

# Human Resources, the Labour Market and Economic Performance

A look back and a look forward from the  
Manpower Human Resource Lab at  
the Centre for Economic Performance

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## **MANPOWER HUMAN RESOURCES LAB, CEP**

As one of the world's foremost employment agencies, Manpower is seeking to contribute to the analysis of and policy debate around the issues of the changing world of work. In May 2006 it therefore established with the Centre for Economic Performance the Manpower Human Resources Lab at the London School of Economics. The aim of the Lab is to become a leading centre studying the impact of human resource decisions and labour market trends on productivity at firm, national and global levels.

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## **THE RATIONALE FOR CREATING THE HUMAN RESOURCES LAB**

There is no doubt that the world of work is changing. Rapidly expanding emerging economies, an increasingly global labour market and new technology are all having a significant impact on the demand for and supply of skills, organisational structures and practices, and the prospects for employment, inequality, productivity and growth.

As one of the world's foremost employment agencies, Manpower is seeking to contribute to the analysis of and policy debate around these issues as part of an effort to demonstrate thought leadership in this new world of work.

To do this, it is joining forces with Europe's leading centre for applied economic research, the Centre for Economic Performance (CEP), whose central goal is to understand economic performance and inform policy and practice through outstanding scientific research on key issues of education, inequality, productivity, technology, globalisation and the labour market.

The two partners are launching the Manpower Human Resources Lab, a new research programme within the CEP at the London School of Economics (LSE). The aim of the Lab is to establish a leading centre for the study of the impact of human resource decisions and labour market trends on productivity at firm, national and global levels.

There are a great many unsubstantiated views circulating in the business press on the future of human resources in a changing labour market – simplistic 'analyses' which panic that 'low skilled jobs are going to disappear', 'the traditional employment contract is dead', 'all work will be sent to call centres in Bangalore and sweatshops in Thailand' or 'the internet means the death of the workplace'. The Lab will use rigorous investigative techniques and innovative data analysis to assess the extent to which there are real underlying changes and where there are continuities with the past. The research – to be carried out by some of Europe's leading labour market experts – will bring systematic analysis and evidence to bear on key issues in the practical world of business management.

### **The partners**

Manpower is a world leader in the employment services industry, offering its clients a range of services for the entire employment and business cycle, including permanent, temporary and contract recruitment; employee assessment and selection; training; outplacement; outsourcing and consulting.

Manpower's worldwide network of 4,400 offices in 72 countries enables the company to meet the needs of its 400,000 customers per year, including small and medium-sized enterprises in all industry sectors, as well as the world's largest multinational firms. The focus of Manpower's work is on raising productivity through improved quality, efficiency and cost-reduction across their clients' total workforces, enabling them to concentrate on their core business activities.

CEP is the largest social science research centre in the UK and one of the leading institutions of economic research in the world. It is funded by the UK's Economic and Social Research

Council, major research foundations and government and European Union institutions, and its 40 senior staff members are drawn from the LSE's economics department and other leading UK and US universities. Junior staff are some of the brightest postgraduates in Europe predominantly reading for their PhDs and working in apprenticeship mode with senior staff.

CEP researchers study the determinants of economic performance at the level of the firm, the nation and the global economy by focusing on the major links between globalisation, technology and institutions (including the education system and the labour market) and their impact on productivity, inequality, employment and stability. Many of the ideas they have developed and the discoveries they have made based on careful analysis of data have overturned received wisdom and become the current way of thinking – on issues that include the minimum wage, social mobility and policies to tackle long-term unemployment and worklessness. It was on the basis of the quality of CEP's research and its impact on public policy that it was awarded the Queen's Prize for Education in 2003.

## The research plan

The Human Resources Lab's first projects will centre on the areas of organisational flexibility, lifelong learning and skills, and the changing labour market. Research findings will be conveyed via regular industry briefings allowing two-way discourse between business, policymakers and academic researchers, an annual conference and a working paper series – all with the goal of gaining a better understanding of the changing needs and characteristics of today's workforce as well as supporting the development of economic policy to boost growth and competitiveness.

The Lab will investigate issues through rigorous data collection and analysis, including firm-level and workplace-level data provided by Manpower and others, which have not been analysed before.

CEP has a long track record in the analysis of large-scale microeconomic data sets to look at key issues in education, productivity, inequality and the labour market. As this report illustrates, many of its findings have informed current labour market policy in the UK and Europe – and a number of its recent studies have evaluated the effectiveness of policy interventions in education and the labour market.

There are several distinguishing features of the data to be deployed in this research programme.

- First, much of it will be **workplace-oriented data** since so many of the questions can only be answered with rich data on employers, including the adoption of particular practices. But some of the outcomes of interest are employee outcomes, making linked employer-employee data particularly valuable.
- Second, the Lab will use **internationally comparative data** to establish whether relationships identified in one country are consistent with those found in others. Thus, the Workplace Employment Relations Surveys for 1980-2004 will be analysed in conjunction with comparable data for Australia, Canada, France and possibly Scandinavia.
- Third, the focus will be on nationally representative **large-scale quantitative data**, permitting generalisations about what is happening at a national level, something that is not possible with case-study data.

- Fourth, some of it will be **longitudinal data** and, as such, can identify processes of adoption, maintenance and the demise of practices, with causal inferences based on the sequence of events over time.
- Fifth, the Lab will develop **new data sets**, such as the firm-level data currently in progress in the international firm productivity study led by Nick Bloom and John Van Reenen, which is based on the FAME (Financial Analysis Made Easy) data supplemented by surveys undertaken at CEP.

The standard methodological approach will be to investigate relationships between practices, policies and outcomes both descriptively and using multivariate techniques that permit for *ceteris paribus* comparisons to be made. On occasions, the research may also deploy more complex techniques to identify causal relationships between practices and outcomes, but findings will be reported in a way that is readily understandable to the lay reader.

## LOOKING BACK: WHAT WE KNOW FROM CEP RESEARCH

Siting the Lab in the CEP allows the planned work to draw on the expertise and knowledge of the labour market derived from the Centre's previous 20 years of research. We now turn to an overview of the main questions tackled by CEP in this period and the current state of knowledge, before presenting the Lab's new research agenda.

The most significant findings of CEP research over the last 20 years have been in the areas of the labour market, firm performance and education and skills. The work is summarised under three themes:

1. The changing labour market
2. Changing organisations
3. Changes in education and skills

### 1. The changing labour market

How the labour market works is of crucial importance for material well-being and the performance of economies. It has long been a central focus of CEP research – and the resulting analysis and evidence have had a major impact on the public understanding of unemployment, inequality and key policy interventions like the UK's National Minimum Wage and the New Deal.

#### *a. Tackling unemployment*

Twenty-five years ago, many people thought that high unemployment was inevitable. Some saw it as the outcome of technological change, which would gradually produce the 'end of work'. Others were less extreme but believed that the number of jobs was unaffected by the number of people looking for work.

