

Centre Piece

The Magazine of The Centre for Economic Performance Volume 5 Issue 1 Spring 2000 £5.00

Inside this issue: **Job satisfaction and call centres**

Overeducation A tough nut to crack



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Design: Raphael Whittle
Printed by: Warwick Printing Company
Photography: Karl Fulton

CentrePiece is the magazine of the Centre for Economic Performance at the London School of Economics.

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Editorial and Subscriptions Office
Centre for Economic Performance
London School of Economics
Houghton Street
London WC2A 2AE

Annual subscriptions for one year (3 issues):

Individuals £13.00

Students £8.00

Organisations (UK and Europe) £30.00

Rest of world £39.00

Visa and Mastercard accepted

Cheques payable to *London School of Economics*

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Volume 5 Issue 1

(ISSN 1362-3761) All rights reserved.

CentrePiece is printed on environmentally friendly, totally chlorine-free paper.

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Editor's note

The first issue of the Millennium also marks the start of CentrePiece's fifth year: and we are determined to maintain – and even improve on – the high editorial standards established in the first issue in 1996.

The current issue returns to themes we have addressed in the past – in particular, education and employment.

Our cover story on overeducation might strike some readers as odd – after all, aren't poor educational standards in Britain giving most cause for concern? Of course, they are: but as Steven McIntosh, Francis Green and Anna Vignoles explain, the clear evidence of overeducation suggests some misdirection of resources. The central importance of education to government policy is demonstrated by the decision to establish a new Centre for the Economics of Education, funded by the Department for Education and Employment. The new Centre is a joint venture between the CEP, the Institute of Education and the Institute for Fiscal Studies: it will be based here at the CEP and Stephen Machin, its new Director, explains to CentrePiece what the new Centre will do.

With unemployment in the UK continuing to show a steady decline, Steve Nickell and Jan Van Ours examine why both Britain and the Netherlands have been so successful in reducing unemployment, especially compared with some other European countries. Joanna Swaffield looks at a less attractive feature of the labour market – the continuing evidence of pay discrimination against women.

On the management front, David Holman and Sue Fernie report on new work completed on call centres – currently the fastest growing employment sector in Britain. It seems that people who work there aren't as unhappy as some commentators would have us believe. Stephen Wood takes issue with some of his academic colleagues, arguing that the latest management theories aren't yet backed by enough clear evidence that they work. And Richard Freeman looks at the prospects for the new form of shared capitalism.

When CentrePiece first started the Internet was still a mystery to most of us and few people predicted the scale of the revolution that has taken place in the past few years. It is a vindication of our decision to ask Danny Quah to write a regular column: and in this issue he argues we need have nothing to fear from the economic transformation taking place.

So we start the new century with an issue crammed with thoughtful and provocative ideas: enjoy them – and let us know what you think. You can write to me at centrepiece@lse.ac.uk.

Graham Ingham

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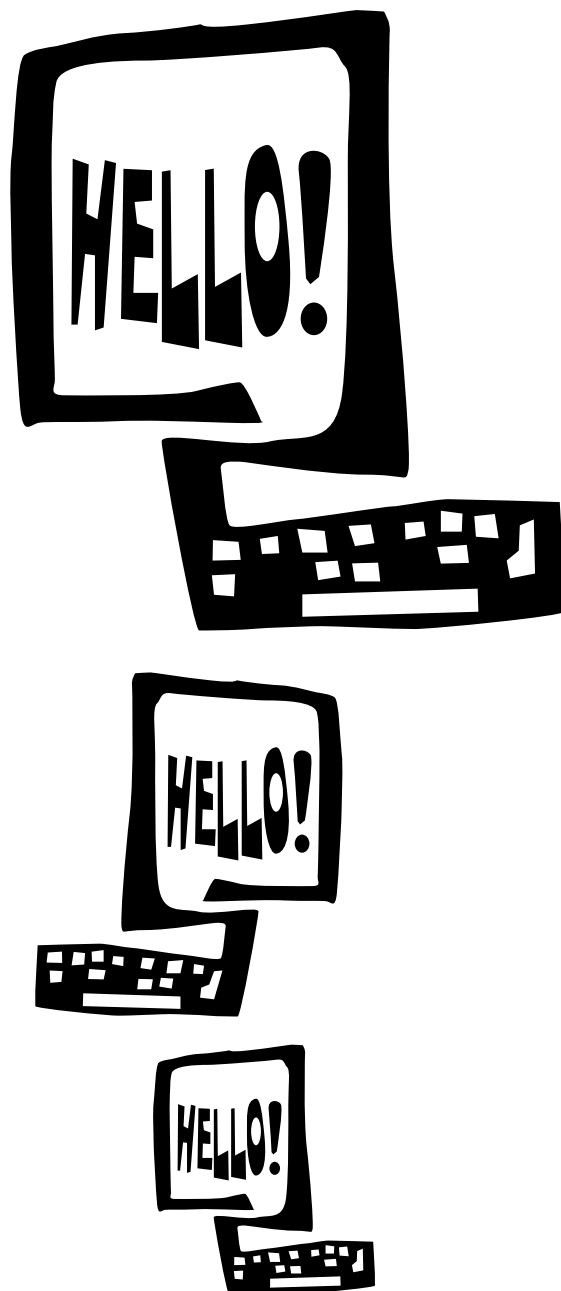
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Can I help you?

Call centres and job satisfaction

They've been described as electronic sweatshops, the dark satanic mills of the 21st century; some critics see them as battery farms where humans are kept in cells and force fed calls while pecking at a key board. There's no shortage of arresting - and uniformly negative - images both in the academic and popular press. It's perhaps not surprising then that the main effects of these 'sweatshop' conditions on employees are thought to be high levels of stress and poor job satisfaction, especially in comparison with other jobs. David Holman and Sue Fernie set out to test these assumptions.





Call centres are the fastest growing occupational sector in Britain, already employing more than 400,000 people – almost 2% of the working population. There's no doubt that for those of us who don't work in them, call centres conjure up an image of oppressive, stifling working conditions, constant surveillance, poor job satisfaction.

But is this negative image deserved? Until now, very little academic research has been conducted into this industrial phenomenon, and almost none of it has focused on employee well-being. We set out to fill in some of the gaps: to find out whether call centre work is as unpleasant as commentators suggest, and to discover what life in a call centre is really like. Our findings were surprising.

Most accounts of call centres focus on the negative characteristics that they are all assumed to share: repetitive, short and boring calls; the need for call centre operators to follow a specific script; constant management demands to handle calls quickly within a given time; technology that enables management to monitor every aspect of employee behaviour, including how calls are handled and how long each call takes; and part-time and short-term contracts allied to low pay. The implicit assumption is that one call centre is pretty much like another, that they are all managed in the same way. We wanted to test this assumption. We also wanted to test how stressful call centre work is, especially when considered in relation to other jobs. And what causes stress at call centres? Is it the need to answer calls within a specified time, and stick to a script? Or is it the loss of control and autonomy?

Preparing the ground

The research we conducted took place in three different call centres of a major U.K. financial institution, each organised around a different type of business. We will refer to the three centres as Bank-call, Mortgage-call and Loan-call. All three shared some common features, but they also had important differences. In all three, call centre agents (CSAs) spent about 80-90% of the time answering incoming calls that were mainly from external customers. The remaining time was spent in team meetings and on 'off-line' administration. When 'on-line', CSAs could not choose whether to answer a call or not – they had to answer the next caller in the queue. Call times and call quality were closely monitored by team leaders at each site. Team leaders spent most of their time coaching CSAs, collecting and analysing the statistics of each CSA (e.g., the number of calls handled per hour, average handling time), dealing with team matters, answering customer queries and complaints and attending meetings.

Because of the nature of the business they were handling, Mortgage-call employees required the most extensive product knowledge; Bank-call employees required the least. Only one of the sites, Loan-call, insisted that CSAs follow a call script and aim to finish a call within a set time target. While Bank-call and Mortgage-call did not specify an exact time, there was an expectation that CSAs should complete a certain number of calls per hour.

The call centres were chosen because we believed that they were fairly representative of the different types of call centres that exist in the U.K. It could be argued that Bank-call typifies the 'sweatshop' end, with short call times, low pay and repetitive work. Mortgage-call could be seen to represent the 'upper' semi-skilled end with longer and more complex calls and good terms and conditions. Loan-call represents somewhere in between these two ends of the continuum with good terms and conditions, fairly repetitive and short calls and call scripting.





Adequate coaching and training was associated with lower anxiety and depression, higher job satisfaction and higher general mental health.

Data were collected from interviews and a questionnaire that was completed by 628 CSAs and team leaders. This represented a response rate of approximately 80% of those employed at the three sites. We focused on four commonly used measures of employee well-being: job-related depression; job-related anxiety; job satisfaction; and general mental health. The measures of depression and anxiety are self-explanatory. Job satisfaction covers an employee's reaction to job features that are integral to the work itself (e.g., variety, responsibility) and those features that are external to the job (e.g., pay, hours of work). General mental health covers a person's general feelings of anxiety, confidence and ability to cope. We were able to make comparisons with the experience of other types of workers using a database of 40,000 respondents that has been built up by the Institute of Work Psychology over the last 25 years.

The first surprise

Contrary to much of what had been previously written about call centres, our results revealed that levels of employee well-being in the call centres we studied compared favourably with that experienced by office workers and manufacturing shop floor workers. More specifically, we found that levels of anxiety, depression and general mental health were similar to office and shop floor manufacturing. In some instances, for example at Loan-call, the level of depression was significantly *lower* in comparison with other occupations and with the other two sites. CSAs at all three call centres also reported fairly high levels of job satisfaction. This was particularly so at Mortgage-call and Loan-call. At these sites CSAs generally expressed satisfaction with their terms and conditions,

relations with their co-workers and relations between employees and management. A staggering 76% stated that they were satisfied with their level of pay at these two sites. CSAs tended to be less satisfied with some of the intrinsic aspects of their job, such as the level of responsibility, variety and opportunities for promotion.

The level of job satisfaction at Bank-call was significantly lower. CSAs here were much less satisfied with their terms and conditions, level of pay (here 64% said they were dissatisfied) and the intrinsic nature of the work. These differences were attributable to the different type of contract used and the more repetitive low-skilled nature of the work at Bank-call.

Identifying the stress factors

This is not to say that working in call centres is stress free. The second stage of our research was to identify which factors cause stress for CSAs. Lack of employee control over the timing of calls and the way in which they may handle calls has often been blamed by commentators. Many of the CSAs we studied were under pressure to finish a call within a specified time or, if not a specified time, were 'coached' if their call times were too high. Some CSAs were also required to follow a script, limiting their ability to vary the way in which they could talk to customers. Other sources of stress identified in the past have included the nature of the support offered by team leaders and managers, the level and type of monitoring and the type of human resource practices used e.g., payment systems, performance appraisal, training and coaching.

As far as job control is concerned, the results from our research show a clear pattern. Call centre agents will experience higher anxiety and depression, lower job satisfaction and lower general mental health when they have less control over their work. Specifically, CSAs who had greater control of the timing of their calls and whose calls were less scripted experienced greater well-being. These results are in line with the results of other research on stress that demonstrates a clear link between job control and well-being. We also obtained, from the computerised records of the call centres, the average call length for each CSA over a three month period. Our analysis of this data suggested that the longer the call, the less depressed and more enthusiastic CSAs were.

In our survey, call centre agents were asked to rate the extent to which their team leader and managers provided them with the support to do their job. This included communicating what was expected of them, discussing and solving problems, being open to constructive criticism and stressing call quality not quantity. Again the results clearly show that when team leaders or managers provided proper support, CSAs experienced lower anxiety and depression, higher job satisfaction and better general mental health.



The evidence from our research would indicate that not all call centres are 'sweatshops'.

A high level of monitoring was associated with high levels of anxiety and depression, and with low levels of job satisfaction and general mental health.



We also examined the impact of human resource practices on well-being. We asked agents whether the level of training and coaching they received was adequate, whether they thought the payment and bonus system was fair, and whether their performance appraisals were useful. We discovered that of these three practices, the adequacy of the coaching and training had the strongest relationship to well-being. Adequate coaching and training was associated with lower anxiety and depression, higher job satisfaction and higher general mental health. This association probably reflects the fact that training and coaching increases agents' skills and abilities. As a consequence, this enables CSAs to cope with the demands of the job more successfully. What's more, the contribution of these practices to employee well-being was independent of both the design of the job and team leader and management support. Effective coaching and training appear to be crucial human resource practices in call centres.

The perception that the payment and bonus system were fair and performance appraisals were useful was also significant for employee well-being. Our results show that it is not the absolute levels of pay and bonuses that affect well-being. CSAs are clearly realistic about what type of reward they can expect for the sort of work they do: what matters is that their pay and bonuses are seen to be fair and equitable. Further analysis also revealed that, with regard to these two factors, the design of the job and the support of managers and team leaders appeared to play a more important role than financial reward in contributing to employee well-being.

