



The key to prosperity

What can we learn from the productivity performances of comparable economies?

David Smith, Economics Editor, *The Sunday Times*

DURING THESE TIMES of economic uncertainty, it is easy to lose sight of the basics. Most basic of all is the question of what determines economic success over the long run. What determines whether Britain performs better or worse than other countries? What, in short, drives prosperity?

"Productivity isn't everything, but in the long run it is almost everything," was how Paul Krugman, the eminent economist, Nobel Prize winner and *New York Times* columnist memorably put it.

Another distinguished American economist and Nobel Prize winner, Robert Solow, once said something equally memorable: "You can see the computer age everywhere but in the productivity statistics." That, perhaps, gives us a better insight into what productivity is all about.

Solow was wondering why, with computers so ubiquitous, they seemed to have made little difference to measured productivity growth. Why had the rate of increase in output per worker – labour productivity – not increased at a time

when all of us have so much more processing power at our fingertips?

Since Solow's observation, there has been evidence of a more rapid rise in United States productivity, and information and communication technologies (ICTs) appear to be an important explanation of a change that set in around the mid-1990s. It may be that we can now indeed see evidence of the computer age in America's productivity statistics. That is not, however, the case for Britain or other European economies. Americans, with the aid of ICTs, have raised their game. Why has this not happened closer to home? It is a question that researchers have been examining in detail.

The research that has a direct input into policy. Successive governments have placed considerable emphasis on raising Britain's productivity game. When he became Chancellor of the Exchequer in 1997, Gordon Brown adopted as a key aim of economic policy closing the productivity gap with other countries. So there was immediate

Productivity is a key indicator of a nation's prosperity.



► interest among policymakers when, in 2004, the ESRC published a report summarising what research has revealed about the gap between British productivity and that of competitor economies, and the role played by various factors in explaining that gap, including competition, investment, innovation and skills.

The report drew on research by the Centre for Economic Performance, the Institute for Fiscal Studies and by the Advanced Institute of Management Research. It set out the research agenda on productivity and was launched at a seminar at the Treasury, bringing together researchers and policymakers to explore the current state of knowledge and lay out the key questions. Since then, significant progress has been made in productivity research. Researchers are now able to say much more about the size and sectoral breakdown of the gap; the productivity record in services, notably retailing and business services; the role of diffusion of ICT; the importance of management practices; and how science and innovation affects productivity.

These factors are not, of course, independent of one another. The best ICT in the world may make little difference to productivity if management practices are poor. Nor are they a comprehensive list of the factors that affect productivity performance. A stable macroeconomic environment, for example, is essential for investment and innovation. Education and training are also paramount.

The quality of the infrastructure is also high on the list of productivity-affecting factors, according to many business people. Productivity in the public sector influences private sector productivity, as does the quality of public services. Good healthcare and control of crime also enhance productivity.

Staying with the areas highlighted under the research agenda, however, what do the findings tell

Manufacturing employment in Britain has been in decline since 1970.

us? In general, Britain's productivity performance has been weaker than that of its major competitors in recent decades, though there has been some evidence of a slight narrowing of that gap in the past few years.

One method of identifying the gap is by the use of cross-country 'growth accounting' comparisons. Professor Mary O'Mahony and Dr Catherine Robinson find that, between 1970 and 1995, British productivity fell further behind France and Germany. From 1995, however, British productivity growth accelerated and narrowed the gap with these two main European competitors.

United States productivity growth accelerated over the same period though, pushing it even further ahead of all three European economies. Yet even within this, there was a positive development for Britain. In the 1970-95 period, employment grew only slowly compared with the United States and hours worked actually fell. Since 1995, the growth in British employment and hours worked has outstripped figures for the United States.

Manufacturing employment has declined in Britain since its peak in 1970, but service sector jobs have risen sharply. The research shows that the United States has a large productivity advantage in services, though Britain's relative performance is improving, mainly as a result of financial and business services.

Business services, the relative size of which in the British economy has doubled in the past two decades, is a particularly bright spot. The productivity gap in this sector relative to the United States has been virtually eliminated, with computer services and professional services – accountancy, advertising and the law – particularly strong.

Retailing, in contrast, is a problem, and accounts for most of Britain's productivity gap with the United States. British retailing suffers from poor

management (particularly in human resources) and reward and incentive systems. Long ago disparaged as ‘a nation of shopkeepers’, Britain does not appear to be very good at it. Professor Jonathan Haskel and his colleagues find that British retailing productivity is just 56 per cent of United States levels.

Why is British retailing productivity so far behind the United States, and why has the performance since the mid-1990s been so poor? One explanation lies with a 1996 policy change on land-use regulation, which made it more difficult for supermarkets and other retailers to expand by opening new out-of-town sites. In response, the supermarkets changed strategy, focusing their expansions on opening smaller ‘express’ stores in towns. Some, such as ASDA/Wal-Mart, stopped expanding at all.

The effect of this strategy was to reduce the average size of the supermarkets’ outlets, cutting median employment from 75 to 56. The result was a reduction in retail productivity. Not only are smaller stores less productive than larger ones but the expertise of the supermarkets, unsurprisingly, tends to be in running bigger shops. This effect of land-use regulation alone accounted for a fifth of the slowdown in British retailing productivity since the mid-1990s.