CEP research provided a clear framework for thinking about unemployment, which came to be known as the Layard-Nickell model (Layard et al, 1991, 2005). The core idea of this analysis indicates that in the short run, unemployment is always determined by aggregate demand, but in the medium term, there are institutional ('supply-side') limits to the level of demand that is consistent with stable inflation. Examples of such limiting institutions are benefit systems and systems of wage determination.

By making this separation between supply constraints and demand, CEP researchers focused attention on the need for:

- Serious efforts to improve the supply side.
- A quite separate mechanism for regulating demand, eventually justifying the independence of the Bank of England so that it, rather than the Treasury, is responsible for setting short-term interest rates.

In seeking to identify the key supply-side influences, two general points became clear:

- First, a bigger labour force does not increase unemployment – jobs do respond. Thus, for example, unemployment cannot be blamed on immigration.
- Second, higher productivity does not increase unemployment – so improved technology is not the problem.

One of CEP's biggest contribution to the understanding of unemployment was to introduce evidence on vacancies. By 1985, vacancies in the UK had risen to their 1975 level, but unemployment was three times higher. So clearly, there was a failure to mobilise the unemployed to fill the vacancies that were available. And it was the vacancies that were keeping inflation so high.

The research traced this 'mobilisation failure' to changes in the way unemployed people were treated at benefit offices and job centres. This led to the recommendation of something close to the New Deal as it was eventually implemented in 1998 as well as a series of other 'welfare-to-work' measures intended to move those reliant on benefits into relative financial independence through paid work. The basic principle was much more help for unemployed people plus the requirement that they take advantage of it.

The experience of the last 15 years shows that given sensible macroeconomic policies, it is possible to ensure that unemployment remains fairly close to the full employment level. Three strategies seem particularly relevant.

- To prevent people drifting into long-term unemployment, there should be active labour market policies to ensure that everyone gets offers of work or training within a year of becoming unemployed. A modern public employment service is a key instrument in the business of channelling job offers to workers: it should be properly staffed and funded, with private agencies free to compete with it.
- The welfare-to-work approach will not prevent long-term unemployment if individuals who receive offers from employers can instead choose to continue living on benefits. A system of complementary rights and responsibilities is needed where the citizen can expect high-quality help in finding work, but in return must take advantage of it or cease to draw benefits.
- Labour supply-reducing policies such as early retirement, as well as relatively uncontrolled access to invalidity pensions, should be phased out as the welfare-to-work approach makes it possible to deal with redundancies without having to implement (high cost) early retirement for older workers. Reforms of pension systems should also remove from public pension arrangements those features that discourage the participation of older workers.

Around the same time as the Layard-Nickell work on unemployment policy, their CEP colleague Christopher Pissarides was doing pathbreaking theoretical work on the processes of job search and job matching that underpin flows of people in and out of employment and unemployment (Pissarides, 1990, 2000). He was recognised for this body of work with the joint award of the 2005 IZA Prize in Labor Economics with Dale Mortensen of Northwestern University (Mortensen and Pissarides, 1993, 1999a and 1999b).

The central idea in the Mortensen-Pissarides research programme is that there are ‘frictions’ or ‘information imperfections’ in the labour market – as workers search for jobs and try to make a match with employers – which have a powerful impact on ‘equilibrium unemployment’ for the economy as a whole. The varying lengths of time for which workers are unemployed is determined by the intensity with which they search for jobs and the timing of their decisions of when to accept a job offer.

Pissarides used and developed the concept of the ‘matching function’, which relates job creation to the number of unemployed, the number of job vacancies and the intensities with which workers search and firms recruit. His work provides a theoretical rationale for such empirical observations as vacancies responding more quickly and with greater amplitude to shocks than unemployment, real wage changes not fully reflecting real output changes and unemployment responding faster to negative shocks than to positive shocks.

#### *b. The rise in labour market inactivity*

The UK labour market currently has a high proportion of people in employment: around three quarters of working age people have jobs, a higher proportion than in France, Germany and even the United States. At the same time, while the Big Four countries of continental Europe - France, Germany, Italy and Spain - still have relatively high unemployment, many of the rest, including the UK - which have implemented policy proposals emerging from CEP's research - have comparatively low unemployment.

But although the UK's high unemployment has been tackled, a new labour market problem has arisen: inactivity, where substantial numbers of people of working age are neither in work nor looking for a job. For example, the latest data on the inactive indicates 2.7 million people of working age are claiming benefits for reasons of incapacity.

CEP research by Giulia Faggio and Stephen Nickell shows that the UK's inactivity rate for working age men over 25 has risen by a multiple of around four since the mid-1970s. Among prime-age men – those aged between 25 and 54 – the inactivity rate is now 8.6%, five times higher than in the mid-1970s. And inactivity is particularly concentrated among men who are both low skilled and suffering from a chronic health problem or disability.

One fundamental change causing rising inactivity is the dramatic weakening of demand for unskilled labour since at least the mid-1970s. This is mainly due to technological change, which has favoured the more educated – for example, computer use – and, to a lesser extent, globalisation – exports from countries with many unskilled workers. At the same time, there has been a general increase in the supply of skills, but it has not been rapid enough in the UK to keep up with demand (Nickell and Layard, 1999; and Machin 1996a, 1996b).

Employment rates of low skilled workers have fallen because of this, but why has the rise in non-employment been so heavily focused on inactivity as opposed to unemployment? There are both ‘push’ and ‘pull’ factors (Faggio and Nickell, 2003 and 2005):

- The main push factor is that as the low skilled labour market weakens, the people most at risk are those who have additional disadvantages, such as a disability that limits the sort of work they can do. So unskilled men with a chronic illness or disability were

particularly badly hit, and because they found it much harder to find work, the social security system found it much easier to shift them onto incapacity benefits.

- The main pull factor is that incapacity benefits were considerably more generous than unemployment benefits, and this gap increased from the mid-1980s to the mid-1990s before falling back in the later 1990s. What's more, once a person was on incapacity benefits, the pressure to take up work was minimal.

The government's strategy to reverse the rise in inactivity include the New Deal for Disabled People and the Pathways-to-Work pilots, active labour market policies offering job search assistance, which have had a mixed record of success. In addition, the 2006 Green Paper on welfare reform proposes to make access to incapacity benefit stricter, which should help to stem the flow of new entrants.

Richard Layard's most recent work points to another policy option. He notes that there are more mentally ill people on incapacity benefits than the total number of unemployed people on benefit. One in six of all people suffer from depression or chronic anxiety, which affects one in three of all families. And only a quarter of those who are ill are receiving any treatment – in most cases medication.