The Big Brother effect

We asked the call centre agents to rate the extent to which they felt they were monitored. We also asked whether they felt that when their calls were monitored the results were used to punish them or used to develop their skills and abilities. Across all three sites, CSAs felt that they were monitored too much. But the agents also stated that, on the whole, call monitoring was used to develop their skills and abilities rather than used as a means to punish them. It is perhaps because of this that CSAs often went on to point out in our interviews with them that, although they were monitored too much, they had nothing to be afraid of and they did not find the level of monitoring too intrusive. Indeed, some actually welcomed call monitoring: not only did they see it as a means by which they could develop their skills, but they also saw it as a fair way in which they could demonstrate their level of competence.

Nevertheless, a high level of monitoring was associated with high levels of anxiety and depression, and with low levels of job satisfaction and general mental health. The same pattern was evident when CSAs thought that call monitoring was used to punish rather than develop them. A test to reveal which factor had most bearing on well-being, suggested that the *purpose* of call monitoring had a more

significant effect than the actual level of monitoring.

We also found that monitoring had by far the biggest effect on well-being - greater than employee control, the support offered by managers and team leaders, and the perception of human resource practices. If call centre managers monitor too much and use call monitoring punitively well-being is likely to be low - even if they provide employees with high job control, supportive managers and well-run human resource practices. Monitoring clearly does play a critical role in call centres. If managers get it wrong, particularly if monitoring is used punitively and not developmentally, then it can have serious negative consequences on CSAs' well-being.

Sweatshops or?

The evidence from our research would indicate that not all call centres are 'sweatshops'. The levels of depression, anxiety, job satisfaction and general mental health we found were no worse than in other comparable forms of work. Indeed, in some instances, levels of depression were significantly lower and levels of job satisfaction significantly higher. But a degree of caution is needed in the interpretation of these results. The measures of well-being may not capture all the different ways in which stress and well-being might be experienced.

More significantly perhaps, all three call-centres had reasonably high absence rates; and Bank-call had an extremely high turnover rate. This could mean that employees were managing their stress at work either by reporting in sick, or, in the case of Bank-call, by leaving to go to another job. The excellent pay and conditions at Loan-call and Mortgage-call meant that leaving was often not a viable option for CSAs at these places.

Our findings appear to dash the hopes of those who love to strike a uniformly gloomy note about modern industrial practices. Of greater interest in the long term, however, is our finding that certain management practices can have a big impact on CSAs' well-being. Our research shows that, even within the limits of the job to be done, call centres managers always have a choice in how they design agents' work and how the agents are managed. Moreover, just because information technology enables you to monitor almost all your employees' actions doesn't mean that you should. The way in which agents are monitored is probably more important than the extent to which they are monitored. If call centre managers want to stop their employees from calling in sick, then they will need to address and manage successfully the human side of call centre work.

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Sue Fernie is a Senior Lecturer at the London School of Economics and a member of the Centre for Economic Performance.

Mirage or

Labour market performance in Britain and the Netherlands

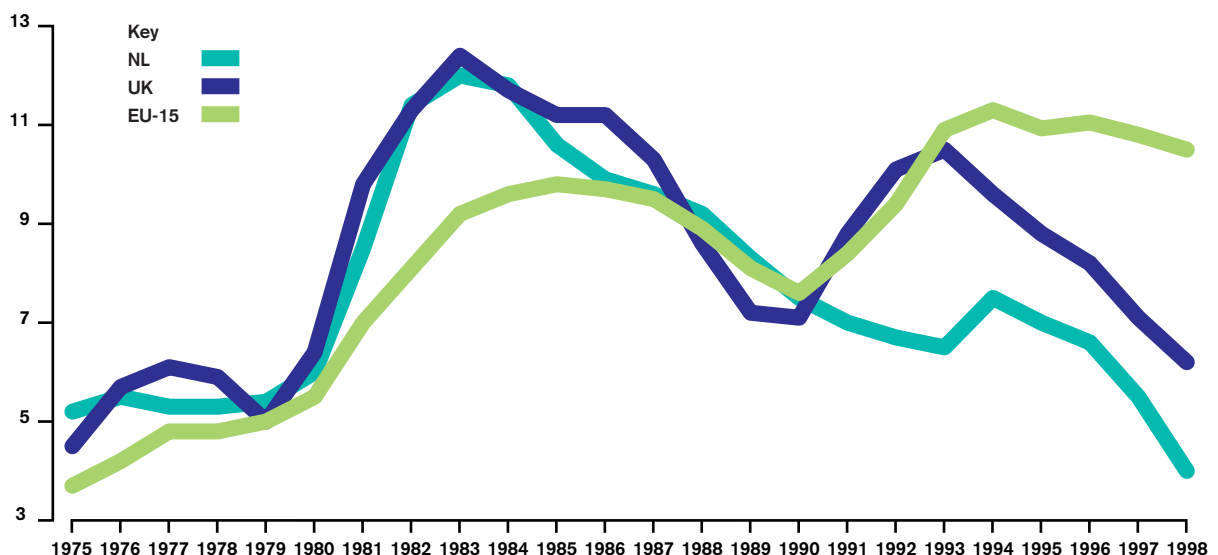
Unemployment in the European Union has been persistently high since the beginning of the 1980s: even at the end of the 1990s it still averaged about 10% of the working population. But Britain and the Netherlands are reckoned by some to have done much better than the average. Stephen Nickell and Jan Van Ours ask if this is true; and if so, why?

After two decades of persistently high unemployment, the jobless totals in most EU countries has finally started to decline. But progress has been slow, and some look admiringly – or enviously – on the ability of two economies, the UK and the Netherlands, to bring down unemployment faster and further. If their success is genuine, there may be lessons which other countries could follow. But it's important to establish first whether the British and Dutch performance is as impressive as it first appears.

Checking the facts

Figure 1 shows that in the early 1980s unemployment rates in both the Netherlands and the UK were well above the EU average. Not until the late 1980s did unemployment in both

Figure 1 Unemployment rates NL, UK and EU-15; 1975-1998 (%)



miracle?

countries fall to the EU average; yet by the late 1990s it was well below the average. In the Netherlands, this divergence proceeded steadily from 1990, while UK unemployment started to move below the EU average in 1993.

But what about *employment* during this period? The EU average itself fluctuated considerably. Figure 2 shows that on average, EU employment fell at the beginning of the 1990s and then rose again in the second half of the decade; by the end of the 1990s the EU average was comparable with the level seen in 1990. UK employment moved in a similar way during this period. But employment in the Netherlands rose throughout the decade: by the end of the 1990s it had increased by some 15-20%.

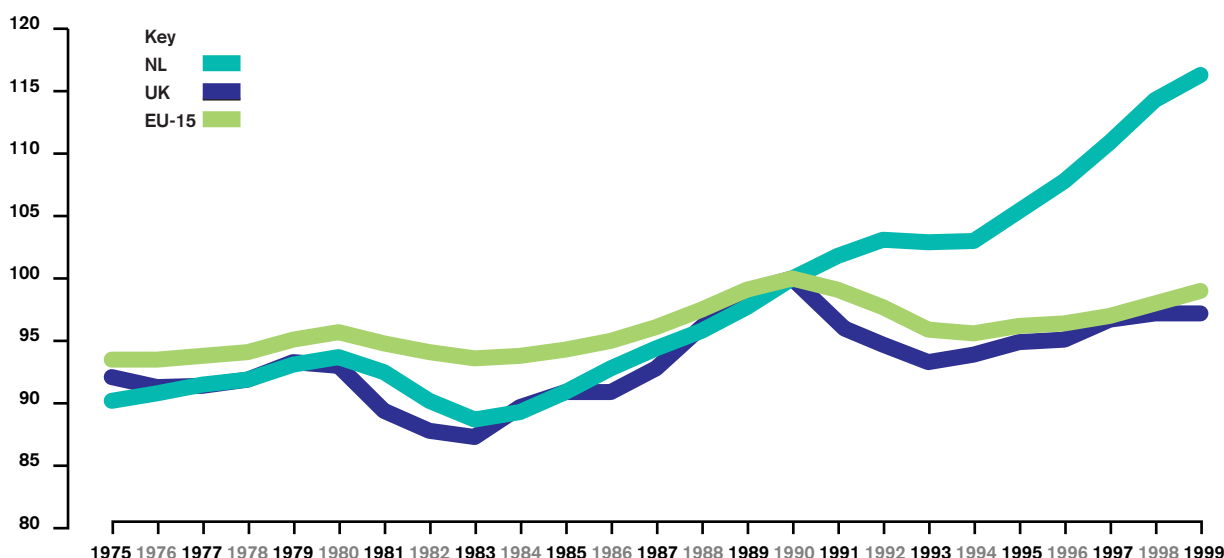
So how did the UK and the Netherlands do when compared with industrial countries as a whole? If we look at the performance of the OECD countries, we can see that some countries, such as Austria and Norway, have enjoyed low levels of unemployment throughout the period. But since the early 1980s, the UK and the Netherlands are among those countries which have shown the greatest improvement, along with Ireland and the US. Dutch unemployment is now below that in the US.

Getting the full picture

While unemployment rates are an important indicator of labour market performance they may not tell the whole story. Some countries systematically shift people out of unemployment into other non-working categories, notably disability and early retirement. Some believe this to be of major importance: President Jacques Chirac of France remarked that "if unemployment is lower in Britain than in France, it owes no thanks to the virtues of economic liberalism but because the English fiddle their figures". (*Le Nouvel Observateur*, Nov, 19-25, 1998). So we also need to look at non-employment rates that show the percentage of the population of working age who are not employed. These figures basically capture unemployment, disability, early retirement, full-time education and other elements of non-participation, notably married women involved in childcare.

In the Dutch case, we see a dramatic decline in non-employment rates for the prime-age (25-54) population. But this was from rather a high level and, in a sense, merely reflects a convergence to the sort of levels that are commonplace in most OECD countries outside the Catholic countries of Southern Europe and Ireland. In the UK, by contrast, there is no strong trend for prime-age

Figure 2 Employment NL, UK and EU-15; 1975-1998 (persons; 1990 = 100)



For employers, part-time jobs are useful because they allow firms to allocate more labour towards weekly peak hours in production (for example in retailing) and because they attract a new supply of labour.

workers, nor, indeed, is there a particular trend discernible for the older age group (55-64), although the non-employment rate for this group is significantly higher. The Netherlands, however, has one of the highest non-employment rates in the OECD among older age workers, with only a slight downward trend since the early 1980s.

So what is going on?

To understand what's been happening, it's worth looking more closely at some of these changes. There are key differences here between men and women. In both the UK and the Netherlands, there have been dramatic falls in the non-employment rates of prime-age women: far more of them now go out to work than in the early 1980s. For prime-age men, the situation has been pretty stable in both countries. For older workers, however, it is the men who have seen the dramatic changes, with fewer and fewer of them working over the last twenty years. Indeed currently, only around 45% of Dutch men and 56% of British men in the older age group are actually working. By contrast, the situation has remained stable for older women.

What's behind the fall in unemployment?

Overall, then, it is fair to say that the UK and the Netherlands have shown a distinct improvement in their performance. It's not quite the miracle some would like to think: but the decline in unemployment - by about 5 percentage points in the UK and about 7 percentage points in the Netherlands - is far too large to be explained away by the business cycle. So what lies behind such large falls?

Unions and wage bargaining

One important factor is the significant change in wage bargaining arrangements in the two countries. At its peak in 1979, more than 50% of UK employees belonged to a union. Since then it has declined dramatically and is currently below 20% in the private sector. The Netherlands has seen a gentle decline in union membership since the 1970s: but the main difference between the two countries has been in union coverage, that is the percentage of employees whose pay is determined by collective bargaining. In the Netherlands, union coverage has remained remarkably stable, going from 76% in 1980 to 81% in 1994. By contrast, in the UK it has collapsed from 70% in 1980 to close to 35% today. This dramatic fall in coverage is unique among OECD countries.

These changes reflect important shifts in institutional structures. In the early 1980s, the Dutch economy was in bad shape, with unemployment well above the European average and still rising. 1982 is considered by many to be a turning point. In that year, under the pressure of the seemingly endless rise in unemployment, a Central Agreement was reached between the labour unions and the employers' federation. The 'Wassenaar Agreement'

included arrangements covering wage restraint, reduction in working hours, restoration of profit levels of firms, labour market flexibility, early retirement and the creation of jobs. At the same time the government agreed to get its budget under control, reform social security and reduce taxes.

Since 1982, the Dutch union movement has been remarkably cooperative, explicitly moderating its wage demands. In return there is consultation, coordination and bargaining over all important issues of socio-economic policy between union federations, employer federations and the government.

All this is in marked contrast to the UK experience. From the mid 1960s into the early 1970s there was continually increasing union pressure on wages. For most of the 1970s there were sporadic attempts at coordinated wage restraint but by 1979 these had completely broken down. In the early 1980s unemployment reached unprecedentedly high levels after the second oil shock. But the coordinated approach seen in the Netherlands was more or less impossible in the UK with its completely decentralised union bargaining system - even had union leaders been in favour of it (which, by the 1980s, they were not). Nevertheless, the combination of Mrs. Thatcher's tough new legislation to reduce union bargaining power introduced in the 1980s and the decline in union representation in the private sector did, eventually, generate a significant reduction in inflationary pressure in the labour market.