If Britain’s productivity performance has been adversely affected by regulatory interference, would reversing land-use regulations automatically boost productivity? Perhaps not. Professor Rachel Griffith finds that demographic differences mean Britain could probably never support enough of the very large stores needed to close the retailing productivity gap. In addition, some of the switch by the supermarket groups to smaller in-town stores was driven by customer demand. Older customers, in particular, appear less comfortable with the very large out-of-town stores they have to drive to.

Land-use regulation has prevented the supermarkets from opening large, high-productivity out-of-town stores.

Retailing also comes into another driver of productivity: ICT. One strong strand in the research is that, while all countries have increased their spending on technology, the United States has been more efficient in using it, particularly in retailing, wholesaling and finance. That ICT is important for productivity is not in doubt. One United States study finds that a one per cent rise in spending on ICT produces a five per cent increase in productivity.

Transatlantic differences in the impact of ICT on productivity reflect a number of factors, including workforce skills and, importantly, organisation. Flexible, ‘flat’ organisations appear to get roughly twice as much productivity bang for their ICT buck as those that are hierarchical.

Management, as another strand of the research confirms, is key. Some British firms use world-class management practices, while others are among the worst in this. Well-managed firms perform significantly better than poorly managed firms, with higher levels of productivity, profitability, growth rates and market values.

There is no magic bullet that can automatically improve the quality of management across British business. But competition and light regulation do appear to have the effect of creating a strong emphasis on competitiveness, thus helping to drive improvements in management practices.

Finally, ministers have placed considerable emphasis on the importance of the science base. How does this affect productivity? Part of the conclusion is a familiar one: Britain is good at invention but not so good at the commercial exploitation of new ideas.

Within this, however, there has also been a worrying decline in business spending on research and development (R&D) in Britain. Business expenditure has declined as a share of GDP over the past two decades, in contrast with the United States.



Long ago disparaged as ‘a nation of shopkeepers’, Britain does not appear to be very good at it

French R&D spending remains significantly higher than Britain’s.

Inward investment has, however, had a large beneficial effect on productivity performance. Multinationals and foreign firms carry out more than their fair share of R&D spending, with 40 per cent of the British total spent by them. United States firms alone are responsible for a quarter of British business R&D spending.

There is good and bad news in Britain’s productivity performance. Perhaps the most important lesson is that this is an area where there is plenty to learn from what other countries do. ■

The latest research evidence on productivity is summarised in *Closing the UK’s Productivity Gap* by Romesh Vaitilingam (Advanced Institute of Management Research, 2009).

<http://www.aimresearch.org>

Does shared capitalism work?

YES, FOR BOTH COMPANIES AND STAFF

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SHARED CAPITALISM, in which firms reward employees on the basis of the performance of their enterprise or workplace, has traditionally been viewed as a niche part of the economy. Famous names – John Lewis in Britain, Mondragón in Spain and, at one point, the United States company United Airlines – might operate in this way, but they are thought to be unusual organisations.

Our analysis shows that in Britain, the United States and elsewhere in the advanced countries, shared capitalist arrangements have increased way beyond niche status. Today, more employees have a bigger financial stake in their firms than ever before. Forty four per cent of United States employees have part of their pay linked to company performance, either through ownership, stock options, profit-sharing or gain-sharing. In Britain, one fifth of private sector workplaces have share ownership schemes covering one third of employees.

Some of the growth in share ownership in Britain over the past quarter century is attributable to tax privileges for firms that pay staff with ownership stakes. But some of the growth is also part of a movement towards giving employees more effective incentives through collective forms of pay. Despite the United Airlines bankruptcy, overall employee ownership in the United States has not fallen. And in Britain, an increasing number of firms, some with very different ownership models, have joined the Employee Ownership Association, which represents the growing co-owned sector.

In Britain, one fifth of private sector workplaces have share ownership schemes covering one third of employees

Is this any good for the economy? The narrowest view of worker behaviour says it can't be. Workers will 'free-ride' on the back of others instead of trying harder because of the financial incentive. And under British tax law, employees have to hold onto shares for three years before they benefit from the tax breaks – shares can go down as well as up.

What's more, worker effort and activity is only one factor influencing a company's performance. Aside from top executives, few employees have sizeable holdings that give them both a large financial stake and an influence on decision-making. But share ownership and other forms of shared capitalism are large and growing. So do they really lead to better performance?

Isolating the effects of share ownership on performance through economic analysis is tricky. Firms do not choose the schemes randomly. Share capitalist companies may be those that have identified benefits in sharing the rewards of good performance with their employees, while other firms may have chosen to be 'lean

and mean' because that pays off for them. In addition, many believe that firms with share schemes have more sophisticated managements and that it is the leadership that really matters, not the scheme.

But two recent studies find that shared capitalism works for British firms beyond the fabled John Lewis. The first, commissioned by HM Treasury, is the largest study of share ownership ever undertaken in Britain. Linking administrative data from HM Revenue and Customs records to company performance data, the authors find: "On average, across the whole sample, the effect of tax-advantaged share schemes is significant and increases productivity by 2.5 per cent in the long run." The study also finds that: "There are further benefits to be gained from operating several types of schemes." And schemes chosen by firms without tax advantages tend to pay off more than those with tax breaks.

Our research, which analyses data from the 2004 Workplace Employment Relations Survey, finds positive effects of share ownership on workplace productivity, with the effects being much more pronounced when shared capitalist schemes are deployed in combination. Share ownership has the clearest positive association with productivity, but its impact is largest when combined with other forms of shared capitalist pay.