CEP's Depression Report (Layard et al, 2006) urges that psychological therapy should be made available through the National Health Service to all people suffering from depression, chronic anxiety and schizophrenia. Such a service would pay for itself in the reduced expenditure on incapacity benefits from people being able to go back to work. This recommendation was incorporated in the Government's last election manifesto promising improved access to behavioural therapies.

### *c. The problem of workless households*

CEP research has explored in great detail and over many years the unemployment or inactivity of individuals. Whilst unemployment did begin to decrease, Paul Gregg and Jonathan Wadsworth at the Centre uncovered the previously "hidden" problem of workless households, where whole families not just individuals suffer from the absence of paid work.

This stream of research found that in the late 1990s, half of all single mothers in the UK were out of the labour force and it was rare for the spouse of an unemployed person to look for work. And one in seven children in the UK lived in a household where no one was working. This was one of the highest rates in Europe and in sharp contrast to the UK's better than average unemployment performance (Gregg and Wadsworth, 2001).

Since much of the UK's worklessness is exacerbated by the benefit system, CEP was active throughout the 1990s in analysing proposals to 'make work pay' – including the Working Families Tax Credit, the New Deal and the National Minimum Wage – and thereby lift many of these workless households out of poverty (Dickens and Ellwood, 2002). CEP researchers have subsequently evaluated the effectiveness of these policies in practice.

For example, the New Deal has attempted to 'activate' the unemployed into finding a job through a mixture of carrots – advice, job subsidies and training opportunities – and sticks – benefit sanctions, as recommended by the Layard-Nickell model. The New Deal marked a

departure from previous active labour market policies in ensuring job search assistance through a dedicated ‘personal adviser’ and in offering a variety of options (training, job subsidies, full-time education) to those unable to move into work immediately. The options are mandatory: there is no ‘fifth option’ of staying on benefits. CEP evaluations of the programme suggest that it has raised the chances of unemployed people finding a job by between 5% and 7%. This effect appears after four months and seems to persist for at least one year. It has also modestly increased employment and has proven reasonably cost-effective (Van Reenen, 2004; and Layard, 2002).

The evidence is less clear about which are the best elements of the programme, but it seems that the mix of help backed by sanctions has been key. There are concerns, however. Sanctions carry the danger of inequity (if the wrong people are sanctioned) and there is the danger that claimants are simply moved from benefits to inactivity. There is also some CEP research evidence that the introduction of Jobseeker’s Allowance led to some increases in inactivity and crime (Machin and Marie, 2004).

#### *d. Minimum wages*

Another policy carefully scrutinised by CEP research is the National Minimum Wage, which was introduced nationally for the first time in UK history in 1999. This is the most significant labour market intervention since 1997. The minimum wage is part of a wider package of reforms designed to ‘make work pay’. The centrepiece of these reforms is a tax credit that boosts low wage workers’ take-home pay. The minimum wage is an integral part of these reforms because it stops employers from cutting wages knowing that workers will not be any worse off.

Prior to the introduction of the minimum wage, there were claims that it would not only destroy up to two million jobs but also push up inflation and interest rates as better paid workers sought similar pay increases to their low paid colleagues. As predicted by CEP work at the time none of these fears has materialised, and the political controversy surrounding the minimum wage in the 1990s has now been transformed into a consensus. The main work on the minimum wage in the UK – both before and after its introduction – has been carried out at CEP which estimates that it raised the pay of well over one million low paid workers by about 15% overnight at the point of introduction (Dickens and Manning, 2004). Since 1999, the minimum wage has been increased by 30% after adjusting for increases in the retail price index, well above the increase in average earnings over this period. Women have benefited more from these increases than men, helping to close the gender wage gap (Dickens and Draca, 2004).

The potential employment effects of the minimum wage are its most controversial feature. The traditional economist’s view of this issue is that when faced with increases in the *price* of labour due to the minimum wage, firms will reduce the *quantity* of labour they employ (the ‘law of demand’). Labour costs will rise due to wage hikes of those previously below the minimum wage and through ‘knock on’ effects as those higher up the distribution seek to maintain wage differentials. An alternative view – most notably expounded by CEP’s Alan Manning – is that labour markets in practice may be not as efficient as in theory since firms can have monopsony power over workers and can then set wages that are below the prevailing wage level: forcing them to pay higher wages could thus encourage *more* employment (Manning, 2003).

Research in the UK and overseas has not found strong negative (or positive) effects of minimum wages on jobs. This work has basically assessed whether workers more affected by

the minimum wage experience higher rates of job loss compared with workers less affected by the minimum wage.

Studies by CEP researchers and others looking at outcomes across the UK economy find no significant evidence of negative employment effects for either the introduction of the minimum wage or subsequent upratings. Other CEP studies have focused specifically on heavily affected parts of the economy, such as the care homes sector, where only modest evidence of negative employment effects has been found. (Machin et al, 2003; and Machin and Wilson, 2004). The reasons for this are that, partly as a result of CEP research, the minimum wage was introduced at a reasonable level. Also, perhaps surprisingly, the knock-on effects to wages higher up the distribution have been negligible.

#### *e. Increasing inequality*

The central aim of the UK's minimum wage has been to deliver a fairer wage to low paid workers without limiting their employment opportunities or harming the efficiency of business. But while many workers have benefited from the policy, overall wage inequality has not fallen significantly – although it is likely that inequality would have risen by even more in the absence of the minimum wage.

A great deal of CEP research has focused on this issue of rising wage inequality – on the processes of wage determination that drive it and, in particular, on shifts in the structure of wages. Wage inequality can be beneficial where it creates work incentives, but too much wage inequality can actually damage incentives, as Richard Freeman's work at CEP has recently indicated (Freeman & Gelber, 2006 forthcoming). Wage inequality may also be a concern if some workers are receiving more than their market value, a question recently raised with respect to CEO's, and if workers who improve their productivity find they are 'stuck' and can not move up the wage distribution.

Early work in the area provided descriptive material on the nature of rising wage inequality and coincident shifts in the demand for skilled vis-à-vis unskilled workers (Machin, 1996a and 1996b). It is now widely recognised that wage inequality has risen since the 1970s, with rapid increases in the 1980s followed by a slowdown in the 1990s. Stephen Machin's research showed rising wage gaps in the 1980s between those at the higher end of the wage distribution and those at the bottom. It also showed that more educated and skilled workers were improving their relative position, both in terms of wages and employment, compared with their less educated and less skilled counterparts.

During the 1990s, increasing inequality at the top of the distribution – 'the rich getting richer' – was tempered by a pause in the level of inequality at the lower end of the distribution. For example, the differential between workers paid at the 50% point of the wage distribution and those paid at the 10% point – the 50:10 ratio – did not rise in the 1990s (Machin, 2003).