The benefits system

But changes in union power and behaviour don't explain all the drop in unemployment. Changes in the benefits systems in the two countries - the financial incentives to work - have also played an important part, especially in the Netherlands.

In the Netherlands, a new benefit system was introduced after the 1982 Wassenaar Agreement (see above). One of the most important elements of the new system was the benefit sanction. Unemployed workers may have their benefit reduced if they don't follow certain administrative rules, the main aim being to increase the incentive to search for and accept available jobs. Similar sanctions exist for welfare benefits. In 1997-98 for unemployment benefit recipients, the sanction rate (that is, sanctions applied during benefit periods as a percentage of the average stock of benefit claims) was 36% in the Netherlands - among the highest in OECD countries (in the UK it was about 10%). Research suggests that benefit sanctions have a positive effect on the transition rate from unemployment to a job.

The UK picture is less clear-cut. The benefit system has certainly become tougher, with the important exception of housing benefit, which pays rent and property taxes. Housing benefits represent a substantial part of the income

It's clear that both for the Netherlands and the UK falling unemployment is a real phenomenon and not just the result of a statistical redistribution.

of the unemployed, particularly for single persons in high rent areas; and these benefits are withdrawn at a rapid rate (65p for every £1 of net income) when they become employed. This represents a serious work disincentive. Furthermore, for most people, unemployment related benefits remain available indefinitely. This tends to encourage long-term unemployment and the consequent persistence of high unemployment after adverse shocks as the long-term unemployed find it very hard to get back into work. The welfare-to-work (New Deal) policies being introduced by the current Labour government are designed to counteract this problem.

Measuring the impact

Other factors which appear to have played a part in reducing unemployment in the two countries probably include declining labour taxes and active labour market programmes - government financed programmes to help unemployed people find jobs. Table 1 (below) sets out some estimates of the relative contribution of these various factors towards the fall in unemployment. These numbers are very rough and ready but they indicate a significant contribution from changes in wage bargaining structure with smaller, but none-the-less important contributions from shifts in the tax-benefit system as well as from active labour market policies in the Netherlands.

More women are working

The fall in unemployment isn't the only striking change in the British and Dutch labour markets in the past twenty years. In both countries there has also been a sharp rise in the number of women working. In the UK, this reflects the steady rise in the proportion of prime-age women participating in the labour market, many of them on a part-time basis. The participation rate of this group rose from 66.7% in 1983 to 75% in 1998; of these around 40% work part-time (less than 30 hours per week). It's worth noting that the vast majority of the part-timers choose to work part-time (94% of them do not want a full-time job). These changes represent the continuation of a process which started after World War II with more encouragement from the anti-discrimination legislation in the early 1970s.

Table 1 Explaining Falls in Unemployment, Early 1980s – Mid 1990s. Percentage Point Declines

	Netherlands	UK
Changes in Wage Bargaining	2.8	2.7
Changes in Benefits	0.4	0.5
Changes in Labour Taxes	0.2	0.7
Active Labour Market Policy	1.1	–
Remainder (Cycle)	1.2	0.2
Total	5.7	4.1

The changes in the Netherlands were even more dramatic, with the participation rate of prime-age women rising from 42% in 1983 to 71% in 1998, of whom no less than 68% work part-time. This sharp increase is a combination of several factors. For a long time a much smaller proportion of Dutch women worked than their European neighbours, so the rise in female participation is partly a catch-up effect. But the removal of barriers to part-time employment have also been important. In the Wassenaar Agreement the unions gave up their resistance to part-time jobs, making it possible for supply and demand to balance out.

For employers, part-time jobs are useful because they allow firms to allocate more labour towards weekly peak hours in production (for example in retailing) and because they attract a new supply of labour. Women who withdrew from the labour market for family reasons return to take up part-time jobs and women who would otherwise have left the labour market altogether can instead stay on in part-time jobs. For women, part-time jobs are useful because they allow them to combine paid work with childcare. It is our impression that the increase in part-time jobs has had a positive effect on employment growth. The mere fact that effective labour supply increased allowed many firms to expand their business. Part-time labour is not just a redistribution of a fixed amount of labour over a larger number of workers (the 'lump of labour' fallacy). In the period of rapid growth of part-time work the total number of hours worked in the Netherlands has increased from 7.4 billion in 1985 to 8.6 billion in 1996.

While older men are leaving work

But if more women are working, the opposite is true for men in the older age group - especially in the Netherlands. The disability system in both countries seems to explain much of the decline. In 1998, no less than 32% of the male population aged 55-64 in the Netherlands were in receipt of disability benefits. In the UK the comparable figure was 20%. This is an enormous increase in both countries: in the early 1970s, the corresponding numbers would have been well below 10%.

It's not hard to work out why the increase has been so great. Comprehensive disability insurance was introduced in 1967 in the Netherlands, with a benefit equal to 80% of the previous wage. During the 1970s, the number of men of working age drawing disability benefit rose by a multiple of around four, not because of any rise in ill-health but simply because entry onto the disability scheme was determined, in part, by labour market prospects. Thus, at least half the entry onto the scheme arose directly because of redundancy. Despite a significant tightening of the scheme in the late 1980s, the numbers drawing benefit remain exceptionally high even now.

In the UK too the benefits system tends to be skewed.
continued on page 31



Overeducation A tough nut to crack

Are too many Britons overeducated? And if so, why?

It's a bizarre concept. At a time when there is almost universal agreement on the importance of education, both for individual well-being and for national economic prosperity, how on earth can we think of people as overeducated? To compete successfully in the global economy nations must provide high quality goods and services, produced by a highly-skilled workforce. To survive in today's knowledge-based society, an individual must be well-educated, and capable of continually updating his or her skills in a process of lifelong learning. For more than a decade, the complaint in Britain has been of insufficient investment in education and training. So how could anyone argue we are investing too much?

Of course they're not – or at least not in the way you might think. But there is an argument for saying that 'overeducation' is a serious problem in the UK; and that this phenomenon should lead to a reassessment of the way resources are used for education and training.

Overeducation?

As most people know, there's been a rapid and sharp increase in the provision of higher education in Britain. Table 1 (overleaf) shows that in 1997 3% of the working age population had a higher degree, more than double the proportion twelve years earlier; over the same period the proportion of people with a first degree went up by almost

half. Yet there has also been an increase in the number of people who are overeducated, particularly in the 1970s and 1980s. Overeducation means exactly what it says – people with more educational qualifications than they need to do their job – such as estate agents with PhDs or secretaries with degrees. The estate agent with a doctoral thesis will be no better at being an estate agent than someone with a degree; the graduate secretary will not need any of the skills acquired on a degree course to do the job properly.

So is overeducation a real problem?

We have looked at evidence from a number of different sources on the extent of overeducation in the UK. Both the 1986 Social Change and Economic Life Initiative (SCELI) and the 1997 Skills Survey ask identical questions of reasonably representative samples of the UK population. In particular, the surveys ask respondents to report which qualifications are necessary for their jobs. Comparing their answers with the actual qualifications that they hold gives a good guide to the extent of overeducation (and undereducation).

The results of this exercise are reported in Table 2 (overleaf). They show that a fairly consistent proportion of the population, around 30%, appear to have been overeducated in both 1986 and 1997. This figure is similar to

Overeducation means exactly what it says — people with more educational qualifications than they need to do their job — such as estate agents with PhDs or secretaries with degrees.

Individuals with good skills who work in jobs which only require low skills earn much less than their peers who find jobs that do match their skill level.

Table 1 The % of the UK Working Age Population With Each Qualification

	1985	1990	1997
Higher Degree	1.22	1.33	3.01
First Degree or NVQ5	6.73	7.12	9.34
BTEC, HNC, HND	2.10	2.37	5.00
Teaching Qualification	1.89	1.44	1.09
Nursing or similar qualification	2.33	2.44	1.99
BTEC, ONC, OND	2.06	3.24	2.52
City & Guilds – all levels	7.95	9.31	10.84
A level or equivalent	5.94	5.78	8.06
NVQ/ GNVQ level 3	–	–	0.64
NVQ/ GNVQ level 2	–	–	1.65
Trade Apprenticeship	7.94	10.95	5.21
O level or GCSE Grade A-C	16.22	14.51	17.67
CSE below Grade 1, GCSE below Grade C	5.56	4.15	3.09
Other professional/ vocational qualifications	4.23	10.66	10.60
No qualifications at all	34.55	25.90	18.68
Don't know	1.29	0.80	0.60
Total	100	100	100

Note: The data used here are from the UK Labour Force Survey and are weighted. Each figure is the percentage of the total UK working age population with that particular qualification.

Table 2 Over- and Undereducation in the SCEL and UK Skills surveys

	SCEL (1986)	Skills Survey (1997)
Under/overeducated		
Undereducated (–1)	806 (20%)	485 (20%)
Adequately educated (0)	2040 (51%)	1189 (48%)
Overeducated (+1)	1179 (29%)	808 (32%)
Total	4025	2482

Note: These data come from the 1986 Social Change and Economic Life Initiative (1986) and the UK Skills Survey (1997).

estimates for several other countries, suggesting that this is not a uniquely British phenomenon. Earlier work in the UK suggested a rise in overeducation in the 1970s and 1980s: the figures in Table 2 suggest that this trend may have levelled off in the 1990s. (It's worth noting that Table 2 also shows quite widespread undereducation, with 20% of the population having a qualification lower than the one recommended as necessary for their jobs.)

The evidence mounts

We also examined the results of two other surveys, both targeted at particular groups of people and both of which included questions about the educational requirements of respondents' jobs. A 1998 survey of Newcastle University graduates found that, amongst first degree-holders, the incidence of overeducation was 26%. The National Child Development Study (NCDS), which has followed a cohort of children born in a particular week in 1958 throughout their lives, was also helpful. The NCDS questionnaire sent

out in 1995, when the participants were 37, contained a question about educational requirements of jobs: the answers showed that 47% of the sample were apparently overeducated. This comparatively high figure can be explained by the large proportion of workers with very low qualifications reporting that their jobs do not require any particular qualifications at all. For example, workers with just one CSE pass but who are in jobs requiring no qualifications would be counted as overeducated.

Overeducation or qualifications inflation?

Overeducation isn't the same as qualifications inflation. The latter reflects the tendency of employers to set higher and higher qualification requirements for their employees. They do this because they need some way of identifying high ability candidates. As more people acquire A-levels and degrees as a result of the expansion of higher education, would-be employers narrow the field of suitable candidates by increasing the entry requirements. Even if the nature of

The overeducated seem to earn significantly less than their similarly educated peers who have found an appropriate job for their skills.

the job is totally unchanged, where previously employers might have asked for an A-level as a minimum requirement, they might now ask for a degree.

The Newcastle University survey was particularly helpful in making the distinction between these two phenomena. The Newcastle alumni were asked for the qualification required to get their job, as well as what qualifications were necessary actually to do it. Qualifications inflation would show systematic differences in the answers given to the two questions. Yet the majority of individuals (76%) gave the same response to both. And while 10% of the remainder said entry requirements were higher than needed to do the job, 14% said they were lower. The 1997 Skills Survey showed similar results: 78% of respondents who said they needed a degree to get their job also said that the degree was either 'fairly necessary' or 'essential' for actually doing the job.

Not much evidence of qualifications inflation, then, despite the rapid increase in the supply of qualifications. This is understandable: there is, after all, considerable evidence to suggest that jobs are becoming more demanding, and more skill intensive. Employers may be increasing the educational requirements of jobs because of this. The results of the 1997 Skills Survey, when compared with those from the 1986 SCELL, suggest that workers are spending more time training for their job and taking longer to master it. The Skills Survey also suggests that the use of computers increased between 1992 and 1997, and that they were used in a more complex way; it also shows a greater importance being attached to communication, social and problem-solving skills. All of this evidence is thus consistent with the view that job skill demands are genuinely rising.

So what is going on?

So there's a paradox: jobs are getting more complex but overeducation is still occurring. One obvious question therefore is: does overeducation matter? Perhaps individuals accept jobs that aren't commensurate with their education and skills in the knowledge – or hope – that once they have some experience they will progress to higher level jobs within the organisation they work for. If so, the evidence suggests these hopes are often dashed. Data from a sample of 1980s male graduates reveal that the majority of those who were overeducated in their first job after graduation had still not moved into a graduate-level job six years later, implying that for many overeducation is not a stepping stone to better things.

