CentrePiece

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Fiscal policy
Financial regulation
Academy schools

Washington lobbyists
Chinese ghosts
Foreign takeovers

THE NHS WHITE PAPER

Evolution or Revolution?

CentrePiece

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Editorial

After the worst recession since the Second World War, the problem of unemployment is perhaps the biggest challenge facing policy-makers. So far the extent of UK job losses has not been as bad as expected based on the experience of the previous three recessions. But many fear that unemployment will rise further, especially as the public spending cuts take effect. For those without a job for extended periods, there is a risk of permanent 'scarring', especially for young people without prior work experience.

So it is particularly timely that the 2010 Nobel prize in economics has been awarded for research that explains the process of search: how people look for work; how they are matched with job vacancies; and how various 'frictions' impede that outcome.

One of the three new laureates is the first economist based in Britain to receive the accolade in over a decade: Chris Pissarides, who has been a cornerstone of life at the Centre for Economic Performance (CEP) since its foundation in 1990 and for many years led the research programme on macroeconomics, particularly unemployment.

Professor Pissarides explains his work thus: 'Our research looks at what happens to someone who loses his or her job because of changes in the economic environment. We have created a model that allows us to analyse the processes and decisions, such as policy, which affect how long it is before someone finds productive employment again.'

This research has immediate implications for policy-makers at a time of economic weakness: 'One of the key things we find is that it is important to make sure that people do not stay unemployed too long so they don't lose their feel for the labour force. The ways of dealing with this need not be expensive training – it could be as simple as providing work experience.'

There'll be more on what the Nobel citation describes as 'analysis of markets with search frictions' in the next *CentrePiece*. Meanwhile, this issue examines many other current policy debates. A piece on the recent LSE report on *The Future of Finance* summarises its radical proposals for regulatory reform. And articles on the NHS White Paper and 'coalition academies' launch a series that will draw on CEP research to evaluate policy innovations by the new government.

Elsewhere, we report studies of the impact of China's rise on Western innovation; of the impact of new technology on demand for skills; and of the impact of the euro on trade within the European Union. Perhaps the most topical for the UK is a cross-country analysis of the effectiveness of fiscal policy. As the cuts to public spending start to be implemented, the key question is what will be the ultimate effects on growth and jobs.

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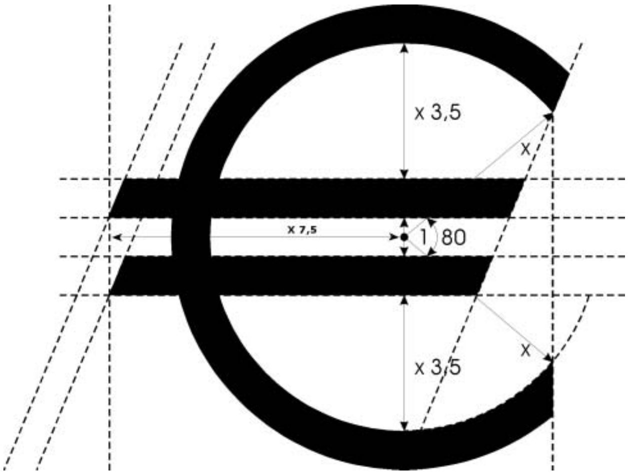

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in brief...

What impact is the rise of China having on technological change in the West? To answer this question, **John Van Reenen** and colleagues have tracked the innovation and productivity performance of more than half a million manufacturing firms in 12 European countries over a decade.

