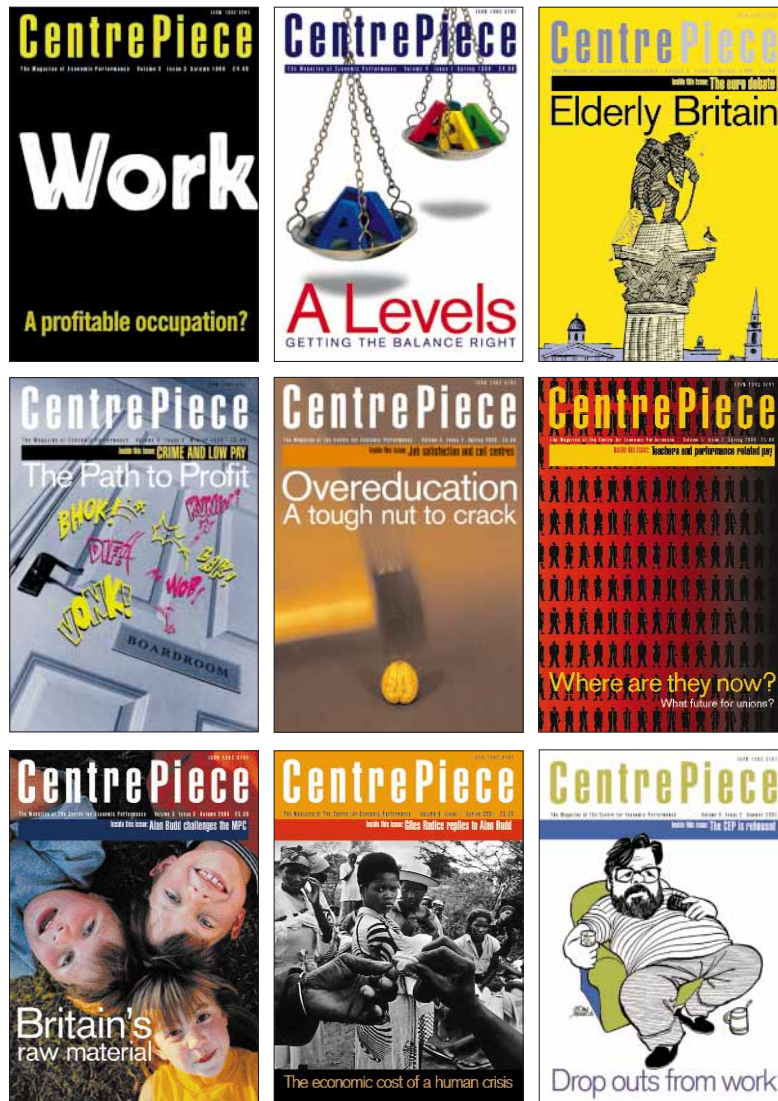
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