Does any of this matter? From the evidence we have, it certainly does for the individuals involved. The overeducated seem to earn significantly less than their similarly educated peers who have found an appropriate job for their skills. The 1997 Skills Survey clearly illustrates this. We classified each individual's *actual* qualifications to one

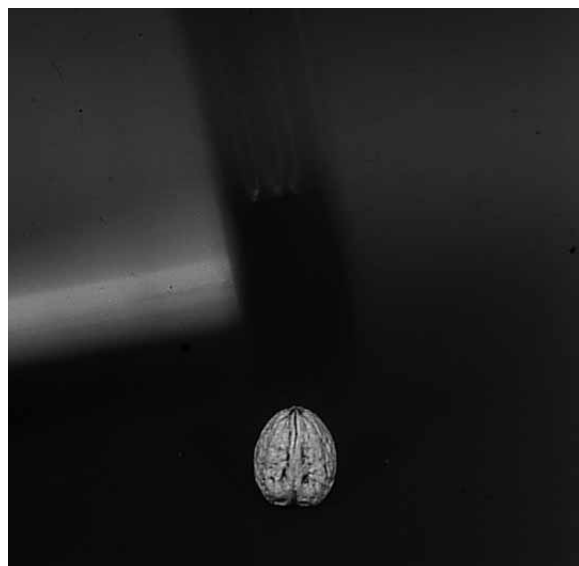
of five levels, and then the level of education *required* for their job to one of the same five levels. We then defined the extent of overeducation (on a scale from 0 to 5) as the actual minus the required education level if the former is greater, and zero otherwise. (Similarly, the extent of undereducation can be defined as the required minus the actual education level; again if the former is greater, and zero otherwise.) We then used this information to investigate the effect of being overeducated on earnings.

Table 3 (below) shows the results, given as the percentage change in an individual's hourly wages for each point change in the level of over- and undereducation. The figures are striking: the greater the extent of a person's overeducation, the lower their relative earnings, by a significant amount. Thus there is a 12% reduction in women's wages for each point increase in the level of overeducation. For example, if a woman holds a degree, but is performing a job requiring only a sub-degree level qualification, she will earn 12% less than a similarly qualified woman working in an appropriate job. For men, the reduction in wages is smaller, but it is still 5% for each level of overeducation. These results are consistent with previous research that has also found that there are substantial real wage penalties associated with being overeducated.

Table 3 Wages of the Over- and Undereducated, Relative to the Adequately Educated

	Female	Male
Overeducated	-12%	-5%
Undereducated	16%	12%

Note: These data are from the 1997 Skills Survey.



Individuals with good skills who work in jobs which only require low skills earn much less than their peers who find jobs that do match their skill level.

So why does overeducation occur?

It's hard to see why anyone would do a job for which they are overeducated. One explanation is, of course, simple bad luck. In an imperfect world people may have to take a job for which they are overqualified; and the financial (and emotional) costs of moving jobs might then make it difficult to change. Another, perhaps more convincing, possibility is that not all individuals with the same level of education are equally productive in the workplace. Perhaps the overeducated are less able in some way than those with the same education level working in a job which matches their qualifications.

This is a hypothesis we can test, using data from the NCDS. Besides giving us information on respondents' education levels, this survey also provides the results of various ability tests (mathematics and reading skills at age 16, and literacy and numeracy at age 37) which were given to some participants. We examined these test scores to see whether they could explain why some individuals are overeducated and others not. The results in Table 4 (below) underline the importance of good numeracy skills in particular in reducing the likelihood of an individual ending up in a job for which they are overeducated. Each point gained on the numeracy test, for example, cuts the chance of being overeducated by almost 2 percentage points.

Are we looking at the wrong thing?

So it does seem as if the overeducated are less able, on average, than those appropriately educated for their job,



Table 4 The Percentage Point Reduction in the Probability of Being Overeducated, for Each Point Increase in Test Score

	Age 16	Adult
Mathematics/numeracy	-0.9	-1.8
Reading/literacy	0.3	0.6

Note: These data are from the National Child Development Survey

Table 5 Fields of Study by Overskilled Status

Field of study	Overskilled (%)	Not-overskilled (%)
Fine and applied arts	2.55	0.86
Humanities and related fields	6.25	2.15
Commerce, management and business administration	15.16	19.92
Engineering and applied sciences	14.35	21.65
Health professions, sciences and technology	11.38	16.43
Other	16.60	10.75
No specialisation	4.84	2.48

Note: data source is the British data from the International Adult Literacy Survey

Those who find themselves overeducated for the jobs they do lack the specific skills — especially quantitative skills — to enable them to move to other, better paid jobs.

with a lack of numeracy skills being of particular importance. This might give us a clue: perhaps the overeducated have actually got jobs which are appropriate to their lower skills levels. If we could measure job requirements in terms of skills rather than qualifications would we then see that most individuals have appropriate jobs — implying that the labour market is successfully matching the demand and supply for skills?

Wrong again. That isn't what we found when we tested this hypothesis using the International Adult Literacy Survey (IALS). This survey measures each person's skills, using three tests focusing on literacy and numeracy. We first took each individual's average score across the three tests and allocated them to one of four skill bands. We then used responses to the survey's questions about how often participants needed to use certain reading, writing and arithmetic skills at work. We used the responses to these questions to measure the skills required on the job, and again allocated the results to one of four required skill bands. We then arbitrarily defined an individual as 'overskilled' if their skill level was 2 or more levels higher than their job requirement, and similarly 'underskilled' if their skill level was 2 or more levels below that required by their job. A significant number of participants fell into one of these two categories, particularly the former.

Even in spite of our rather arbitrary classification of actual and required skills to the four bands, the extent of over- and under-skilling can be shown to have real effects on individuals earnings, similar to that found amongst the over- and undereducated. We found that, even taking into account the gender, age, education level and full- or part-time status of workers, individuals with good skills who work in jobs which only require low skills earn much less than their peers who find jobs that do match their skill level. For example, a worker with very high skills (level 4) working in a very low level job (level 1) earns £7000 a year less than a similarly skilled individual working in a level 4 job. Not using one's skills can therefore have very real effects on one's earnings.

So what is the answer?

The trail hasn't gone entirely cold, however: the IALS does offer some clues about the causes of overskilling (and, in consequence, overeducation). As we noted, the actual skills variable is a composite measure, based on numeracy and literacy tests. We've already established that the overeducated are more likely to have poor numeracy skills. It turns out that the overskilled are also more likely to be deficient in this respect. This finding is reinforced by information elicited from those participants who have had some education or training in the twelve months prior to the survey. Table 5 (left) shows the percentage of participants who studied in a particular subject, divided into those who are classed as overskilled and those who aren't. The figures clearly show that the overskilled are more likely to have studied subjects like arts and humanities; and corre-

spondingly less likely to have studied subjects with some quantitative element — such as engineering, science, business management and so on. This suggests that at least in some non-quantitative courses, the skills being acquired aren't those demanded by the labour market.

Too much education?

Overeducation and overskilling are real phenomena in the British labour market. They have real — and financially uncomfortable — consequences for the individuals affected. That doesn't mean there are now too many graduates in the UK: indeed, the figures suggest that graduate pay has remained stable or even increased relative to the wages of unqualified workers over the last decade or so; and it's not clear that overeducation has increased in recent years. Nevertheless, the proportion of employees who are overeducated remains large and should be addressed.

Rather than reducing the number of graduates, one solution might be to pay more attention to the mix of subjects being studied. There has been an increase in the demand for skilled labour, particularly related to technology and computerisation. It should in theory be possible to match this increase in demand to the growing supply of skilled labour: yet the evidence suggests that this is not happening, at least in part because those who find themselves overeducated for the jobs they do lack the specific skills — especially quantitative skills — to enable them to move to other, better paid jobs.

A word of warning though. There is a limit to which economics can address subjects of this nature. We cannot offer conclusive evidence which enables us to settle arguments about the nature and extent of education. But we can offer a cautionary note, to ensure that the content of education is given due weight at a time of rapid expansion of its provision.

Francis Green, Steven McIntosh and Anna Vignoles are all members of the CEP.

Putting the cart before the horse

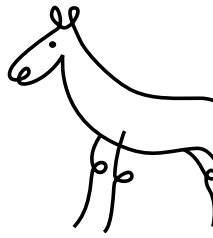
How sure can we be about the management revolution?

The work of management theorists and practitioners like Henry Ford and Frederick Taylor dominated work organisation for much of the twentieth century. But in the past twenty years management thinking has undergone a revolution: High Involvement Management (HIM) is now widely seen as the route to corporate success in an increasingly competitive global environment. Stephen Wood asks whether the claims made for HIM are, given the evidence so far, exaggerated.

It's difficult these days to avoid the jargon of modern management. Most people have heard of flexible working methods, teamworking, and employee involvement, even if few really understand the concepts behind these terms. High involvement management (HIM), which encompasses all these practices (and which is sometimes known as Human Resources Management or HRM), is undoubtedly one of the management fashions of the moment. Its proponents argue that it is a universally applicable best practice model. It is central to the argument that investment in human capital is the route to competitiveness and economic growth and, indeed, to the British government's philosophy of partnership in industrial relations exemplified in the Employment Relations Act.

No wonder then that academic research has been invigorated by the development of HIM. There has been a spate of studies, mainly in the US, aimed at testing the relationship between HIM and superior organisational performance. Claims that the evidence in favour of HIM is accumulating steadily are now commonplace. As the academic advocates of HIM grow more confident they have even begun to talk about high *performance* management – as if the two terms are interchangeable, so conclusive do they believe the evidence to be.





In my view these claims are premature and exaggerated. High performance management might strike a chord with many policymakers and human resource managers as equity issues take second place to the economic effects of management methods. But our level of understanding in this area is limited. The conclusions which the advocates of HIM like to draw from the research – much of which they have themselves conducted – are not necessarily warranted.

What is HIM?

In the first place, it's not clear that everyone who talks of HIM means the same thing by the term. The underlying notion of HIM is an abandonment of the ideas of Frederick Taylor which relied on narrow job definitions and financial motivation. Two distinct positions can be identified – that which focuses on job design and that which stresses the role of performance related pay (PRP). Job design theorists argue that what matters is the change in the way work is organised: so that a greater emphasis is placed on enriching jobs, teamworking, functional flexibility (workers doing different jobs according to the needs of the organisation rather than sticking to the same job every day) and on involving workers in innovation within the company (using suggestion schemes, quality circles and so on). Other writers focus on performance pay, emphasising performance management systems – which incorporate PRP – that are designed to ensure that workers use whatever discretion they have for the benefit of the organisation. For such writers, HIM means focusing workers on the company's bottom line.

Job design and performance related pay aren't incompatible. But many advocates of HIM are as adamant that PRP has no part to play in their philosophy as were Deming and others behind the development of Total Quality Management (TQM). For them, high involvement methods are aimed at generating greater job involvement and skill development, with enhanced pay satisfaction playing little or no role.

Money money money

The question of what role money does play is nevertheless central to the controversy: specifically whether some pay systems are better able to support HIM techniques than

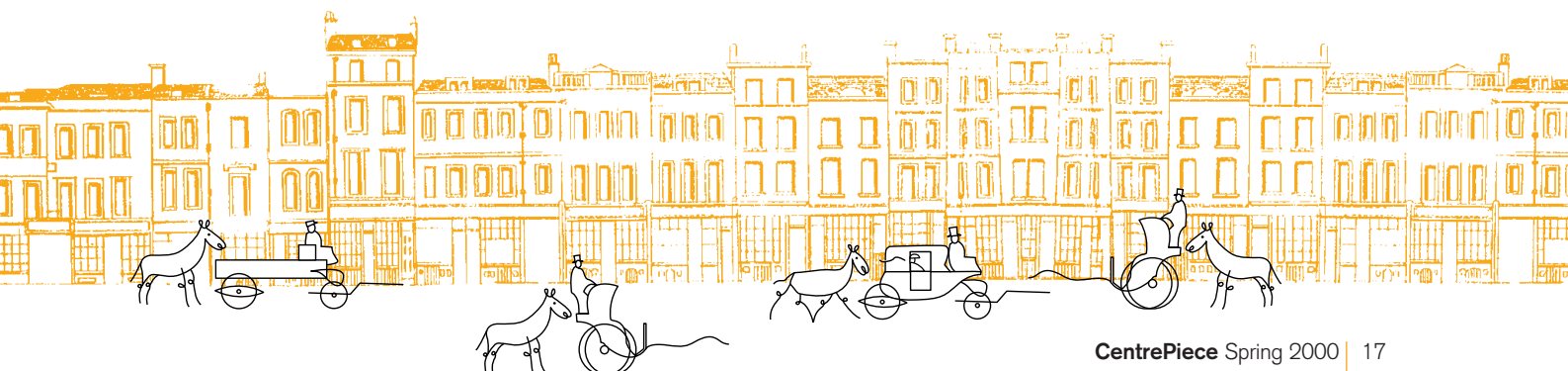
others. Basing pay on the acquisition of skills (knowledge-based pay) is perhaps the system which dovetails best with HIM practices, although there is also a strong case for taking pay out of the equation as far as possible by relying on high flat salaries. Mars, for instance, has consistently adopted this approach, preferring to offer flat salaries which are several percentage points higher than local rates. But excluding individual pay systems from the HIM structure still leaves a question mark over systems not based on the individual – company profit-sharing and share-ownership schemes, for example, which enhance commitment.

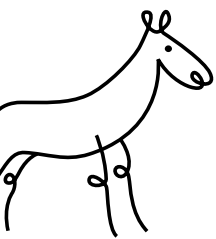
Does job design matter?