The next stage of work looked at the proximate causes of rising wage gaps, arguing that 'skill-biased technological change' rather than increased international trade was the prime mover in explaining why wage inequality had risen so sharply (Machin and Van Reenen, 1998; Berman et al, 1998; and Machin et al, 1999). The international trade argument did not seem to hold water since trade flows with the developing world were too small, since most of the skill demand shifts were within particular, more technologically advanced firms and industries and because

measured trade indices had little explanatory power (far less than technology variables) in statistical work explaining demand shifts and wage changes that disproportionately benefited more skilled workers.

While the skill-biased technological change view is also consistent with developments in the 1980s in the United States, developments in the 1990s require a more nuanced explanation. Skill-biased technological change still matters, but there has been growing demand for both high skilled jobs and lower skilled jobs that cannot be automated (Autor et al, 2003; and Autor et al, 2005). CEP research has identified a similar ‘polarisation of work’ over the last quarter century in the UK (Goos and Manning, 2003).

This evidence runs counter to gloomy predictions from some commentators of a continued fall in the demand for unskilled labour in West European countries. So as employment rates have risen and unemployment rates fallen in many of these countries over the past 10-15 years, attention has now shifted from worrying about the quantity of jobs to the quality of jobs – what CEP’s Maarten Goos and Alan Manning have described as ‘lovely’ and ‘lousy’ jobs.

The growing demand for lower-end jobs, coupled with the passing of the ‘glut’ of displaced routine labour, has resulted in wage increases at the bottom end of the labour market over this period. The net effect has been a stabilisation in the wage distribution in the lower half of the pay distribution – as indicated by the 50:10 ratio – but continuing growth in pay disparities in the upper half of the pay distribution.

Alongside the shifting inequalities in earnings and job quality in recent decades, there have been considerable changes in labour market inequalities between men and women. CEP research has studied these changes in detail, revealing, for example, how the gender pay gap has evolved over the lifecycle of four generations of women, from those born in 1945-54 to those born in 1975-84. Each generation of women has done better relative to men than the previous generation, but the pace of improvement has slowed. For example, women born in 1965-74 have a gender pay gap 8 percentage points below those born in 1955-64. But the generation born in 1975-84 is only doing 2 percentage points better than women born in 1965-74.

The research also shows that the gender pay gap is small on labour market entry but then widens quite rapidly. Analysis of these gender differences in wage growth among young workers concludes that approximately half of the rise in the gender pay gap is the result of differences in the labour market attachment of women and differences in the receipt of training (Manning and Swaffield, 2005). The main cause of this is that many women continue to take breaks from paid employment when they have children. Furthermore, when mothers return to the labour market, they often work part-time. Thus, although the overall pay gap between men and women in the UK has fallen in the last 30 years, there has been an important difference in the fortunes of full- and part-time women. While the earnings of full-time women have been rising relative to men’s, this is not true of the earnings of part-time women. Indeed, the ‘part-time pay penalty’ has widened since 1975 (when it was 10%) though most of the deterioration seems to have occurred prior to the mid-1990s (Manning and Petrongolo, 2005).

## 2. Changing organisations

CEP researchers have studied the performance of the labour market for many years. There is also a long tradition of CEP research looking at the determinants of economic performance at the level of the firm. This has focused on how productivity and other indicators of firm performance are influenced by both the external environment – such as the degree of competition, the extent of globalisation and the macroeconomic climate – and what happens within firms – workplace organisation, management practices and the interactions between unions and employers.

### *a. The impact of competition on firm performance*

The importance of competition for the performance of firms has long been a central tenet of economics, but until relatively recently, there has been a lack of detailed data on firms' inputs, outputs and competitive situations to test the theory. In the mid-1990s, CEP's Stephen Nickell published a landmark study, which showed that increasing the intensity of product market competition raises innovation and productivity.

Nickell also opened up two major new areas for future research on productivity: the significance of 'diffusion' – of new technologies and new ways of organising firms; and the extent of variability in the productivity of firms, not just between industries but also within industries and even within firms (Nickell, 1996). Both of these issues have continued to be central to CEP's research agenda.

A growing body of work by CEP researchers and others is confirming the importance of competition in driving productivity growth and pointing to the historic weakness of competitive intensity in the UK economy in many sectors. This weakness is gradually being eroded with increasing trade, deregulation in various product markets, privatisation and strengthened legislation against anti-competitive practices like the 2002 Enterprise Act, which was strongly influenced by research evidence.

In addition, it is widely acknowledged among economic researchers that competition should be encouraged not only at the national level, but also by openness to the international economy. Policies that encourage trade liberalisation, foreign direct investment and European integration are of great significance here – all issues at the heart of CEP's extensive research programme on globalisation <http://cep.lse.ac.uk/research/globalisation/default.asp>.

Competition is particularly helpful for explaining the UK's longstanding productivity gap with the United States, where firms by and large face more competition. It is competition that puts pressure on firms and managers to perform, and if UK managers were subject to more competitive pressures, it is likely that they would perform better.

The question now is how competition can be further enhanced. David Card of Princeton University and CEP's Richard Freeman report comparative measures of UK competitiveness, some of which indicate that it is now the least regulated of OECD economies (Card and Freeman, 2004). What impact this is having on UK firms' performance is part of the agenda for CEP's current research programme on management practices and productivity growth.

*b. The impact of management on firm performance*

Business schools and popular discussions of the corporate world tend to place huge stress on the importance of good management in top performing firms. Economists, meanwhile, have had relatively little to say about the role of management in driving productivity and other key performance indicators. This is largely because until recently, there has been an absence of good quality data on management practices measured in a systematic way across countries and firms.

A recent CEP study – conducted jointly with McKinsey and Company – filled this void, using an innovative survey approach to measure management practices in more than 730 manufacturing firms in France, Germany, the UK and the United States. By matching these data with information from firm accounts, the researchers were able to explore in detail the relationship between management practices and firm performance (Bloom, Dorgan et al, 2005).

Measuring management requires codifying the concept of good and bad management into a measure applicable to different firms within the manufacturing sector. McKinsey have developed an interview-based management practice evaluation tool that defines and scores from 1 (worst practice) to 5 (best practice) across 18 of the key management practices that appear to matter to industrial firms based on their expertise in working with thousands of firms across several decades.

The 18 practices fall into four broad areas:

- Shopfloor operations: have firms adopted both the letter and the spirit of lean manufacturing?
- Performance monitoring: how well do firms track what goes on inside their firms?
- Target setting: do firms set the right targets, track the right outcomes and take appropriate action if the two don't tally?
- Incentive setting: are firms hiring, developing and keeping the right people (rather than people they could do without) and providing them with incentives to succeed?

The study finds compelling evidence that better management practices are associated with higher productivity and other indicators of firm performance, including return on capital employed, sales per employee, sales growth and growth in market share. This is true in both the Anglo-Saxon and the continental European countries, suggesting that the researchers' characterisation of good management practice is not intrinsically biased towards UK and US approaches.