The findings mirror results from the United States in the 2000s. Researchers at the National Bureau of Economic Research (NBER) have surveyed tens of thousands of workers about what makes shared capitalism work more or less effectively. They find that shared capitalism improves outcomes both for companies and their staff. For example, owning company stock strongly predicts both a culture of innovation and a willingness to engage in innovative activity.

A lot has been learnt about shared capitalist schemes as a result of this research but much remains to be understood. Firms often change the specific schemes they use. The schemes also appear to have larger positive effects in some sectors and firms than in others (though there is almost no evidence of any negative effects).

Neither we nor the authors of the Treasury-sponsored study feel sufficiently confident in the magnitudes of the estimated effects to assess whether the tax privileges given to shared capitalist arrangements are socially optimal. And neither we nor the NBER researchers feel sufficiently confident that we have identified the right mix of schemes and other policies that guarantees success with shared capitalism. But taken together, the growth of shared capitalist forms of pay and the research evidence that it pays off both for firms and employees give a picture that diverges greatly from the old view that this is just a small niche within capitalism. Shared capitalism works in Britain outside John Lewis. And it works in the United States and many other economies too. ■

http://cep.lse.ac.uk/_new/publications/abstract.asp?index=3202

HIDDEN INNOVATION? TESCO'S USA

Retail innovation has traditionally crossed the Atlantic from west to east. Is that set to change?

THERE IS BROAD agreement within business and government circles that innovation policy should be conceived to include the growing service sector. But as yet, very little is understood about the concept of innovation in services, and particularly how innovation works in Britain's most successful service sector companies.

A research project by the Advanced Institute of Management Research is tackling that problem by investigating innovation in the retail sector. The project, led by Professor Michelle Lowe of the University of Surrey, focuses on Tesco's entry into west coast United States markets in 2007 with the development of a network of 'convenience format' stores named Fresh & Easy Neighbourhood Markets.

Under the leadership of Sir Terry Leahy, Tesco has become one of Britain's most successful global firms. As the world's third largest retailer after Wal-Mart and Carrefour, the firm has significantly expanded its empire; more than half its operating space is currently outside its UK home market.

But Tesco's venture is unusual, both in terms of the innovatory aspects of market entry and the reversal in the conventional direction of knowledge transfer within the industry – retail innovations have predominantly flowed from the United States to Britain: self-service shopping and the parallel development of the supermarket were both United States innovations, as were trading stamps, the shopping 'cart' (trolley), the cash register, automated check-out conveyor belts, refrigeration, air-conditioning and plate-glass windows.

Initially, commentators were scathing about the potential of Fresh & Easy, citing previous American ventures by British retailers, including Sainsbury's Shaws and Star Markets chains in New England, and



Tesco is expanding into the United States with its 'Fresh & Easy Neighbourhood Markets'.

Marks and Spencer's acquisition of Brooks Brothers and Kings, which were eventually divested by their parent companies. But the evidence suggests that Leahy and his team have identified an important niche in United States supermarket provision. Fresh & Easy appears to be providing exactly what United States consumers require in terms of accessibility to convenient fresh foods at reasonable prices.

Despite "starting from scratch", with "no brand recognition and no customers" (as *Business Week* said in February 2007) Tesco are bullish, projecting the venture as a definitive 'launch' as opposed to a trial. With the retailer facing a saturated home market and repeated concerns about its dominance of that market, Fresh & Easy offers the prospect of a dramatic new phase of international growth.

Indeed, Tim Mason, CEO of Fresh & Easy, describes the experiment as a "transformational moment" in the firm's history. On what basis can he be so confident about the likely outcome? The answer arguably lies in various dimensions of innovation at Fresh & Easy that Professor Lowe's research is beginning to uncover. ■

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AT A GLANCE

Amid domestic concerns over its domination of the British market, Tesco has launched a series of 'Express'-style supermarkets on the west coast of the United States.

Corporate culture drives 'radical innovation'

THE GROWTH OF firms and national economies depends on the successful commercialisation of really new products and services – what Professor Jaideep Prabhu of Cambridge University's Judge Business School and his colleagues call 'radical innovation'.

And, according to their research, the strongest driver of radical innovation across nations is the corporate culture within firms. Corporate culture, they argue, consists of three attitudes and three related practices. The attitudes are willingness to cannibalise existing products, tolerance for risk and an orientation towards markets of the

future. The practices: empowerment of product champions, internal competition and incentives for enterprise.

The project for the Advanced Institute of Management Research uses survey and archival data from 759 public firms in 17 major economies, including Britain, Germany, Japan, the US, China and India, to compare the drivers of innovation across national contexts.

Factors such as measures of government regulation and country-level labour, capital and culture seem to be less important for driving radical innovation than has been argued. Corporate culture is a more significant

driver; so national attempts to spur innovation from the top down are doomed unless firms foster a culture of innovation from within.

The commercialisation of radical innovations is a stronger predictor of performance than measures such as patents. This result underscores the importance of measuring radical innovation and suggests that attempts to measure the relative innovativeness of countries by comparing the patents they generate or their research and development spend are misguided. ■

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EVOLUTION OF THE MODERN WORKPLACE

The last quarter of a century has seen tremendous upheavals in working conditions and practices

IMAGINE A WELL-INFORMED young worker of today being introduced to their counterpart in 1980 and they begin to discuss their work. They would quickly bewilder each other. It is not just that technologies have changed beyond recognition; they would probably have different experiences of how they have been trained, paid and motivated. They would almost certainly have radically different perceptions of trade unions.