If worker motivation derived from the actual job (rather than from the wages paid) is judged to be crucial in HIM it presumably follows that trying to involve workers without enhancing the quality of their jobs will have little or no effect. But it may be that HIM can have at least some impact even when jobs are fragmented and low-skilled, as they are under Taylor's system. Much Japanese management falls into this latter category: group working and quality circles are often implemented in assembly-line situations. Consequently, at the extreme, job rotation might amount to no more than switching between one de-skilled job and another, with off-the-job training and problem-solving groups limited in practice to perfecting the design of low-skilled tasks. The issue then is the extent to which this constitutes HIM. The answer to this will ultimately be empirical: if job redesign is the most significant ingredient for employee commitment and performance in the HIM package, then the impact of involvement programmes which leave routine jobs intact will be limited. If redesign is not the critical factor, then such programmes may enjoy the success associated with Japanese methods.

Uncertain linkages?

In addition to the divisions and doubts about the definition of HIM, there are also different views on how it links to performance. One key question is whether HIM techniques need to be adopted as a complete package in order for the effects on performance to be significant. The emphasis in much human resource management literature is about the synergistic effects: the idea that groups of management practices hang together so that the whole effect is greater





The danger is that the practitioners — managers — will be talked into using techniques before their superiority has been proven and even before the principal issues have been clarified.

than the sum of the parts and superior to piecemeal adoption of certain techniques. But if HIM practices are as beneficial as some of their advocates claim, one might expect that an organisation could benefit even from their partial adoption. There is nonetheless a latent dispute about the extent to which individual HIM techniques are independent of each other: some imply that such techniques can have little or no impact when used in isolation.

Best practice?

A second dispute is more fundamental. If synergy itself is important why shouldn't a set of practices based on Taylor's theories be appropriate in some circumstances? HIM advocates are especially insistent that their methods are always best no matter what the specific problems of the organisation to which they are applied. But the alternative argument, that fitting management practices to specific needs and local contexts is a valid approach, still holds considerable sway. The implication here, of course, is that HIM will not invariably outperform other management techniques: where worker initiative is not needed, or where the external environment in which an organisation operates is stable, HIM is unlikely to offer many advantages, even if implemented thoroughly. There may, therefore, be no general relationship between HIM and organisational performance.

Necessary but not sufficient

Scholars are also divided about the extent to which HIM is a sufficient condition for corporate success. For some of its advocates, HIM is a necessary but not sufficient condition: they argue that in order to reap the benefits of HIM other factors must play a crucial role. Some, for instance, see HIM as closely associated with TQM and 'lean production' techniques, arguing that the adoption of total quality methods is a vital ingredient for ensuring that HIM is effective. In this context, HIM can be seen as one aspect of the ending of the trade-off between quality maximisation and cost minimisation. There is nothing to be gained by empowering and involving employees if the facilities needed to deliver a high quality end product aren't in place.

Another line of argument stresses the critical role of top management in ensuring the successful implementation of

HIM. Senior executives need to value the human resources of the organisation and support the personnel function within the organisation. This is essential if the greater worker involvement and higher skill base which HIM practices develop are to be used to the overall benefit of the organisation.

What does the research tell us?

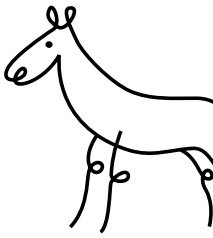
The growing body of research on HIM unfortunately does little to help resolve the controversies I have identified thus far: it is inconclusive and uneven in the picture it paints. An analysis I conducted of the major studies published during the 1990s shows them to be limited in scope and with varying results. Typically they tend to measure the extent to which an organisation (this could be plant, workplace or company, depending on the unit of analysis) is adopting high involvement or high performance management by aggregating their use of a set of practices, and establishing whether there is a linear relationship between this and one or more performance indicator. The list of practices is generally put forward with little or no discussion of why they were selected or of any theoretical roots.

The groups of techniques included in the studies overlap, but vary considerably. Particularly significant is the fact that some studies include neither job design practices nor performance-related pay; while some include one or the other with few including both. Studies that assess whether the list of practices that they focus on tend to co-exist before examining their performance effects are the exception. They have in fact produced positive results; though those that include both job design practices and pay systems have not produced decisive evidence about whether these two factors tend to be used together or as alternatives. Nor have they been able to say whether one is more effective than the other.

Though a fair number of the researchers argue that their research supports the universal validity of the high-involvement management, their conclusions are not always unequivocally supported by their research evidence. Most significantly, the effects of HIM vary between performance measures even within one study; and some of the results could be interpreted as supporting arguments other than the simple universal one. Moreover, some studies support a more contingent argument and those that examined HIM in



From Marx onwards there has been a long tradition of grand social theorists basing their work on the latest writings on management and technology.



conjunction with TQM show the effects of both are enhanced when they are used together.

The studies vary so markedly between each other that no two studies differ simply in only one or two ways. It is thus not possible to assess whether the different results reflect in any systematic way differences in underlying concepts, research designs or research sites. In addition there is not as yet a single study which has addressed simultaneously all the conflicting strands of the HIM argument discussed above. If one's arm were twisted to make an "overall" conclusion on the balance of the evidence so far, the strongest evidence is probably most supportive of the 'lean production' argument that stresses that the effects of high-involvement management depend very much on whether total quality or lean production methods are successfully installed in the organisation. But even this conclusion would be rash.

Jumping the gun?

Those academics who argue that evidence in favour of HIM is accumulating are at best jumping the gun; at worst they are guilty of encouraging glib but misleading prescriptions. The research findings are conflicting, and the debate is still in its infancy. The danger is that the practitioners – managers – will be talked into using techniques before their superiority has been proven and even before the principal issues have been clarified. If the successful adoption of HIM depends crucially on a wider series of changes including TQM, piecemeal adoption of HIM techniques will bring frustration among managers and could help discredit what might otherwise be a good idea.

This certainly happened at British Rail (BR) in the pre-privatisation days. BR invested heavily in training station staff to be flexible, team-oriented and customer-focused, for the employees only to find when they stopped what they were doing in order to answer a customer's query about a particular train (as they were encouraged to do by management) they could not answer it because no systems had been set up to provide them with relevant information!

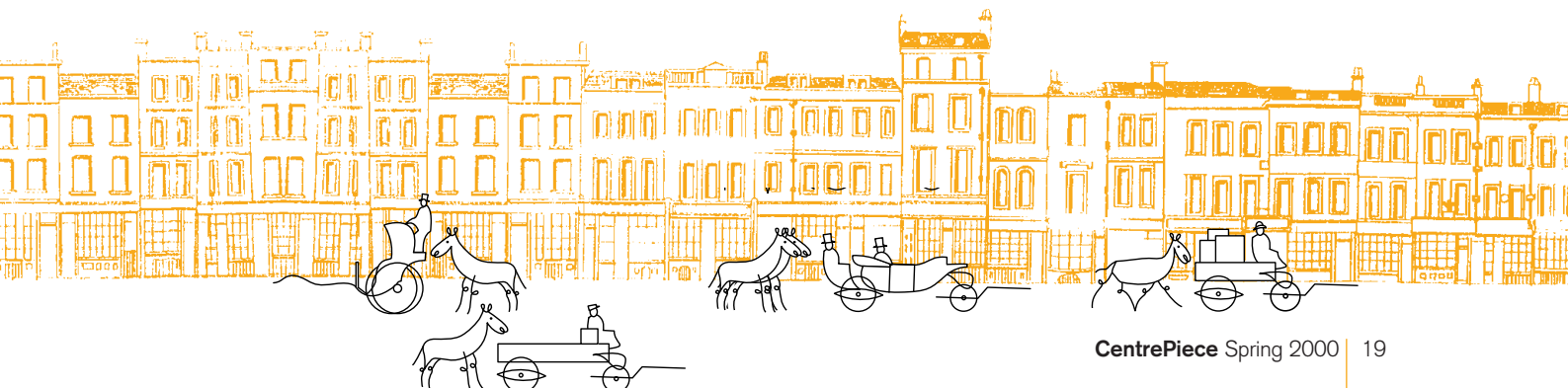
More research is needed to clarify whether HIM techniques must be used as a total package for them to be effective; and if not, which techniques are most effective, work best and in what context: and what practices bring benefits too

small to warrant the time and effort involved in setting them up. This may seem an obvious conclusion but there is a serious danger that the need for inclusive research which addresses all the issues will be overlooked in the drive to adopt HIM in the (as yet unsupported) belief that it undoubtedly involves best management practice in all situations.

The great risk in the way the arguments for HIM are being advanced by its advocates is that it will become part of the conventional wisdom too quickly – that too many of the claims being made for it will remain untested, unsubstantiated, or at least insufficiently supported by the research. From Marx onwards there has been a long tradition of grand social theorists basing their work on the latest writings on management and technology. Many of the latest contributions appear to be continuing this trend. So just as Fordism and Taylorism became common place within the social sciences to reflect the pattern of social arrangements associated with the rise of mass production, so the term Post-Fordism has been used to give a label to what appears to some to be a new form of society. This all seems rather misplaced to specialists in work organisation: whatever the social theorists like to think, the extent of innovative practices at the workplace level is not high and the precise nature of their relation to Taylorism is still unclear. Just as Lenin and others relied too heavily on Taylor's own writing – much of which advocated practices which he could not even implement in the factories in which he worked – so the post-modernists appear to be mirroring the latest management gurus. It is a particular cause for concern at a time when the study of the management of work is flourishing.

Stephen Wood is Research Chair of the Institute for Work Psychology at the University of Sheffield and a Research Associate of the CEP.

Further reading: Wood, S. J: Human resource management and performance in *International Journal of Management Reviews*, Vol. 1, No. 4, pp 367-413.



Women's pay

Is discrimination still an issue?

It's thirty years since the Equal Pay Act came into effect in Britain. Yet the wages of men and women are still surprisingly different. Joanna Swaffield asks why.





The 1970 Equal Pay Act was a landmark in the struggle to end discrimination against women at the workplace. And there's no doubt that since then women at work have achieved a great deal: there are more of them, more of them get promoted, and they are better paid. But in spite of the undoubted progress that has been made, there's still a big gap between what men and women earn. Why should this be? Is discrimination still the principal cause of the difference – or is there another explanation?

How big is that gap?

Figure 1 (below) shows the stubborn persistence of the wage gap – what's known as the gender wage differential. Using data from the New Earnings Survey in the ten year period from 1986-1996 we can see that the differential exists at all wage levels – from the top decile (the top 10% of wage-earners) through the middle to the very lowest paid workers in the bottom decile. The figure shows that the gap between men and women remained pretty constant over the period at all wage levels.

If we look at the five years from 1991-1996, we find that the difference between male and female gross hourly wages, expressed as a percentage of the female wage, is approximately 28% at the highest decile, 23% at the median and 19% at the bottom. This means that, for example, the top male earners were paid 28% more than the top female earners. It does not necessarily mean that

high earning men got more than women doing exactly the same job.

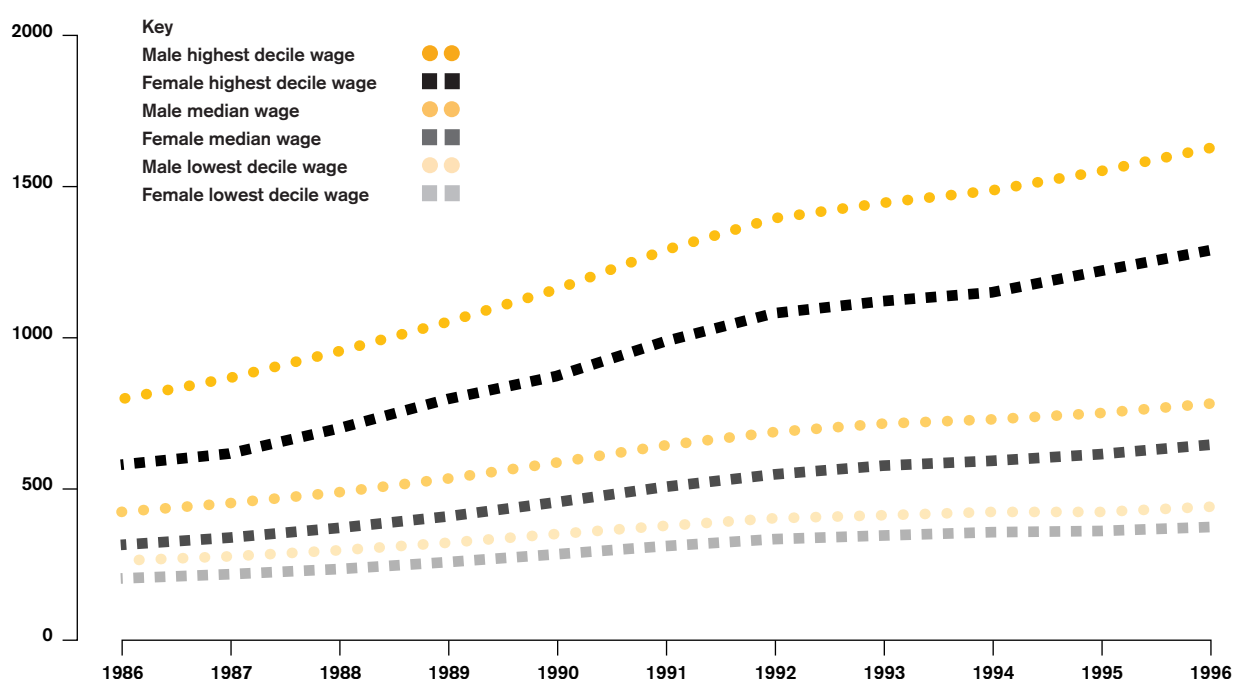
How can the gap be explained?