For each firm in the study, researchers interviewed and appraised against the McKinsey scale the performance of one or two senior plant-level managers, selected because they are senior enough to have a reasonable perspective on what happens in a firm but not so senior that they might be out of touch with the shopfloor.

Analysis of the survey data confirms a range of anecdotal evidence that US firms are better managed than firms elsewhere in the world including in continental Europe and the UK. On top of the national differences, there is also a huge spread of management practices across firms in every country. For example, some UK firms use world-class management practices while others are among the worst in the whole sample.

About 50% of this variation is explained by a firm's country and industry pairing, with the remainder due to the wide underlying distribution of management practices among firms in the same country and industry. Most notably, the data indicate that a large number of firms is extremely badly managed with ineffective monitoring, targets and incentives. Well-managed firms perform significantly better than poorly managed firms, with higher levels of productivity, profitability, growth rates and market values. So why do these variations in management practices persist? The researchers suggest three reasons:

- Product market competition, at the industry level, seems to be a primary driver of good management practices. This could work both by making managers work harder – an 'effort effect' – and also by driving out badly performing firms – a 'selection effect'. The research finds little evidence for an 'effort effect', suggesting that competition probably improves management practices mainly by forcing badly run firms to shape-up or close.
- A firm's age also seems to matter with very old firms having the lowest average scores for quality of management practices, particularly those in uncompetitive industries where competition does not weed out underperformers. This is consistent with the idea that new entrants find it easier than their older counterparts to adopt the best management practices of the era in which they were founded.
- Stronger labour market regulation significantly impedes good management practice, particularly in firms with longer tenured employees. This suggests that regulation can impede the adoption of new management practices.

Overall, superior US management seems to be driven by lower levels of labour regulation and a greater degree of product market competition. Compared with the UK, the country's firms also seem to benefit from higher levels of management skills.

*c. The impact of information technology on firm performance*

Related CEP research has explored the impact of investment in new information and communications technologies (ICT) on the productivity of UK businesses. The study – conducted jointly with the Office for National Statistics – finds that ICT does improve productivity, but how businesses are organised and managed seems to be a key influence on how strong the impact of ICT use is on productivity.

In particular, US-owned firms operating in the UK not only use more ICT than both domestic firms and other multinationals, but they also use it more effectively (Bloom, Sadun and Van Reenen, 2005). Looking at data on over 7,500 private sector establishments located in the UK, the research finds that:

- Investment in computer hardware and software are associated with significantly higher output per worker, a standard measure of productivity.
- US establishments located in the UK spend more on ICT. These US multinationals use about 40% more ICT capital per worker than average whereas non-US multinationals use only about 20% more and purely domestic firms use much less than the average.

- But this difference in ICT usage is only one part of the story. The US firms also seem to get more out of each dollar spent on ICT than domestic UK firms or multinationals from other countries. A doubling of the ICT stock is associated with an increase in productivity of 5% for a US firm but only 4% for a non-US firm. US firms simply get more productivity out of the same amount of ICT (which is not true of other forms of capital investment).
- The bigger returns to ICT usage for US firms are only found in certain sectors of the economy, notably those industries that intensively use ICT – such as retailing, wholesaling and publishing. These are exactly the same ‘ICT-using’ sectors that account for most of the US ‘productivity miracle’, the surge in productivity growth since the mid-1990s.

Why are the returns so much higher for US firms? The evidence from the management practices study suggests that what gives US firms an advantage is that their organisational and managerial structures are conducive to getting the most out of ICT.

So why do European firms not adopt more efficient forms of business organisation? There is some evidence that they are doing so. For example, the Wal-Mart model has been imitated by some of the UK’s largest supermarkets. It has also been transplanted directly as Wal-Mart has acquired Asda, the UK’s second largest supermarket.

But organisational changes are large and costly upheavals, so change is often slow and difficult. What’s more, there are regulatory and cultural constraints to adopting US business practices in Europe. But these should not be overstated since, according to the CEP study, subsidiaries of US multinationals located in Europe are significantly better managed than purely domestic firms and non-US multinationals.

#### *d. The impact of unions on firm performance*

One aspect of work organisation in the UK that has changed radically in the past two decades is the role of unions. CEP’s programme on the future of unions, led by David Metcalf, conducted a careful study of the changes to the industrial landscape brought about by the decline of union power, the breakdown of the closed shop and the dramatic weakening of the strike threat (Ferne and Metcalf, 2005). The main findings include the following:

- The average wage mark-up for unionised workplaces over comparable non-union workplaces is lower than in the past.
- Unionised workplaces are less likely to lower labour productivity compared to the past. Nevertheless some effects are still apparent. Whether the effect is positive or negative depends, in large part, on management attitudes to the union.
- Financial performance in unionised workplaces is, now (unlike in the past) on average, similar to that in non-union workplaces, although where the firm has some monopoly power, a union can siphon off some of the rent from capital to labour.

- There is no evidence that such transfers lower investment rates in firms and workplaces with union recognition compared to similar non-union organisations – indeed, investment in skills is stronger in unionised workplaces.
- On average, employment in a unionised workplace grows 3% more slowly (or falls 3% more quickly) than in a similar non-union workplace. If it persists, the implications for future membership levels are serious. This evidence suggests that the employer now has less incentive to oppose unions, but the worker has less incentive to join.

CEP's long-running research programme on industrial relations will next be focusing on the UK's experience of moving from a system in which collective bargaining is the main route through which employment contracts are regulated to one in which there are individual rights and direct state involvement. The new project will consider the nature of changes in the employment relationship and the factors that have played a role in reaching the current levels of worker representation.

### **3. Changes in education and skills**

CEP research on the labour market has always involved questions about the demand for and supply of skills. But given the growing importance of education and skills as policy issues, and their increased importance in determining labour market outcomes in the mid-1990s, CEP established a separate research programme devoted to them. CEP's work in this field subsequently influenced the 1999 decision by the Department of Education and Employment (now the Department for Education and Skills) to create the Centre for the Economics of Education (CEE) based at CEP and led by Stephen Machin.

CEE research explores all stages of the education sequence, looking at how education is produced, who gets more (or less) education and the economic impact of education on individuals, firms and society as a whole. A book edited by Stephen Machin and Anna Vignoles summarises the Centre's research findings to date, providing top quality empirical evidence on a diverse set of issues – including school effectiveness, higher education and vocational study (Machin and Vignoles, 2005). Much of the work has involved evaluation of the effectiveness of recent policy interventions.

#### *a. School effectiveness*

There has been longstanding concern among UK policy-makers about the poor basic skills of the UK population relative to other countries, particularly among younger workers. In the 1980s, the government responded by introducing a standardised National Curriculum for all students aged 7-16, aiming to ensure that all pupils studied a minimum depth and breadth of curriculum. In the 1990s, a further policy innovation was introduced – the National Literacy and Numeracy Strategies – which prescribed that children should be taught literacy and numeracy for least one hour a day.