There would be a sharp contrast in their notions of legal rights at work. They would likely report contrasting experiences of the intensity of their work, and the flexibility expected of them. And when they compared matters like weekend working, voices would probably rise in mutual incomprehension.

The last quarter century has seen unprecedented changes in British workplaces. These changes and their effects have been the focus of a major study by a team of researchers from industrial relations, human resource management and labour economics. The study is led by researchers at the Universities of Cardiff and Cambridge, the Policy Studies Institute and the National Institute of Economic and Social Research. Their analysis of the changing workplace is based on the Workplace Employment Relations Surveys, which provide unparalleled information on changes in employment relations from the beginning of Mrs Thatcher's first Conservative government to the end of the first decade of the current Labour administration.

In the private sector, the period saw the collapse of collective bargaining between employers and unions, previously the principal method of establishing and maintaining standards at work. The pace of decline was even greater than that of union membership. Accompanying the decline of unions has been a diminution in their effectiveness. The study shows that their effects on members' wages and workplace performance have diminished substantially. Union representatives are spending

less time bargaining over work and wages and more time coping with individual members' problems.

There have also been consequences for communications between workers and employers. Non-union employee representatives have not filled the gaps left by union representatives, so channels of communication between management and workers have become increasingly dependent on – and thus influenced by – employers. Employers are experimenting more with payment systems that link employees' wages to performance. More generally, human resource practices designed to give employees greater job influence and autonomy, such as team-working, have become increasingly popular.

The growth in foreign investment has played a part in this. But so has the internationalisation of British firms as new ideas are brought in from overseas. Yet the effectiveness of human resource practices has been uneven. They have brought productivity gains to employers, but often at the cost of increased worker anxiety and work intensity.

The experience of workplace change is mixed. In Britain, as elsewhere, there has been a decline in strike action, especially in the private sector. But the number of workers going to employment tribunals has increased, and covert expressions of conflict, such as absenteeism and resignations, have not diminished. Workers experience higher wages, greater use of their skills, reduced job insecurity and reduced risk of accidents. But this has been accompanied, at least up to the 1990s, by intensified work effort and a decline in autonomy.

What is driving these changes? Product market competition has become more international and more intense. This has moved profits beyond the organisational reach of unions, or has reduced them to a level where unions can no longer bargain for a worthwhile share. In the private sector, collective bargaining retreated most where profits were squeezed and where privatisation occurred.

AT A GLANCE

It is not just the technological advances that distinguish our working world from that of 25 years ago, there have also been major changes in how we engage with our employers.

Young people in jobs without training

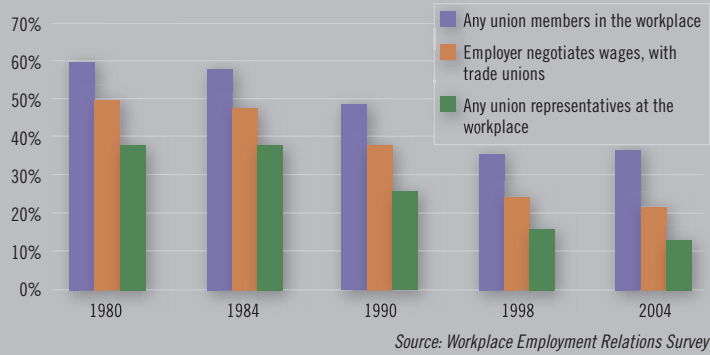
WHY DO SO many young people end up in dead-end jobs? To find out, Dr Sue Maguire and colleagues at the University of Warwick spoke to 36 school leavers in Warwickshire and the Tees Valley.

Common among the interviewees – a mix of men and women but almost all ethnically white and living with their parents – was a lack of confidence in their academic achievements and, all too often, negative school experiences. They did not work simply for money, but soon got used to a regular income.

The study detects three groups: 'taking a year out'; 'making a career'; and 'doing odd jobs'. Those in the first group had intended to move into full-time post-16 education but had failed to make the transition for various reasons. Some of the second group had started college courses and dropped out; finding a job had been a positive move – most did not see themselves staying in their job 'for ever', but valued the experience of working and did not see themselves as 'insecure' or 'disadvantaged'. Those in the third



THE DECLINE OF TRADE UNIONS ACROSS PRIVATE SECTOR WORKPLACES (25 EMPLOYEES OR MORE) IN BRITAIN, 1980-2004



Legal intervention has also been transformed from that of a passive prop for collective bargaining in the 1960s and 1970s, through an attack on union activity in the late 1980s and early 1990s, to the present day, where the law is used to provide a framework of minimum standards. The period also brought new production processes and the development of a more proactive approach to the management of employees, focused on improving organisational performance. At the same time, however, the liberalisation of capital markets has limited the range of strategies open to firms, and underpinned a flurry of mergers and acquisitions, which changed the ownership of organisations, often making the owners more remote.

This mix of competitive pressures has severely eroded the collective approach that once prevailed in employment relations. Managers' 'right to manage' is in the ascendancy, and the collective support of unions has increasingly been eroded or denied to workers altogether. The workplace may have become more efficiently managed than 25 years ago. But it has also become a more pressured place to work. ■

<http://www.niesr.ac.uk>

The Evolution of the Modern British Workplace edited by Willy Brown, Alex Bryson, John Forth and Keith Whitfield (Cambridge University Press, May 2009).

category had low Year 11 attainment and turbulent trajectories. They valued education and training but did not feel able to progress through this route. Having a job was about 'earning money'.