There are several possible explanations for this gap – straightforward discrimination is only one of them. Another possibility is that women end up in jobs with low wages and poor promotion opportunities. It could be that male workers are more productive. Direct discrimination in the labour market will only exist where workers, who are equally productive, are rewarded differently. To decide which of these factors is most important, we need first to examine the pay differences in more detail. Men and women may have different labour market characteristics which might have an impact on their productivity: they may, for example, have different educational qualifications, or different training and on-the-job experience. It would not be unreasonable to pay different rates to people who were performing their task more effectively because, for example, they had more work experience or higher qualifications than a work colleague – whatever the gender of that worker. Only if men and women were rewarded differently for having the same qualifications or experience, would gender discrimination exist.

Meet Mr and Ms Identical

Let's consider two hypothetical people who are of equal age; the same natural ability; who finished their education at the same time with the same qualifications; and who

Figure1 Male and female hourly wages over time (1986-1996)





It would not be unreasonable to pay different rates to people who were performing their task more effectively because, for example, they had more work experience of higher qualifications than a work colleague.

working in similar firms: they are different in only one important respect – that of work experience. The first individual, A, has been working full-time all his working life, whereas the second individual, B, has worked full-time all her working life, with the exception of two years when she was out of the labour market. Let's also assume that each year of labour market experience is rewarded by a 1% increase in the wage paid by the employer, since each year of work makes the worker more productive. It would be natural, therefore, to expect A to have a wage approximately 2% higher than B. This would not be gender based wage discrimination: it would simply reflect the fact that the two workers have (slightly) different, productively enhancing labour market characteristics. But if A's wage were greater than B's by more than 2% (and B's ability to do the job had not decreased while out of the labour market) this would mean A was getting each year of labour market experience rewarded at a rate greater than 1% (the rate we assumed was the correct rate to reward such experience). This would be evidence of gender based wage discrimination.

Accurate measurement of labour market characteristics is therefore important in trying to understand why the gender pay gap persists. Work experience is particularly important since there is often a clear divergence between the genders – women, for obvious reasons, tend to have less work experience than men. But measuring work experience is difficult – it would be necessary to interview each individual about their particular experience to build up a proper picture and such information is rarely available. So we have to construct a proxy for this measure: which we call poten-

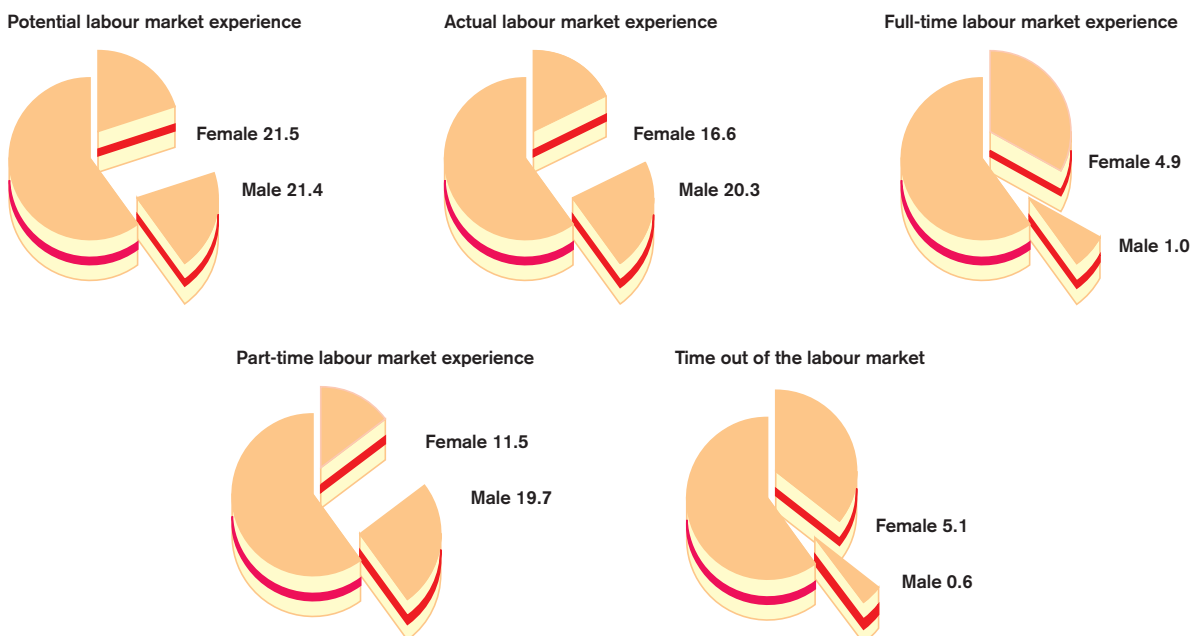
tial labour market experience – the amount of time someone could have spent at work. A fifty-year old who left school at fifteen, for instance, can be said to have potential work experience of 35 years. Of course, this is only a rough approximation for someone's actual experience: one obvious drawback is that the fewer absences someone has from the labour market, the more accurate will be this proxy measure.

Just how serious this drawback is can be seen from going back to Mr and Ms Identical. Both would have the same potential labour market experience, since they are both of the same age and both left school at the same time. The proxy measure wouldn't reveal that Ms B had left the labour market for two years, and so we would be puzzling over why Mr A got 2% more pay: indeed, we would probably have attributed it to gender pay discrimination.

A source of confusion

This may all seem very technical and arcane. But there's a serious problem here. As we've noted, the difference between actual (but difficult to measure) and potential (easy to measure but much less accurate) work experience is going to be greatest for those people who've temporarily left the labour market at some point in the past. We also know that women have been much more likely to have spent time away from work. Until relatively recently, women tended only to work in the formal paid labour market until they got married, after which many would leave work to look after the home and family.

Figure 2: Comparisons of alternative labour market experience measures
All figures are shown as experience in years
Number of individuals Female: 6,923 Male: 5,961



Low-paid women with children, for example have little chance of improving their work experience — which would, as we can see, greatly improve their pay prospects.



Of course, this is no longer the case: but it is still relatively common for women to leave the labour market when they first have children and to return only when the children are older. Men, by contrast, have tended to work continuously (except when unemployed) from first leaving school or university until they retired. Such stereotypical behaviour has also changed in recent years, especially for unskilled or low-skilled male workers who have increasingly been forced into prolonged periods of unemployment or inactivity, as the labour market has changed. In spite of all these recent changes, however, it's women who remain more likely to have spent time away from the job market and for whom the gap between actual and potential work experience will be greatest.

The challenge, then, is to find a way of resolving this problem so that we can properly separate out pay differences which result from different labour characteristics and those which result from discrimination.

We can do this using the British Household Panel Survey (BHPS), which usefully includes detailed lifetime labour market histories of workers. This enables us to make direct comparisons of the alternative measures of labour market experience — actual and potential. We can see clearly in Figure 2 (left) that the measure of potential labour market experience is similar for both female and male workers; but that for women the actual labour market experience is much lower (approximately 5 years on average) than potential experience. (It's also interesting to note that women have much more part-time work experience than men.)

Homing in on discrimination

All this, of course, enables us to get at the answer we've been searching for: how much of the gender wage differential is a result of direct discrimination by employers? The box below attempts to measure how much of the pay gap can be explained by different wage rates for the same labour market characteristics. Even when we have allowed for actual rather than potential labour market experience, and even when we've sorted actual experience into full-time and part-time, we are still left with high figures: for all employees, the findings suggest that 41.5% of the gap between women and men's pay is a result of direct gender discrimination. When we look at full-time employees only, that figure rises to 50%.

Pay discrimination may have been reduced but it is still substantial. There's also work to be done in narrowing the gap between the different labour market characteristics of men and women which, as we've seen, account for quite a large proportion of the difference between male and female earnings. Narrowing the gap will not be easy. Low-paid women with children, for example, have little chance of improving their work experience — which would, as we can see, greatly improve their pay prospects. Much work remains, therefore, before the aims of the Equal Pay Act have been realised.

Joanna Swaffield is a member of the CEP Labour Markets programme.

Percentage of the gender wage differential due to differences in returns to characteristics

Gender wage differential across all employees

36.5%

A 70.4%

B 51.4%

C 41.5%



Number of observations 12,884

The first part of this figure looks at all employees: where the gender pay differential is such that on average men earn 36.5% more than women. Column A uses the measure potential labour market experience to calculate the extent to which men and women are paid differently for doing the same job with the same qualifications: this suggests that 70.4% of the wage gap is accounted for by discrimination. Column B uses actual labour market experience to make the same calculation: the percentage of the wage gap accounted for by discrimination falls to 51.4% since

Gender wage differential across full-time employees

21.7%

A 70.4%

B 47.4%

C 50.0%



Number of observations 10,067

this approach enables the different labour market characteristics to be more clearly identified. The element of discrimination falls still further, to 41.5% when actual experience is divided into full and part-time.

The second part of the table shows the same calculations, this time for full-time employees only. There is a similar but not quite so pronounced fall in the percentage of the wage gap accounted for by discrimination.

Shared capitalism or apartheid economy?

Capitalism is changing, says the CEP's Co-Director, Richard Freeman. Here he offers some insights into how and why: and makes some predictions for the future.

Market driven capitalism is changing in the UK and the US. Regular workers at ASDA and Starbucks receive stock options as part of their pay package. Managers in leading edge firms empower workers to make more workplace decisions. The unions that represent employee owners at United Airlines hire a new Chief Executive Officer and encourage management to reward executives partly on whether the work force is satisfied with their jobs. The Trade Union Congress celebrates partnerships with firms and talks about value-added unionism. Employee pension funds based on defined contributions own increasingly large shares of the US equity and bond markets.

Developments like these are blurring the historic division between labour and capital in three ways: by making employee pay dependent on company or group performance; by increasing the scope of employee decision-making through employee involvement committees, teams, and partnership arrangements with unions; and by making employee pension funds major providers and owners of

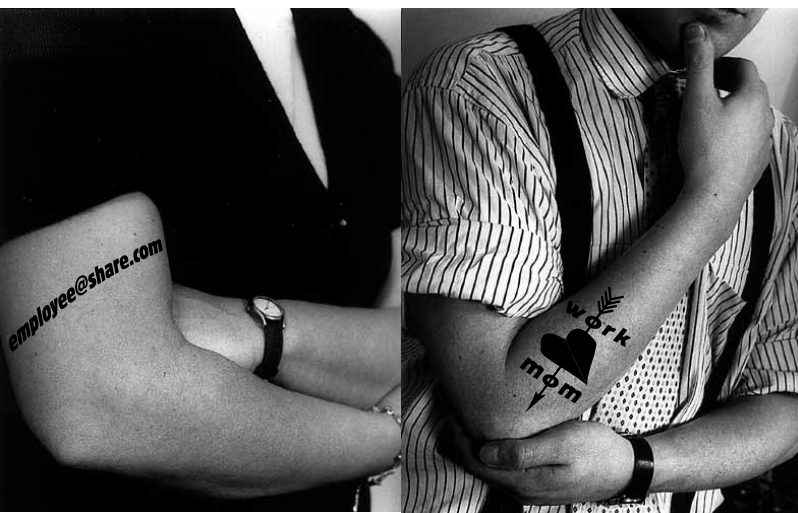
capital. They are moving the US and UK economies toward a form of shared capitalism in which employees and management share financial risk and rewards and decision-making authority.

The trend towards shared capitalism runs counter to the widely noted rise in income and wealth inequality and the alleged decline of permanent jobs that has marred the economic performance of English-speaking countries. In the US and UK, in particular, the rich, the highly skilled, the so-called fat cats, have made off like bandits, while the poor, the less skilled, and regular middle class workers have struggled in the job market. To be sure, full employment has improved the position of the working poor; but if or when these economies fall into recession, the trend toward inequality may begin anew. Rising inequality risks producing an "apartheid economy" with the greatest division between haves and have nots since the Great Depression.

So which of these competing forces will dominate in the future - those that lead to greater inequality or those that lead to shared capitalist institutions? With their nose for the dismal, many economists have examined the factors behind rising inequality, but few have studied the market-driven forces toward a greater sharing of authority, risk, and rewards. What are the key shared capitalist institutions? How rapidly are they growing? Can they become the workplace of the future?

Paying workers in options and bonuses may also be contributing to the boom.