Since 1997, the government has committed significantly greater resources to education. In real terms, public expenditure increased by one-fifth during the last two terms of the Conservative government (1987/88 to 1996/97) whereas it increased by over a third over the first two terms of the Labour government (1996/97 to 2003/04). The spending has had two clear

effects: the number of school teachers has increased by over 12,000 since 2001; and class sizes have fallen – nine in ten primary pupils are now taught in a class of no more than 30 pupils compared with seven in ten in 1997.

So have all these changes had a positive impact on school outcomes? Attainment at the end of key stage 2 and GCSE has increased markedly over time. But this does not necessarily mean that the policies are working: results may improve because teachers get better at ‘teaching to the test’ rather than imparting more ‘real’ knowledge.

A stream of CEE research has conducted systematic evaluations of the effectiveness of these policies. For example, a study of Excellence in Cities, a policy involving extra resources for schools in disadvantaged areas, shows that an extra £120 per pupil expenditure leads to an increase of 1-2% in the number of pupils achieving the target (level 5) in key stage 3 maths, with the most able pupils in schools with the highest rate of deprivation improving by considerably more (Machin, McNally and Meghir, 2005). Nevertheless, despite the success of such policies, the change in educational performance in the most disadvantaged local authorities remains stubbornly low (Machin, McNally and Rajagopalan, 2005). An evaluation of the National Curriculum has not been possible since it was introduced nationally. But careful evaluations of the Literacy Hour pilot schemes show that it was extremely effective in raising standards at low cost (Machin and McNally, 2004). This has been the case with the National Literacy Strategy which has also been important in raising the standards of reading and writing among primary school children, especially boys.

CEE research has also produced evidence on outcomes of the ‘choice’ agenda, the idea that greater choice will spur increased competition between schools, which will lead to improvements in efficiency. Recent studies have evaluated whether primary schools in England that face more competition perform better than schools in less competitive situations and whether parents who have more choice of where to send their children actually see gains for their children in terms of academic performance (Gibbons et al, 2006; and Gibbons and Silva, 2005). This strand of research finds little evidence of a link between choice and achievement, and only a small positive association between competition and school performance (which is not causal). What has been found, however, is that there is some evidence of a link between competition and ‘stratification’ which results in pupils of different abilities being less likely to be educated together. The government’s choice agenda seeks to give parents the right to a new school where they believe their child’s is not good enough. But parental choice is limited (and will continue to be) because state schools select pupils on the basis of residence. Parents who are able to afford it therefore often end up paying significantly higher house prices to move to the catchment area of better performing schools (Gibbons and Machin, 2003 and 2006).

One further area of school effectiveness that CEE research has examined is participation rates in post-compulsory education. The UK has a much higher dropout rate after 16 than other countries and these young people leave schools with a low grasp of basic skills (Hansen and Vignoles, 2005).

One element of the government’s strategy has been to offer cash inducements to stay on after 16 through the Education Maintenance Allowance (EMA). This policy was introduced nationally in September 2004 and involves a regular weekly payment to young people from disadvantaged backgrounds as an incentive to remain in post-compulsory education. A CEE evaluation of the EMA shows the impact of the subsidy to be substantial – an increase in

participation of 4.5 percentage points among those eligible for the EMA as compared with an education participation rate of those in the control sample (Dearden et al, 2006). The research indicates that half of these young people would have been inactive in the absence of the programme. What is less clear is how well these EMA students will do when they enter the labour market.

*b. Higher education*

Higher education has historically been the preserve of higher socio-economic groups in England and Wales and, although participation has risen substantially in recent decades, the relative position of lower socio-economic groups in terms of participation is still poor. The policy response has been to expand higher education further, in an attempt to widen access to previously under-represented groups. But in order to finance this expansion, tuition fees have been introduced, and there are obvious concerns that this will act to depress demand for higher education among poorer students.

CEP research by Jo Blanden and colleagues has examined the completion of higher education by income group by a series of cohorts of young people – those reaching the age of 23 in 1981, 1993 and the late 1990s. The study finds that over time, educational expansion is evident with increases in attainment for students from all backgrounds. But educational inequality has risen: young people from the poorest income groups have increased their graduation rate by just 3 percentage points between 1981 and the late 1990s, compared with a rise in graduation rates of 26 percentage points for those with the richest 20% of parents (Blanden et al, 2005).

The clear conclusion is that the expansion in higher education has benefited those from richer backgrounds far more than poorer young people. This occurred over a period when means-tested student support declined sharply. This is evidence for a cautious approach to raising tuition fees for universities and for a commitment to provide more generous grants and fair access if we wish to increase the participation of the poorest groups in any further expansion of higher education.

Going beyond the issue of socio-economic inequality, there are two main questions about the expansion of higher education. The first is whether more graduates are needed and whether, in the face of an increased supply of graduates, investment in post-secondary degree acquisition still yields a significant return.

Here, there is strong evidence from CEP research that the demand for graduates still outstrips the supply and there is still a significant payoff to having higher education qualifications (McIntosh, 2004). Despite rapid increases in the supply of graduates, facilitated by the expansion of higher education, wage differentials between graduates and non-graduates have not fallen over time. This implies that the demand for skills continues to rise and in the rapidly evolving modern workplace, there are fewer places for those without educational qualifications.

In the face of continually rising student numbers, the second question is where do we find the resources to fund universities? The issue of charging student fees to attend UK universities is an important policy question since many people think students should pay (especially if they are to earn a future payoff), while others believe university should be a free good. On this issue, the empirical evidence is much weaker, partly because UK tuition fees were introduced in a way that has prevented evaluation of their impact on student participation.

From an economic perspective, the empirical evidence of persistent high private returns to a post-secondary degree would appear to provide justification for greater student contributions in the form of higher fees. But the critical point returns to the issue of the socio-economic mix of students. If fees are charged (the structure of which may in the future go more like the United States with differential fees by subject and/or university), then it is absolutely vital that this does not act to reinforce inequality.

*c. Post-16 vocational education*

CEP is producing a considerable body of evidence on the impact of policy changes in school and university education. But for some years, the Centre has also researched the training outside schools and universities of the more than half of all young people in the UK who leave school at 16 with only basic qualifications.

CEP's *Skills for All* research programme, <http://cep.lse.ac.uk/research/skills/about.asp> led by Hilary Steedman, has examined the routes these young people take – or do not take – to higher levels of skills through vocational education, their motivation (or lack of it), the quality of education and training they receive and the contribution of employers and colleges to their success.

One of the central conclusions is that at present, all efforts to improve post-16 education and training, including apprenticeships, are seriously weakened by what happens pre-16. Specifically, pedagogic style and curriculum rigidity for young people up to the age of 16 are resulting in significant disaffection and under-achievement.

The most damaging manifestation is the reluctance of a significant proportion of school-leavers to continue to engage with any sort of formal learning. This undermines all efforts post-16 – and apprenticeships in particular. So the key message is that training is ineffective if basic education is not in place.