In terms of policy responses, some people in the 'year out' group may have avoided labour market entry if courses were not driven by September starts and had more guidance been available to those who applied late or did not secure their first option. People in the 'career' group were positive about their choice and were often receiving good quality training. Accrediting this training to national standards should be

a priority on the agenda for raising the school leaving age. The 'odd jobs' group remains a challenge. One solution could be to introduce legislative changes preventing employers from recruiting school leavers without offering accredited training. But this may push more young people into the informal economy. A starting point might be to introduce better post-16 follow-up and support systems, which would enhance awareness about this group of young people and their employers. ■

<http://www2.warwick.ac.uk/fac/soc/wie/staff/teaching-research/maguire>

MIGRANT WORKERS IN LONDON'S SERVICE SECTOR

MORE THAN 650,000 migrants from Central and Eastern Europe have found work in Britain since their countries became members of the European Union in 2004. Research by Professor Linda McDowell and colleagues at Oxford University as part of Gender Equality Network has been looking at the employment experiences of 120 of these foreign-born workers, some of whom have been employed in a Greater London hospital and some in a hotel.

The study finds stark differences between the two organisations in the characteristics of their migrant employees. In the hotel, rates of labour turnover are high and migrant workers occupy many of the lowest paid and least skilled positions, such as room attendants and porters. These migrants are young, single, usually over-qualified for their jobs and intend to move on as soon as they can.

In the hospital, however, even in the lowest paid positions, turnover is lower. Here the migrant workers are more diverse: often older, many with children, hoping eventually to find more secure employment in the National Health Service and planning to remain in Britain. Indeed, many of them already have the right of residence and others are British citizens.

The hotel relies heavily on migrant workers: 43 per cent of the surveyed workers there were on time-limited visas, compared with 24 per cent at the hospital. But many migrant workers in both sectors are exposed to insecure employment conditions, being recruited and employed by agencies rather than being 'direct' employees.

This is a precarious form of employment that leaves workers open to exploitation as they are typically employed under different conditions to their co-workers. In both workplaces, a quarter of the interviewees were agency employees but here too there were differences. The hotel management paid for unskilled bodies to perform mainly domestic work. The hospital bought a service, rather than individual workers, from a multinational firm specialising in contract catering and cleaning.

But in both cases low-skilled workers were typically recruited through London-based employment agencies and received the national minimum wage or a rate barely above it – well below the estimated 'living wage' in London. The authors comment: "What all these migrants have in common is that they are among the most exploited groups in the British labour market." (cf page 27.) ■

<http://www.genet.ac.uk/projects/project6.htm>



WEIGHTLIFTING COMPETITIONS

Lessons for performance management

MANY AREAS OF economic activity take the form of 'tournaments', where what matters is your performance relative to the performance of others. Think senior executives within a firm vying to be promoted to chief executive. Or pharmaceutical companies trying to be first to patent the cure for a disease. Or money managers trying to beat the market.

Evidence from both sport and corporate life shows that the bigger the prize for victory, the more effort the competitors put in. But what about the effects of such reward systems on the risks that participants take? For example, a pharmaceutical firm that is lagging behind in a patent race may start exploring more risky projects. And a money manager with below market returns might start investing in more risky assets.

Indeed, the Nobel Prize-winning economist Joseph Stiglitz has blamed the 'unconscionable' system of generous bonuses paid to investment bankers for exacerbating the global credit crisis: "The system of compensation almost surely contributed in an important way to the crisis. The system was designed to encourage risk-taking, but it encouraged excessive risk-taking. In effect, it paid them to gamble."

So when do the tournament-like incentives of bonuses have adverse effects? Research by Dr Christos Genakos of Cambridge University and Professor Mario Pagliero of the University of Turin has looked at evidence from weightlifting competitions to examine people's choices about effort and risk-taking in a tournament setting. They analyse round-by-round data on the performance of professional weightlifters in international championships, including the Olympic Games.

Weightlifting has the unique characteristic that athletes have to announce in advance the amount that they intend to lift. This means that it is possible to observe not only whether their efforts to lift a given weight are successful, but also, since attempting to lift a heavier weight is riskier, the strategy that they follow.

The study finds that the higher ranked an athlete is in the tournament, the heavier the weight they will attempt to lift. The same athlete will attempt to lift a weight four per cent (about 5.5kg) heavier if they are ranked first than if they are ranked tenth. And though the athlete would be awarded a higher score if they successfully lifted the weight, the chance of a successful lift is eight per cent less than it would otherwise be.

Since prizes are far greater at the top, going up an additional place is worth much more if you are already ranked highly: the extra you win from finishing second rather than third is greater than



Weightlifting involves intricate risk-taking strategies – and the higher the prize, the more risks athletes take. The world of business can be similar.

the extra from going from tenth to ninth. This suggests that tournaments with these characteristics encourage participants to take more risks overall. Indeed, the study shows that there is more risk-taking in more prestigious competitions like the Olympics, where the rewards are higher.

But the researchers also find that an athlete has a lower probability of successfully lifting a given weight if they are ranked first than if they are ranked tenth. This is surprising. Given the structure of prizes, one would expect athletes to be more motivated and exert more effort when they are ranked near the top, where the reward from a successful lift is significantly higher, so that the probability of lifting a given weight would increase when an athlete is higher ranked.

This finding suggests that athletes may perform badly under pressure, even though motivation and effort may be high. Such an interpretation is consistent with anecdotal evidence that athletes' performance may indeed deteriorate when the importance of a successful lift increases – the phenomenon known as 'choking under pressure'. The researchers show that athletes do 'choke' more frequently in the more prestigious competitions. The effect of 'choking' particularly affects inexperienced athletes, but not athletes who have already won a medal in an international competition.