The American example
Shared capitalist programs take many forms, ranging from employee ownership to profit-



sharing with no ownership to forms of gain-sharing based on group performance. In the United States, the main vehicle for employee ownership is the Employee Stock Ownership Plan (ESOP). At the end of the 1990s about 7% of the private-sector workforce was employed in over 9,200 ESOPs with combined assets of \$263 billion. But apart from ESOPs, there are over 8 million participants in non-ESOP defined contribution pension plans that hold a total of \$91 billion of employer stock. Around 9% of employees own stock directly in their companies through stock purchase or stock option programs. One-fifth say their employers provide discounts on company stock, one-tenth participate in company stock programs and two-fifths participate in stock purchase plans. Altogether, about one-fifth of American adults report holding stock in the company in which they work.

But the fastest growing form of ownership stake has been all-employee stock option programs (AESOPs). As many as one-third of large corporations in the US have stock option plans for all or most of their employees, with the result that up to 7 million American employees hold options. The boom in options may be a cyclical phenomenon, spurred by the bull stock market. But paying workers in options and bonuses may also be contributing to the boom, by making pay in rapid growth sectors more variable and reducing wage pressures.

Profit-sharing differs from employee ownership because it depends on accounting profits rather than share values. Employees at Amazon.com would receive nothing in profit shares since the firm has yet to turn a profit, but they have gained greatly from ownership of options, as the share price of the company has zoomed. About one-fifth of U.S. employees participate in some type of profit-sharing, while just under one-third of U.S. firms have profit-sharing plans for at least some employees. Close to two-fifths of public firms have profit-sharing for employees. Most profit-sharing is deferred, with the profit share put into an employee retirement account.

Gain-sharing plans are different again. These tend to be more local, oriented toward cost-saving or productivity advances in particular work sites. About two-fifths of Fortune 1000 firms have gain-sharing plans somewhere in the company, although most include less than 20% of employees. Broader surveys of compensation and human resource managers have found that only about one-eighth have gain-sharing plans.

Economics predicts a close link between employee participation in decision-making and sharing in financial rewards.

Other countries are catching up

Employee ownership and profit sharing are increasingly found in other advanced industrial countries. Between 20% and 30% of workers in France, Great Britain, Italy, and Japan are now covered by some form of profit sharing, while smaller numbers have some kind of employee stock ownership. Across the European Union, between 5% and 43% of firms within each country have profit-sharing plans, between 1% and 22% have employee share ownership, and between 5% and 38% have team-based bonuses.

Outside the firm itself, the growth of pension fund (workers' capital) ownership of equity has made the bulk of the American work force part-owners of enterprises other than their own. The shift from defined benefit pension plans to defined contribution pension plans has,



moreover, made retirement income and wealth more dependent on share ownership than ever before. The risk from pension fund investments no longer lies with employers, but with workers.

Employee involvement

Similarly dramatic changes have occurred in the area of decision-making. Employee involvement committees, teamwork, and other forms of empowering workers have become the cutting edge of labor relations in the US. British management has been more sceptical of these forms of labor relations, but European-style works councils are now coming to most large British firms. In the US, one-third of workers in firms with over 50 employees report that they serve on employee involvement committees. They make more suggestions at their workplace than other employees, and management reports that their suggestions are more useful. Workers who serve on committees are more committed to their firm, are less likely to support unionization if they are in a nonunion workplace, and are in general happier with their work lives.

What has spurred the growth of shared capitalism has been that it seems to meet the market test.

Economics predicts a close link between employee participation in decision-making and sharing in financial rewards. Combining financial participation with employee involvement in decision-making can be highly effective in generating a sense of ownership and partnership, encouraging worker co-monitoring, and tapping ideas and skills to enhance workplace performance. Give the typical employee authority to make a decision and the incentive to increase company value, and he or she will act in the firm's and their own best interest. By contrast, workers with decision-making authority but no financial incentive ought to be less motivated to make the right decisions. And there is little rationale for a firm to share financial returns with workers if all they do is carry out orders from above. In fact, there is a strong positive association between employee involvement and financial sharing. Firms which are employee owned, which pay bonuses, which have gain-sharing programs, or ESOPs, are more likely than others to have employee involvement programs as well.

Why has shared capitalism grown?

To some extent shared capitalist institutions have been artificially spurred by the tax system. In the US, ESOPs have benefited from a number of tax breaks; there are tax incentives for pension funds; and firms report stock options differently in their accounting statements than other expenses. Tax advantages spurred the growth of profit-related pay in the UK. But in neither country have tax breaks been the dominant cause of change. The UK has now removed its profit-related pay tax advantage while the US terminated many ESOP tax incentives; the major remaining tax incentive is that company owners can avoid capital gains taxes on shares sold to an ESOP. Deferred profit-sharing and pension plans that give workers ownership stakes in their firm have employee taxes deferred until the funds are received at retirement, but in this respect they do not differ from other pension plans. There are almost no special tax incentives for profit sharing, or gain-sharing. In Japan, ESOPs have grown rapidly without any tax advantages at all.

What has spurred the growth of shared capitalism has been that it seems to meet the market test. Firms with more shared arrangements do a bit better than other firms. Workers embrace the new modes of payment and their enhanced role in decision-making. Studies show a positive relation between the various forms of shared capitalism and output (though with a wide range of results). Profit-sharing is associated with a productivity advantage of 4-5%; employee ownership raises productivity by less, with gains that are largest for smaller firms. Employee involvement programs have even smaller and more variable effects, and seem to work best in union settings. Most case studies find that gain-sharing has positive effects on group performance. On the workers side, the vast majority of American employees want more involvement and a greater say in company decisions that affect their workplace. Some want

to participate in decisions as individuals, but the majority seek some form of collective voice. Some want unions to represent them, but many want organisations that are less likely to conflict with management. By providing workers with the work arrangement they want, firms can create a more loyal and satisfied work force, irrespective of productivity effects.

In the UK, the TUC sees the creation of works councils as an opportunity to service employees better, rather than as a substitute for unions. By contrast, the AFL-CIO is very uneasy about any non-union form of representation. Many workers in the US desire to own a bit of their firm, and the young MBAs and technically-trained employees whose role is critical to the success of the high-tech sector regard working without a share of ownership as unacceptable, presumably because it limits the potential for attaining great wealth. Of course, if the stock market collapses for high-tech and the various dot.com companies, the idea that workers should get some of the action while bearing the risk might prove to be a speculative bubble; but even in earlier times, employees expressed some interest in gaining a share of the rewards from their firms' successes. In short, shared capitalist institutions are growing because they meet the test of the competitive market, not because government has tilted the playing field in their favour.

Puzzles

But there are some puzzles in the economics of shared capitalist institutions. First is the rationale for the most rapidly increasing form of pay – stock options for regular employees. It's one thing to pay the CEO of ASDA or Starbucks in stock options since their decisions can affect the share price, and give them strong incentives; but assistants at your local supermarket can hardly affect the share price, which make this a peculiar way to try to motivate them to perform better. Gain-sharing based on meeting targets or profit-sharing at the local store level would seem to be more rational. But AESOPs are growing rapidly. The only plausible explanation (aside from firms simply getting it wrong) is that options do something that goes beyond individual calculations, notably to help create a corporate culture that improves company performance. Evidence from experimental economics and psychology (for instance on prisoner dilemma games) show that one cannot dismiss the culture hypothesis as irrelevant or the result of fuzzy thinking. Sorry, Lady Thatcher, but there really is society - or at least many firms act as if there is and many experiments confirm that people are more than selfish maximisers.

The second puzzle is why so many workers prefer some ownership stake or share in profits to fixed wages and benefits. To be sure, workers in most shared capitalist arrangements receive market wages and benefits comparable or even a bit higher than those in other firms, so they tend to have a reasonable base standard of living, but many invest more in their firm when portfolio theory says they

In the high-tech sectors, it is difficult to see how sharing in financial outcomes and decision-making will not remain significant.

Most employees seek long-term jobs with opportunities for upgrading their skills.



should diversify. And in larger firms workers could presumably demand higher wages in lieu of the more variable shared forms of pay, as Saturn car workers in the US have recently done. But many young educated workers make the opposite demand – for some share of the action from their employer. What began as a mode of pay for small Silicon Valley start-ups that could not meet the pay packages of larger firms (“IBM pays more, so we offer some ownership”) has spread throughout the high-tech sector and to many other industries as well. The positive response of workers calls for some rethinking of the traditional view of employees as risk averse and firms as risk neutral.

A third puzzle is why firms have sought to shift their pension plans from defined benefit schemes to defined contribution schemes, when the vast majority have done quite well with defined benefits, being able to under-fund or over-fund the pensions depending on market conditions. While in the short run, firms may benefit from reducing risk, in the long term, they would seem to be giving up the potential for gains from booming equity markets. Most actuarial calculations for pensions are, after all, relatively conservative, and firms that control a defined benefit plan gain the profits from better than expected performances.

Continuing growth?

Shared capitalism will grow if it continues to meet the market test, producing better outcomes for firms and workers than more hierarchical worker/firm relations. In the high-tech sectors, it is difficult to see how sharing in financial outcomes and decision-making will not remain significant. Since these are growing sectors, the shared approach will become more important in the overall economy. With young educated workers having technical skills and the desire to take a chance with entrepreneurial risk, and with many firms having a highly risky future, it is hard to see how any other mode of operation would better meet the needs of both sides.

In other sectors, those which make up the bulk of the economy, the future is uncertain. Many firms believe that flexibility in the labour area is critical for success in a global

economy. Some seek flexibility by downsizing their operations and using temporary help agencies. It is, they say, the end of the job: virtual employees working at virtual workplaces. But shared capitalist institutions offer an alternative form of flexibility based on permanent employment. What is variable is not the job but the compensation, which will depend on the performance of the firm.

I expect that variable compensation through shared capitalist arrangements rather than variable employment will prove to be the more effective road to flexibility. If we were moving to the end of the job, you should expect the number of years employees stay with the same employer to drop. But it hasn't. On average, tenure with a firm both in the US and the UK has been relatively constant, falling a bit for less educated young men and rising for women. If we were moving toward the disposable employee, workers would not be particularly interested in getting training from their firm. But most employees seek long-term jobs with opportunities for upgrading their skills, and many temporary workers and agencies operate in part as a means for training and testing future permanent workers.

Of course, a collapse of the shares market and a major recession could greatly alter employee attitudes and bring about demands for more stable pay and lead more firms to go the downsizing route. But even such a development is unlikely to reverse the rising proportion of equities owned by employee pension funds. Shared capitalism will not solve the inequality problem by itself. Some less educated and less skilled workers may fall into a low-level contingent status, and will need social programs to improve their living conditions. But it will create a different form of capitalism in the foreseeable future. Not a vague third way based on diverse stakeholders, but a firm based alignment of employee financial interests and influence on decisions.

Richard Freeman is Co-Director of the CEP and Professor of Economics at Harvard University.

In whose interest?

At the start of the twenty first century, Danny Quah considers the implications of the new technological revolution.



One of the striking features of the world at the end of the twentieth century was the extent to which ordinary people were seeing their lives transformed by high technology. No longer is the weightless economy the preserve of rocket scientists or academics in ivory towers: more and more people are now buying books from Amazon.com, ordering rail or air tickets on-line and discovering the benefits of electronic mail. There's no doubt that the early years of our new century are going to see an acceleration of the trends, right across the globe. That's inevitable. But is it also worrying for an economy like Britain? Or should we embrace the new revolution enthusiastically?

Growth and development: just the facts

Given fears about where Britain stands in the globalised technology-

driven world, it is easy to forget the central role each has played for the other in world history. At the beginning of the 20th century, Britain stood alone among economies in being relatively industrialised. It was here after all that the Industrial Revolution began, here that abolition of the Corn Laws precipitated the world's move towards lower trade barriers and brought about the explosion of merchant trade across national boundaries. Towards the end of the 19th century, a hundred years after the Industrial Revolution, most other countries still employed over 30% of their workforce in agriculture. In Britain, by contrast, cotton from abroad provided the raw inputs on which fed the textile machines and hydraulic power that we associate with leading-edge, frontier technologies then. Other countries were better at producing raw material inputs; the British better at processing them. This international division of labour – a then-new

Danny Tyson Quah

At the beginning of the 20th century, Britain stood alone among economies in being relatively industrialised.

organisation of production on that panoramic a scale – made sense, and provided the foundations for high and growing economic prosperity in Britain. Some economic historians estimate that, taking into consideration spillover effects, cotton imports might have accounted for between 15% and 60% of overall British economic growth over the first half of the 19th century. No one then lamented the British economy would not survive locating cotton production offshore – or at least if anyone did, I'm glad their arguments failed to carry the day.

Capital flowed freely from the core of rich countries of Western Europe to the developing economies in the Americas, Asia, and Australia. The net outflow from Britain rose to as high as 9% of GNP. By contrast, even at their maximum in the 1980s, net capital outflows from Japan and Germany never exceeded 5% of national output.

Looking over these facts we have to conclude that for one and a half centuries after 1750, Britain was more than a fully signed-up partner of the globalising world: indeed, it was instigator and gang-leader.