The government proposes an overhaul of vocational education, replacing the current system of 3,500 separate qualifications with diplomas in 14 broad areas. But CEP research shows that less able UK students who go down the vocational route at age 16 often end up with qualifications that do not benefit them in the labour market. For example, there is considerable evidence that there are no wage returns to most low-level vocational qualifications, although this changes for higher-level qualifications (Steedman and West, 2003; and McIntosh, 2004). Reasons include on the one hand a perception on the part of employers that low level qualifications signal low-level ability of individuals attaining them and on the other a lack of knowledge as to what is really learned in many vocational courses. It remains to be seen whether another reform to the system will increase the status of vocational qualifications both with students and employers.

CEP's *Skills for All* research has also compared the UK's performance in producing skilled individuals with that of other major industrialised countries – France, Germany and the United States – and an Asian tiger – Singapore. The 'skills audits' show that:

- In France and Germany, vocational qualifications continue to play an important role in enabling more young people to reach level 2 (GCSE) and level 3 (A-level equivalent) and above by age 25-28. In contrast, in the UK, where a relatively small number of pupils stay on in education past the age of 16, a low proportion achieves level 2 or 3 qualifications.
- In France, Germany and Singapore, substantial proportions of higher education qualifications are vocational/applied. In the UK and the United States, proportions with short vocational/applied diplomas/degrees are much lower.
- In 1994, Germany had an advantage of 14 percentage points relative to the UK in terms of 19-21 year olds with level 3 qualifications or above. The gap with the United States was of a similar magnitude and the gap with respect to Singapore was slightly smaller. These gaps have now disappeared. But the proportion of 25-28 year olds at level 3 and above has experienced rapid growth, not only in the UK but also in France and Singapore. The result is that the UK is just about 'keeping pace' with those countries rather than closing the gap.
- Qualification levels in the UK increase much more slowly after ages 19-21 than in France and Germany. In the latter countries, qualifications at level 3 and above increase substantially between the ages of 19-21 and 25-28.

## **LOOKING FORWARD: THE RESEARCH AGENDA OF THE MANPOWER HUMAN RESOURCES LAB**

This section looks forward to the research agenda that the Manpower Human Resources Lab is tackling in its first year. The research focuses on three themes:

- Organisational flexibility
- Lifelong learning and skills
- The changing labour market

### **1. Organisational flexibility**

In modern labour markets, the employment relationship has altered in a number of dimensions, and the way in which organisations are run and their ability to adapt and evolve are critical. Although this issue of ‘organisational flexibility’ has been central to a great deal of CEP research looking at what happens within firms, it has not been addressed directly in its own right.

Organisational flexibility is a much over-used phrase so it is important to be clear at the outset what it means. The research focus of the Human Resources Lab will be on flexibility at the firm and workplace level, where it is possible to distinguish between ‘numerical flexibility’ and ‘functional flexibility’.

Numerical flexibility is when employers use ‘non-standard’ contracts of employment to match labour supply to product and service demand and to parcel out work in a way that avoids exposure to the risk of ‘over-staffing’. Employers achieve numerical flexibility when employees work part-time, fixed-term, zero hours, annual hours or from home. It may also entail the use of short-term and/or flexible contracts with ‘outside’ labour (home workers, agency workers and temporary workers) employed either on an intermittent or longer-term basis, including contracting in and contracting out.

Functional flexibility is the requirement or expectation that workers will perform tasks beyond those strictly specified as their main role or function. This might entail ‘cross-working’ (performing other people’s jobs at the workplace), expanding the number of tasks performed or working in teams.

But organisational flexibility goes well beyond the deployment of flexible labour. It also relates to workplace change more generally, including the introduction of new forms of work organisation, job redesign, work techniques and the like.

Interest in organisational flexibility is occasioned by the belief that it is a ‘tool’ that management can use strategically in deploying resources to maximum effect. But there are few recent studies assessing the adoption of organisational flexibility and its effects on firm performance and on workers. The HR Lab will fill this gap by tackling the following questions:

- What is organisational flexibility and what is a conceptually sensible way to measure it?
- How does labour flexibility relate to other aspects of organisational flexibility?
- What role, if any, can organisational flexibility play in enhancing firm performance?
- What effect does organisational flexibility have on employees?

The research will address these questions using comparable workplace data for the UK – the Workplace Employment Relations Survey (WERS) of 2004 – and France – REPOSE 2004. These data sets are particularly rich in their coverage of workplace practices, and both contain information obtained from employers and employees, thus permitting examination of employer and employee experiences with organisational flexibility.

The rationale for a comparative analysis of organisational flexibility in the two countries is the contrasts between them. The UK is generally perceived to be a country that has embraced organisational flexibility in the last two decades under a labour market model that is characterised as ‘Anglo-American’, juxtaposed to the ‘European’ social model.

The French system is more heavily regulated by the government and there is strong social and political opposition to radical moves towards organisational flexibility. It is therefore valuable to explore the incidence, correlates and effects of organisational flexibility in its different forms in the two countries.

*a. What factors are associated with the adoption and presence of organisational flexibility?*

Although organisational flexibility is a tool that management can use strategically in deploying resources to maximum effect, it is often ‘hard-wired’ into a production process and reveals little about strategic usage of labour. For example, shift-working is standard for hospital nurses since hospitals are required to give 24 hour care to patients. In itself, it does not indicate employers’ preferences for organisational flexibility.

The research will examine the conditions under which different types of organisational flexibility are used and the extent to which they are used strategically by management. Without an understanding of the circumstances in which employers undertake organisational change, it is difficult to establish the reasons for its potential impact on performance for those adopting it and the potential impact of organisational flexibility on firms who are not engaged in change.

Using both cross-sectional and panel workplace data, it is possible to establish the antecedents to changes in organisational flexibility at workplace level and identify how this affects the amount of behavioural change within workplaces compared with compositional change in the population of workplaces.

*b. How does labour flexibility relate to other aspects of organisational flexibility?*

Few studies ‘unpack’ organisational flexibility. It is often used as a synonym for labour flexibility, but very little is known about the links between labour flexibility, increased flexibility in the production process and/or the mix of capital and labour, and alterations to organisational structures. It is therefore worthwhile investigating links between different facets of flexibility to understand how they relate to one another.

One question prompted by such an investigation is: what sorts of benefits might derive from greater labour flexibility, and is it likely to come with a ‘price tag’, for instance, through increased labour turnover or reduced employer incentives to invest in skills?

Descriptive analyses of WERS and REPOSE will establish the relationship between labour flexibility and other aspects of organisational flexibility. Multivariate analyses will be used to pinpoint factors independently associated with combinations of the two.