Overall, these findings suggest that tournament-like incentives can be a powerful tool in the hands of capable managers. Individual workers are typically more risk-averse than large corporations: they typically only have one job; they do not want to risk it. Managers may use tournaments to induce risk-averse workers to innovate, experiment and, ultimately, take risky – but profitable – strategies.

On the other hand, tournaments can be too successful in encouraging risk-taking, leading to excessive risk and lower average performance. While this may be ideal in sport, it may not be so desirable within firms.

If firm profitability is affected more by average performance than by the rare exceptional performance of a few individuals, then tournament-like incentives may reduce overall performance. ■

<http://www.sel.cam.ac.uk/personal/genakos>

AT A GLANCE

Weightlifting competitions demand that athletes announce in advance the weight they will try to lift. This fact allows interesting comparisons with risk strategy in business.



MANAGEMENT IN THE CREATIVE FIELD

As Britain's creative industries expand, how are we managing the changes this growth brings?

CREATIVITY IS NOT usually mentioned in the same breath as management. The stereotype of the creative worker is a temperamental individualist who blows off managerial direction like so much froth on a cappuccino. Yet producing the products, services and performances of today's creative industries is increasingly complex, involving escalating budgets, tight schedules and a plethora of complicating factors, such as dynamic technologies and global economics. The production of films, exhibitions, video games and many other cultural goods now entails sophisticated capabilities for planning, coordinating, monitoring and adjusting.

Given the popular view of British industry as lagging behind other countries, can we expect managers in the creative industries to make sense of these changes? A recent study by the Advanced Institute of Management Research has shown that British managers are focused on the challenges facing the sector. The AIM research team of Dr Jonathan Sapsed, Dr Richard Adams, Juan Mateos-Garcia and Professor Andy Neely consulted over 100 managers, designers, producers and creatives from industries including architecture, broadcasting, music, the performance arts and video games.

They asked these practitioners to spell out their main concerns and what would be their priorities for research. The results point to five themes that occupy strategic and operational attention among creative professionals:

Integration and disintegration in the value chain: What are the effects of digital design tools among suppliers of cultural products, and digital distribution among their consumers? Will creative activities be shared and spread across firms and countries, and how

The management of today's creative industries is becoming increasingly complex.

should the revenues be allocated fairly? Should you create, buy or ally?

Business models and disruptive innovation: The old rules of intellectual property appear out of step with the pace of technology and the downloading habits of new generations of consumers. If you are the holder of content rights, like EMI or the BBC, how should you make money out of these rights while showing respect and realism to artists and audiences?

The creative process: Producing today's creative products can involve teams of hundreds of people with a wide range of skills. Meanwhile, consumers and users are increasingly influencing, modifying and devising their own creations. How should the creative process be organised so as to stimulate creativity rather than hinder it?

Management capabilities and skills: Many creative industries lack a formal career path and training in management. Evidence suggests that they typically involve unhealthy working hours and poor cash flow and pay compared with other industries. While there are high levels of professionalism in some instances, how can the creative industries in general reach the levels of the best?

Small firms and growth: The majority of creative businesses in Britain are small firms, freelancers and sole traders. How can those that wish to grow find finance, talent and advisory support to 'scale-up' and compete on an international stage?

The managers of Britain's creative industries may not yet have all the answers. But they are at least clear about the questions and the need for strategic attention. ■

<http://www.aimresearch.org/our-research/aim-research-projects/business-engagement-project>
<http://www.aimresearch.org/index.php?page=BEP-Creative-Industries>

AT A GLANCE

Five themes occupy the attention of management in Britain's creative industries. Such clarity indicates that management is indeed well-placed to deal strategically with inevitable change.

CHILDCARE FOR DUAL-EARNER COUPLES

Attitudes towards non-maternal childcare vary between class, gender and professional status

WHEN DUAL-EARNER couples become parents, they need to decide whether and when the mother should return to work and how the children should be cared for. Professor Rosemary Crompton and Dr Clare Lyonette of City University, as part of the Gender Equality Network, have explored this childcare dilemma in more than 90 interviews with men and women in a range of occupational sectors.

The study finds that women in professional and managerial jobs tend to emphasise the intrinsic rewards of employment. One woman in finance said, "I'd be a dreadful stay-at-home mum," and told how her own mother had "become a martyr" by being at home. But parents in middling and lower level occupations are likely to stress their need for

Women are less likely than men to believe that their children would suffer from non-maternal care.

two incomes. A retail worker says of his wife, "She had to go back to work: there was no money."

Professional and managerial women are more likely to have jobs when their children are young, and less likely to think that young children suffer from non-maternal childcare. Yet professional and managerial women who do stay at home express attitudes similar to those of women in intermediate and lower level jobs. This suggests that whereas professional and managerial women might 'choose' employment, those less well qualified are likely to be constrained by economic necessity.

Childcare arrangements also reflect class differences. Professional and managerial parents use nannies and private nurseries. Parents in intermediate and lower level jobs use childminders and are reliant on relatives, especially grandparents.

Men are significantly more likely than women to believe their children would suffer from non-maternal childcare. Yet on this issue, there are no class differences among men, though professional and managerial men are more likely to profess a 'liberal' perspective on gender roles in general.