And remember, the words "Industrial Revolution" and "Britain" are practically synonymous. Historical accounts draw no distinction between the Industrial Revolution of the late 18th century and the expansion of British industry under Richard Arkwright, Matthew Boulton, and James Watt. Moreover, the great technological advances in Britain did not just begin and end in 1800. For the century afterwards, British workers and machines extended the application of new work ideas to France, Belgium, the German states, Sweden, Switzerland, and ultimately to the eastern US. Over 100 million people – 14% of the world's population – migrated across continents in the 50 years before World War 1.

This quick historical survey shows that neither globalisation nor technological change is new to Britain. It reveals nothing in the British character or in its culture

averse to international openness, technological innovation, individual entrepreneurship, or productivity and enterprise. Indeed 19th-century Britain positively thrived in all these dimensions.

More recently? For the 30 years after 1960, per capita income for the entire world grew by 2.26% per year. Corrected for purchasing power parity, UK per capita income only exactly kept pace. At both the beginning and end of this period, UK per capita income was 3 times that the world average: averaged over the 1970s, however, this ratio had fallen to as low as 2.73, climbing again only after 1981. But keeping level with an average is only relative. Averaged over the first five years of the 1960s, the UK ranked 9th in the world in per capita income across countries; towards the beginning of the 1990s, that same average showed the UK's rank had fallen to 15th. Over these same three decades, not only has aggregate performance been dismal, but UK income inequality also increased by over 13%. This increased inequality, to be clear, cannot be traced to low-wage competition from less-skilled workers in poorer economies: the relative prices that have declined most are those of goods that use skilled labour more intensively. Imports from the poorer developing countries have had no measurable direct impact on wages or employment in the UK.

Technology:
changes large and small
What has changed in these last 200 years? More important, how will the

For one and a half centuries after 1750, Britain was more than a fully signed-up partner of the globalising world.

situation evolve from here on out? What is the modern-day counterpart to the steam engine and cotton imports, to the abolition of the Corn Laws, and to the Industrial Revolution that all together so magnificently drove British and world economic growth?

The old saw, that knowledge drives technological progress and through that economic prosperity, is as legitimate now as it was then.

For these forward-looking questions we can only use conjecture, hypothesis, and reasoning. As economists, we analyse models, based on informed, maintained hypotheses, that attempt to draw out the implications of our guesses. So here's my stab at answering the list of questions, extrapolating from observations about changes in the world now.

The newest and most profound global and technological changes have two key characteristics: first, they imply ever-increasing disrespect of distance (and thus space), time, and other putative natural boundaries; second, they progressively tear down the barriers between producers of new technology and consumers. These effects work as powerfully across countries as they do between neighborhoods in a city or villages in the countryside.

Falling transportation and communications costs is a convenient shorthand to describe the first of these: Technical progress on Internet and telecommunications infrastructures is a case in point. For this description to work, however, it must be that the economic value we're interested in moving displays no hard physical limits in its transportation and communication. However much transportation costs fall, however low tariff barriers become, if it's an oil supertanker we're slinging back and forth, that's going to eat up real resources. By contrast, where such physical limits do not apply, it is useful to think about the economic value as being weightless. Examples include modern finance and financial

Most of what we buy and enjoy now has large chunks of technology embodied in ever less physical material.

services, software and other elements of information and communications technology, electronic libraries and databases, media content, and intellectual property broadly construed. It is these parts of the economy to which falling transportation costs apply; it is then their rising importance in a modern economy that allows falling transportation and communication costs to matter at all.

The same circle of ideas helps shed light on the ever closer proximity of technology-producers and consumers. Most of what we buy and enjoy now has large chunks of technology embodied in ever less physical material. Time was, high-tech meant a faster, more whizz-bang spinning jenny pushing out better textiles that in turn got reworked into higher-quality clothes. Now, high-tech means the clothes, the software, the video content, the Internet delivery themselves directly encode the improved knowledge and information. It is that knowledge and information that we now value; their carriers are inessential and immaterial.

This identification sheds light on a number of important developments in the modern globalised economy.

One, the knowledge-driven economy is real and is here. This knowledge in economic life, however, is not always identical with the knowledge in science and technology. Lara Croft Tomb Raider is a weightless knowledge-product that we enjoy. Its economic and physical properties make it a prototypical product in the new high-tech knowledge-intensive economy. It is, however, a different animal altogether than a mathematical theorem or a scientific or engineering breakthrough. It is not knowledge that comes out of an R&D laboratory, at least not in the traditional sense.

Two, this move towards a weightless economy implies for business firms outsourcing and downsizing in the small but, simultaneously, agglomeration in the large. Because the distance between production and consumption is ever

smaller, individuals with enterprise, a good idea, and not much else can have a go: reaching a market for their ideas no longer needs to be mediated through expensive largescale bricks-and-mortar operation. The comparison is with, on the one hand, hawking one's good ideas to, oh, the two or three businesses large and interested enough to want to implement them, or, on the other hand, to the two or three hundred million consumers waiting on the other side of the Internet. Getting a penny off each of even a fraction of such a customer base, from one's special customised niche idea, will already do nicely. Thus, every week we hear of yet another rags-to-riches Internet business.

At the same time, however, the network externalities and scale economies in servicing global markets for these new high-tech products make large conglomerates with truly international reach the operation of choice. Software and cable companies, telecommunications firms, banks, even staid old-fashioned ivory-tower academic universities, all in the weightless economy business, seek to operate or cooperate at ever larger scales. Evidently, there is room for successful enterprise at different magnitudes of operation, large and small, but leaving out the soggy middle.

Where does national policy-making situate in this canvas? Governments

and nation-states, in my view, face much the same choices as do firms. Either cooperate internationally, and exploit the network externalities and scale economies from coordinating global reach; or operate in a niche, customising, identifying, and serving specific interests.

Conclusions

The world now, however, has changed.

The key features of the new technological revolution are an increased disregard for distance, time, and other putative boundaries; and an increased proximity between technology and the consumer.

History has no record of anyone ever successfully holding back the tide of commercially-profitable technical progress or ever successfully closing off their society and economy to external influences. The opposite, instead, is how almost all economies have succeeded. Identifying and then leveraging one's comparative advantage, rather than fearing these changes, should be the way forwards. Nothing, not even the continuing technological and economic dominance of the US should be taken for granted. In the early 1990s, Finland's national income fell by a magnitude comparable to that experienced by many countries during the Great Depression of the 1930s. Today, observers acknowledge that, compared to Finland, Silicon Valley is, to use the vernacular, a Third World country in its use of advanced technology. If all that Britain had to choose between was Finland or Silicon Valley, then I'd say we're in pretty good shape.

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The key features of the new technological revolution are an increased disregard for distance, time, and other putative boundaries; and an increased proximity between technology and the consumer.

Mirage or miracle

Continued from page 9

Disability benefits tend to be higher and more secure than unemployment benefit, since there is little pressure to take up work. What's more, those who work in the Employment Service have an incentive to shift unemployed individuals onto disability schemes, particularly if they are hard to place in work - the unemployment figures are then lower than they otherwise would have been. It is clear from a report on disability by the National Audit Office in 1989 that a variety of non-medical factors are taken into account by doctors involved in disability assessment - including whether or not a claimant had been advised by the Employment Service to seek a statement of disability. As a consequence, despite the relatively buoyant labour market after 1993, the numbers in receipt of disability benefit continued to increase. In the Netherlands, there's also a generous government-subsidised early retirement scheme which appears to increase the rate at which older Dutch men leave the labour market.

Lessons to be learned?

Whatever President Chirac may say, it's clear that both for the Netherlands and the UK falling unemployment is a real phenomenon and not just the result of a statistical redistribution of non-employed workers from unemployment to other categories. Since in most other EU countries such a decline in unemployment did not occur to the same extent, it is therefore fair to describe what happened as something of an unemployment miracle. Both countries have seen significant changes in wage bargaining structures; and their unemployment benefit systems have become markedly less generous along with an increased pressure to take jobs. But the Netherlands has combined these changes with an increase in expenditure on active labour market programmes to help the unemployed, which contrasts with a significant decline in such programmes in Britain, at least up until 1996.

The success of both countries in bringing down unemployment from the disastrous heights of the early 1980s is a significant achievement - though some other aspects of the operation of their labour markets are less praiseworthy, notably the disability system. So are there lessons which other European countries could follow? We think there are two principal ones:

reform wage bargaining systems: both countries have successfully reduced the upward pressure on pay which wage bargaining systems can generate, especially in tight labour markets: the Netherlands did this by greater central coordination, the UK through a weakening of the power of unions;

reform benefits systems: benefit reform in both countries has helped them to sustain lower levels of unemployment; they have reduced benefits and made work tests stricter. Active labour market programmes, introduced by the Dutch and now being introduced in Britain, are an important complement to this.

But there's a negative lesson here too: disability and sickness benefit systems must be kept under control with stringent entry criteria. The huge rise in the numbers claiming disability benefit in both countries did not correspond with any rise in ill-health. The Dutch now seem to have halted the rise, but disability numbers in Britain are still increasing. The experience of the 1990s offers plenty of evidence about the need to resist the temptation to reduce labour supply as a policy response to unemployment.

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What will the new centre do?

February 2000 saw the official launch of an exciting new project for the CEP: it became host to a brand new Centre for the Economics of Education. This is a government funded research centre, with money (nearly £1 million) coming from the Department for Education and Employment. The new Centre is a partnership between the CEP itself, the Institute for Education and the Institute for Fiscal Studies, as Stephen Machin, Director of the new Centre, and Anna Vignoles, its Coordinator, explained to CentrePiece.



What will the new Centre do?

We'll bring together experts from both the education and economics fields to look at the really pressing economic issues currently facing the UK education system – how do we improve the cost effectiveness of our schools? What types of education are of most benefit to individuals when they start work? How should we decide how much the government should invest in education – and what sort of education programme the government should spend money on.

One of the things that makes the new Centre different and exciting is that it will be truly multi-disciplinary. It'll be a three-way partnership between the Centre for Economic Performance, the Institute of Education and the Institute for Fiscal Studies. The idea will be to provide the people who are providing the money – the Department for Education and Employment – with guidance for drawing up education policy. We are also going to undertake groundbreaking methodological work. In other words, we're going to be developing methodologies that will set the standard – the 'best practice' – for all researchers working on the economics of education. We aim to do this by bringing together the best of the research techniques currently used by educationalists and economists.

Why have a separate Centre?

The idea behind having a separate Centre, dedicated to studying the economics of education, is to focus a great deal of academic expertise on one particular policy problem. We will have educationalists and economists all working together, using the methodologies of their own fields, and drawing on the existing expertise of the various institutions that are involved in this new Centre. Because the new Centre is going to provide a focal point, and have new resources, we should be able to come up with better and robust results, more quickly.

Why is the government so keen to fund this type of research?

When this government was elected their message was 'education,

education, education'. Indeed politicians right across the political spectrum seem to generally agree on one thing: that our education system is central both to the UK economy and to our society as a whole. The UK education system must provide the skills that employers need – desperately; and it must also give individuals the means to achieve more both for themselves and for the economy as a whole. Expenditure on education is – partly at least – an investment, an investment made by the country as a whole. So it's crucial that we understand more about which types of investments in education are going to be more effective in achieving our economic and social goals. It's understandable that the government wants to encourage more research – and rigorous research at that – that can shed light on these issues.

What specific areas of work will the new Centre focus on?

We're going to start out with a comprehensive programme of research over the next three years. In year 1, the priority research areas will be research into how we can improve the cost effectiveness of UK schools. We'll work on the types of skills that are most in demand by employers. And we're going to do in-depth analyses of the pay-off to the individual from different types of education: we're particularly interested in analysing the economic benefits individuals get from having FE qualifications.

What can this sort of research tell us? Will it just look at the way things are or give guidance for policy?

The new Centre offers a fantastic opportunity to feed rigorous research

The new Centre offers a fantastic opportunity to feed rigorous research straight to the people who actually decide the policies.



Expenditure on education is — partly at least — an investment, an investment made by the country as a whole.

straight to the people who actually decide the policies: so we can make sure that the decisions being made about government investment in education are going to be made on the basis of the best evidence available – that's the whole idea of having a DfEE funded centre. The DfEE will have access – through us – to first class research. And it's a two way thing. It'll be just as important that the policymakers can guide us, the researchers, as to the areas which are most pressing, most urgent, in policy terms. This kind of two-way relationship between researcher and policymaker should mean that the work that the new Centre will do gives relevant guidance for future policy – and does so at the right time. We see the Centre as being about providing ideas to create the education system that we all ideally want, rather than simply describing the way that the system works at the moment.

When will the research start to make an impact?

Almost straightaway! Policymakers will have access to our research from day one and they'll be guiding us as to the issues of greatest concern. Throughout the life of the Centre, the DfEE will have access to our findings and to our researchers at their finger tips and this should start to impact on policy decisions relatively soon – we expect to see a visible impact within six months. But the real advantage of the Centre is that, thanks to the funding we're getting from the DfEE, we will also be able to take a longer term, much broader perspective. So more major and lengthy projects will be possible which, over the next 5 years or so, should pay off in terms of better policy decisions.

The back issues



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