*c. What role, if any, can organisational flexibility play in enhancing firm performance?*

WERS and REPOSE contain information on workplace productivity and performance, which make it possible to establish the independent effects of organisational flexibility in both countries. The research will consider whether organisational flexibility influences various performance outcomes and how these effects are influenced by its interaction with other workplace practices, the nature of the product market and other features of the workplace.

*d. What effect does organisational flexibility have on employees?*

Organisational flexibility may affect worker well-being and commitment to the employer and thus productivity and performance. Yet the research literature on how organisational flexibility affects employees is fairly limited. With the linked employer-employee data in WERS and REPOSE, the research will establish independent associations between the advent of substantial organisational change and its effect on employees in that workplace.

It will also be possible to establish the effects of organisational flexibility on worker perceptions of their work – stress, performance, satisfaction and decision-making responsibilities – and organisational loyalty – commitment and pride. The linked employer-employee data contain multiple worker observations within a firm, making it possible to establish the degree to which worker responses vary within and across workplaces.

## **2. Lifelong learning and skills**

Ever since the early days of the industrial revolution, the UK's education system has been vilified for its role in the country's relatively low productivity. Concerns are expressed that the system of school education does not inculcate basic and soft skills required for a productive workforce, while higher and vocational qualifications do not generate the specialised skills employers require.

CEP's education research is providing systematic evidence on the economic value of investments in education made by individuals, firms and governments. But whose responsibility is it to train workers and potential workers – the government, employers or the individuals themselves?

The question is prompted by recognition that all three parties can benefit from increased training and a higher skills base, particularly if it makes job matches more efficient and increases the relative supply of labour. The fact that there are both private and public returns to skills generation makes the distribution of costs highly contentious.

At the same time, there is little consensus on the optimal level of skills in the economy. Some maintain that the UK suffers from a 'skills gap' and this acts as a brake on the generation of high

skilled jobs. Others counter that the UK generates low skilled jobs so that the growth in higher education is simply creating a cadre of over-qualified individuals ill-suited to the jobs at hand.

Recent empirical evidence for the United States and the UK (CEP research by Maarten Goos and Alan Manning) indicates that trends are a little more complicated than that since there has been growth in both the low-end 'manual' skills jobs and high-end high skilled jobs, with a concomitant decline in routinised mid-level jobs.

Against this background, the Human Resources Lab will tackle the following questions:

- Which employers train and why?
- What are the effects of training on firms?
- How common is job mismatch and what are its implications for workers and employers?
- How satisfied are workers with the training they receive at work?

The research will use the Workplace Employment Relations Surveys (WERS) for 1998--2004, nationally representative surveys of employers and employees that contain a number of off-the-job training measures, including the time spent training and the nature of training, making it possible to tackle the following:

*a. Which employers train and why?*

Although there is a presumption that employers can improve productivity by increasing the competence and skills of their employees, there are a number of reasons why employers may choose to minimise training. For example, some employers may adopt a 'low road' competitive strategy, in which employees are paid poorly and high labour turnover is optimal. Alternatively, employers may undertake little training where they are concerned that it will raise the bargaining power of workers or where trained workers are 'poached' by other firms.

The research will identify what features of the workplace, its employees and its competitive environment are associated with the type and intensity of off-the-job training undertaken.

*b. What are the effects of training on firms?*

Workplace-level panel data make it possible to establish the effects of employer-provided training on outcomes for firms, including productivity and financial performance, employment growth and workplace closure. Data are available to undertake this work over the period 1990-98 and 1998-2004.

*c. How common is job mismatch and what are its implications for workers and employers?*

Despite the evidence of CEP research that demand for graduates still outstrips the supply, some commentators continue to argue that the recent increase in higher education in the UK and elsewhere has outstripped demand for more highly qualified labour. If this latter view were really true, there might be an increase in the percentage of employees 'mismatched' with jobs in the sense that they would appear to be doing jobs that are below their competence levels.

Mismatch is usually conceived in terms of education, but it might be more appropriately addressed in terms of skills. A question on skills mismatch in WERS 2004 makes it possible to address the questions of who the mismatched workers are, their incidence and the correlates of being mismatched. It is also possible to address the consequences of mismatch for the worker and the employer in terms of job satisfaction, wages, loyalty and commitment to the employer, productivity and workplace performance.

*d. How satisfied are workers with the training received at work?*

We will seek to establish the effect satisfaction with training has on workplace performance. WERS asks employees how satisfied they are with the training they receive at work, together with the amount of training they receive. The research will look at the relationship between the amount of training undertaken and satisfaction with it and how this relates to satisfaction with eight other job aspects, and attitudes towards the employer.

### **3. The changing labour market**

CEP research has shed considerable light on changing patterns of employers' demand for and workers' supply of both skilled and less skilled labour. It has also identified ways in which government can affect levels of pay, the distribution of pay, job matching and the supply of skills through a range of labour market and education policies.

The challenge is to continue to map underlying labour market change and identify how firms and governments can respond in a way that enhances performance and, ultimately, worker and employer well-being.

Rather than ranging across all the issues CEP has been tackling, the Human Resources Lab will consider an emerging trend that affects employers everywhere yet is still poorly understood – the impact of growing demand for low and high skilled jobs on worker transitions and skill formation.

Although there is little doubt that skill-biased technological change has contributed to earnings growth in the upper half of the wage distribution, there is no widely agreed explanation as to why there has been growing demand for lower-end jobs. The idea of a 'polarisation of work' seems plausible but it raises some obvious questions:

- Since technological innovation is everywhere, why haven't these forces produced increasing wage inequality in more countries?
- How should workers, firms and the government respond to this polarisation in the demand for work in terms of skill acquisition and skill production, on the one hand, and wage setting and welfare policies on the other?
- Will the polarisation of work evident in some countries continue or will there ultimately be some convergence in the wage distribution?

A related issue, also tackled by recent CEP research, is the general perception that employers are no longer able to guarantee job security in the way they might have done some years ago, resulting in reductions in job tenure and increasing mobility of workers across firms.

Consequently, instead of offering job security, employers are emphasising their role in ensuring the ‘employability’ of their workers, by which they mean the provision of skills that may be transferable across firms. This raises a further question:

- Just how ‘portable’ are skills learned on and off-the-job?

The answer to this question might lead to proposals for alternative systems for funding training and skills provision. Gary Becker’s theory of ‘human capital’ formalised the notion of education and training as investments that could generate returns, both to employers in the form of increased output and to employees in the form of higher wages. This approach distinguishes general and firm-specific skills, a distinction that others have subsequently applied as a way of labelling how portable those skills are across employers.

More recent work by Edward Lazear and others has suggested that the distinction between firm-specific and general human capital is not so clear-cut as is often presented. This is important because the incentives for employers to pay for skills will depend in large part on their ability to recoup their investment rather than see that investment transferred as productive labour to another firm. The incentive for an employee to undertake training may depend on the extent to which that training can generate short-term and longer-term income streams.

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