Finally, the research finds that even when mothers have jobs, they retain responsibility for domestic work and childcare, even if they arrange for it to be done by others. So though men express a preference for gender role equality, their behaviour reinforces a traditional division of labour. ■



<http://www.genet.ac.uk/projects/project7.htm>

Consumers and market competition

CONSUMERS CANNOT RELY on suppliers of vital products in energy, telecoms and finance to give them the best deal. So why don't more switch?

Research by the Centre for Competition Policy (CCP) reveals a number of reasons: they don't know they can switch; they are confused by the complexity of tariff or product details; they think it takes too long to shop around; they think it's too hard to change; they lack confidence in their own decisions; and they believe any gains won't last because deals will change in future.

But one strand of the research also finds that the experience of switching supplier in one market boosts their confidence – and so the likelihood that they will switch in another market. After one change, they can gauge the time they need to spend searching, know what they are looking for, and how much they can trust the information they acquire.

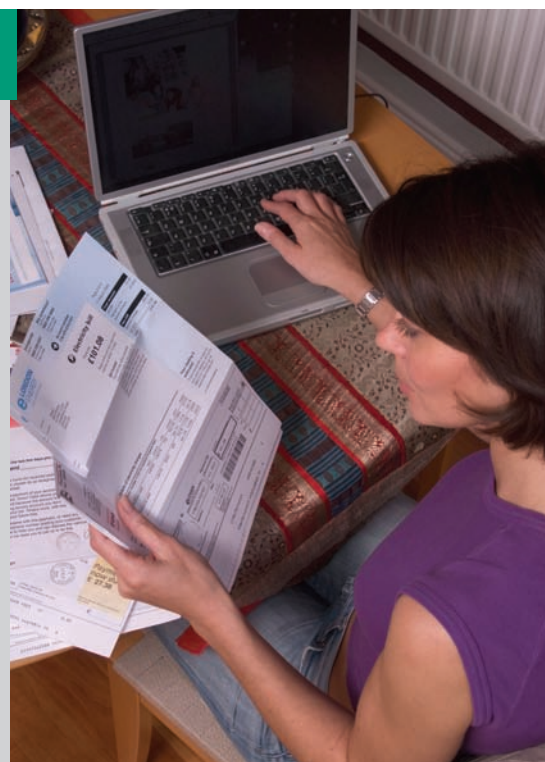
Another strand suggests introducing and enforcing common conventions on tariff structures, package size, product features etc, to

facilitate comparisons. Such conventions could promote competition so firms offer better, more understandable deals. CCP research also shows that consumers are more active in searching for, and switching to, a new deal if their current deal has an expiry date. Car insurance, for example, is often not automatically renewed at the end of its term.

By contrast, consumers are less active in the markets for current bank accounts and fixed telephone line services, where if they take no action their contract is automatically renewed. They may simply be too busy to explore alternatives and make a change.

Consumer organisations can help by advising on relevant information. Informed consumers are more confident; and confident consumers are more likely to switch when opportunities arise. Making consumers better informed will enable them to invigorate the competitive process. ■

<http://www.ccp.uea.ac.uk>





LEARNING PROCESSES

Strategies for small and medium-sized enterprises

HOW DO OWNER-MANAGERS of small and medium-sized enterprises (SMEs) deal with critical incidents in their companies' lives, such as a financial crisis, losing staff or acquiring customers? Researchers in the Evolution of Business Knowledge programme explored the experiences of 90 smaller firms in the north west of England, looking at how critical incidents lead to the acquisition of knowledge and the development of 'learning processes'.

The results confirm that most SMEs are reactive in their responses to external change and that their reactions are typified by high levels of informality. But while this informality can be an important source of competitive advantage, it can also inhibit the acquisition and embedding of new knowledge.

Systems for learning are important in a firm's development. But actual practices vary considerably, so the adoption of 'best practice' is not the key to success. Rather it is the ability to create the 'strategic space' to lift managers' attention towards a more distant horizon. Effective managers are able to stand back from day-to-day activities and consider longer term issues that affect their businesses.

The 90 firms studied operate in three sectors: services (media and culture, and retail), client-based (formulaic and bespoke advice) and manufacturing (high-tech and low-tech). And they were at different points in their business maturity, including firms that are start-ups, stable and innovatory.

The findings have implications for managers of SMEs and policymakers. First, it is crucial that owner-managers be able to create 'strategic space' by delegating responsibility and opening up to external sources of advice and information.

Second, learning within the firm can be much more effective if it is problem- and learner-centred and incorporates business analysis tools, problem solving forums or soft process technologies to assist the process of engagement and dialogue between staff at all levels.

Finally, government agencies and funding bodies should move away from classifying SMEs on the basis of simple measures of size, such as turnover or number of employees. Instead, they should focus on owner-managers' human and social capital and firms' 'absorptive capacity'. Firms with higher levels of potential absorptive capacity will respond positively to external advice and support. ■

<http://www.ebkresearch.org>

DEPENDABLE INNOVATION IN MANUFACTURING

TODAY MORE THAN ever, it is no longer sufficient for products and technologies to be innovative; they also have to be dependable – reliable, available, safe and secure. That is the message of Dr Luciana D'Adderio, researcher at the University of Edinburgh and Innovation Fellow of the Advanced Institute of Management Research.

Growing technological complexity and specialisation, coupled with increasing globalisation of productive knowledge and activities, generate steep challenges for manufacturers. These include verifying the properties of products for which the design, production and maintenance are distributed over increasingly extended organisational networks.

This validation challenge entails more than integrating data flows: it involves tracking and tracing knowledge and processes across a diverse range of functional, cultural and geographical boundaries within organisations. While the 'open innovation' model is critical in highlighting opportunities for global manufacturing, the obstacles to validating innovation across increasingly distributed and heterogeneous contexts should not be underestimated.

Dr D'Adderio's study is investigating the strategies, tools and practices adopted by leading manufacturers in the high-end electronics, software and automotive sectors to address the validation challenge. She finds mounting evidence that managing 'dependable innovation' will become one of the great challenges of the 21st century.

Having rapidly adapted to the new model of globalised technology production, British companies are well placed to reap the benefits: flexibility, agility and exposure to external sources of innovation. But they are also vulnerable to some of the potential downsides: loss of product quality and reliability.

The research is highlighting best practices for organisations operating in fast-changing, high-innovation environments that want to learn to recover rapidly from operational failure, detect faults and prevent errors from occurring and spreading. The winners in this highly competitive game will be those organisations that manage to remain innovative, flexible and agile while at the same time learning to perform in a consistently resilient and dependable manner.

If open innovation is the vehicle for supporting and fostering innovation in a global competitive context, dependable innovation is the engine that can ensure that it runs effectively and reliably. ■

<http://www.aimresearch.org>



AT A GLANCE

How do SMEs deal with critical incidents in their companies and how do their responses influence the development of their knowledge acquisition and learning processes?

Modern management

GOOD FOR THE ENVIRONMENT – OR JUST HOT AIR?

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RESearch by the Centre for Economic Performance has shown that well-managed firms tend to have better economic performance and offer a better work-life balance for employees. But a broader question is whether these superior results come at the expense of the environment. Better-managed firms should be able to reduce energy use through more efficient production techniques. But the higher productivity that good management involves may also require more physical capital and potentially higher energy usage. So the relationship between management practices and energy intensity is, a priori, ambiguous.

We have gathered the first systematic evidence on how the quality of management relates to firms' energy intensity, a key driver of greenhouse gas emissions. To measure management practices, we use an interview-based evaluation tool that defines and scores from one (worst practice) to five (best practice) 18 basic practices. The tool, which was developed by an international consulting firm, scores these practices in three broad areas.

The first is monitoring: how well do companies track what goes on inside their firms and use this information for continuous improvement? The second is target-setting: do companies set the right targets, track the right outcomes and take appropriate action if the two don't tally? The third is incentives: do companies promote and reward employees based on performance, and systematically try to hire and keep their best employees?

Well-managed firms are substantially less energy-intensive than badly managed firms

We have applied the tool to thousands of medium-sized manufacturing firms around the world to compare management practices and energy use across firms and countries. Britain is particularly well suited for this exercise as both its management score and its carbon dioxide emissions are close to the average in our sample.

Information on management practices was matched in a sample of some 300 British manufacturing firms with new data on energy efficiency from the Census of Production for the establishments owned by these firms. The results indicate that well-managed firms are substantially less energy-intensive than badly managed firms. Going from the 25th to the 75th percentile of management practices – moving from 'bad' to 'good' management practices – is associated with a 17.4 per cent reduction in energy intensity. The reduction in energy intensity associated with good management is robust to a variety of controls for industry, location, technology and other factor inputs. And it is large: given that carbon dioxide emissions are growing at about three per cent a year globally, a 17.4 per cent reduction is equivalent to about five years' growth.

The main reason that better management reduces energy use is that modern management systems, like Toyota's 'lean manufacturing system', explicitly promote waste reduction. One of the four buzzwords any visitor to a Toyota plant learns is 'Muda', waste. (The others are 'Kaizen', continuous improvement; 'Andon', the cord used to stop the line after a defect; and 'Kanban', the replenishment signal system used to minimise inventories.) Toyota employees are trained and rewarded for continuously reducing 'Muda' throughout the factory. They do so with the aim of cutting costs and increasing profits, rather than from any strong environmental concerns. In contrast, badly run firms are simply not able to achieve energy efficiency – think of the Soviet-era factories with their terrible management practices producing huge amounts of pollution.

So how can governments help firms to improve management practices and reduce energy use? Several key factors were identified that appear to play an important role in shaping management practices, and which can also play an important role in reducing pollution while delivering economic growth.

We find that product market competition is associated with significantly better management practices. In particular, the number of badly managed firms shrinks in highly competitive markets. Badly managed firms seem to improve their management practices or exit in competitive markets. Thus, the highly competitive product markets in the United States have led to almost no badly managed firms left in operation. In contrast, many product markets in Brazil, China and India have limited competition due to entry barriers, trade regulations and high transport costs, enabling badly managed firms to survive. Multinational status also seems to play an important role in determining management practices. Multinationals tend to be well run, be they located in Brazil, India or the United States.

In other work, we show that the affiliates of United States multinationals located in Europe are able to use their managerial advantage to make better use of information technology to raise productivity. We argue that multinationals are excellent vehicles for transporting productive and energy-efficient management practices across countries. The results suggest that policies aimed at improving management practices – such as encouraging competition by removing barriers to market entry, reducing trade barriers and promoting multinational ownership – will also improve environmental outcomes.

Improving management may provide a way both to increase economic growth and reduce environmental damage. And while this particular research focuses on Britain, the potential appears far greater in developing countries like Brazil, China and India where there is a huge tail of badly managed – and presumably energy-wasteful – firms. ■

<http://cep.lse.ac.uk/pubs/download/dp0891.pdf>