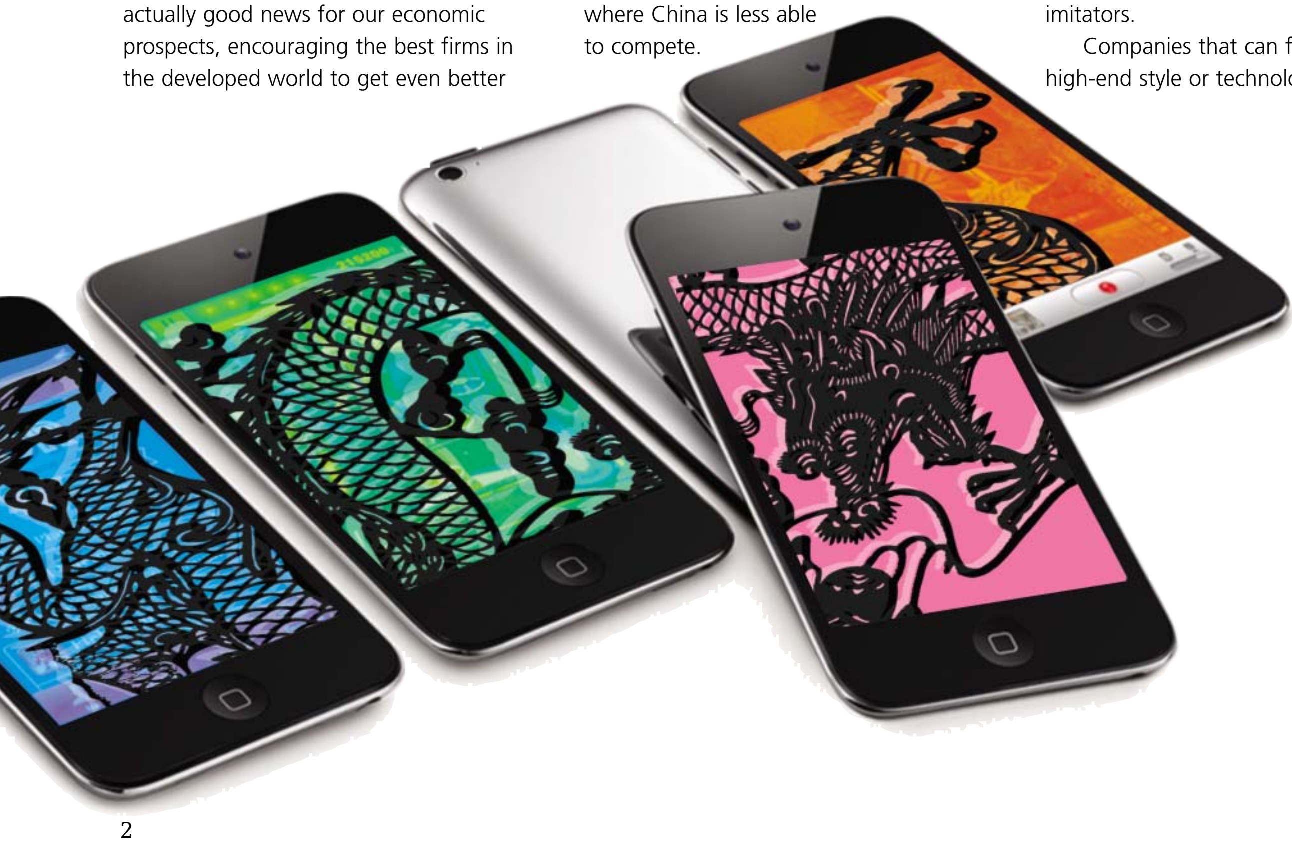
Chinese ghosts in the Western machine

Twin spectres are haunting Europe and the United States: the growing economic power of China; and fears about where the West's own growth will come from after the crisis. But our research suggests that the dramatic rise in Chinese exports is actually good news for our economic prospects, encouraging the best firms in the developed world to get even better and to make the innovations that will power growth in the future.

Take footwear, a classic low-tech sector that conventional wisdom says should have all been offshored to China. Many Western shoe manufacturers have disappeared, but some are innovating in designs that serve parts of the market where China is less able to compete.

For example, Massai Barefoot Technology (MBT), which makes posture-correcting shoes, began when Karl Muller, a Swiss engineer with a bad back, relieved his condition through walking barefoot on Korean grass. He patented a design to emulate the effect, which has gone on to great success and now attracts many imitators.

Companies that can find a niche for high-end style or technology can prosper



> **The dramatic rise in China's exports is good news for the West's economic prospects**

in the face of stiff competition. Vermont-based Burton is a leading snowboard manufacturer, but also successfully designs and produces sportswear clothing. This year, Burton is offshoring the production of snowboards not to China, but to Innsbruck, Austria.

Firms like MBT and Burton have responded to the threat of China by investing in new technology and staff training, and by innovating in highly customised designs. Why were so few firms doing this already? The answer is that enjoying the easy life producing old goods is more attractive than coming up with new ones. But a big shock like China makes innovation relatively cheaper than continuing with business as usual.

That shock first hit when China joined the World Trade Organization in 2001 and quotas on many Chinese goods were reduced substantially. This led to a huge surge in imports and a battle between retailers and manufacturers as the latter succeeded in getting some quotas reinstated. Former European Union trade commissioner Peter Mandelson was in the thick of these 'bra wars' in 2005, as Chinese-made clothing – notably women's underwear – piled up in European ports.

These events provide natural experiments for examining the effect of Chinese competition, an opportunity that the CEP has taken. In the largest ever study of the impact of China on Western technological change, we track the performance of more than half a million manufacturing firms in 12 European countries over the past decade.

A startling finding is that 15% of technical change in Europe can be attributed directly to competition from Chinese imports, an annual benefit of almost €10 billion to European countries. Firms have responded to the threat of Chinese imports by increasing their productivity through adopting better information technology, higher spending on research and development, and increased patenting.

But not all firms have seized the opportunity. Inefficient low-tech firms have been much more likely to shed jobs and disappear. This in itself raises productivity through the brutal force of natural selection as economic activity is reallocated away from inefficient enterprises to their more nimble-footed competitors. About a third of the overall effect of Chinese competition occurs in the form of this 'creative destruction'.

The job losses for some firms explain the political resistance to trade and why pressure is mounting to 'do something'. The announcement of another massive China trade surplus in August during an otherwise tepid global recovery has added to these fears.

But doling out export subsidies, threatening to label China a 'currency manipulator' or erecting trade barriers (such as President Obama's 35% tariffs on tyres last year) to protect the business and labour lobbies that are losing out are precisely the wrong way to go. Such measures will merely delay restructuring, drive up domestic prices and encourage industries to invest more in lobbying than innovation.

Openness improves overall prosperity, but the worry is that the burden of adjustment falls more heavily on the poor than the rich. Standard economic theory puts this down to increased pressure on the wages and jobs of unskilled workers who are now competing with workers in Beijing rather than just Birmingham.

> **Chinese imports boost the European economy by almost €10 billion a year through stimulating innovation**

Previous research on this 'Heckscher-Ohlin trade effect' suggests that it has been pretty small. Our data show that a greater cause for concern is that there will be a fall in demand for the less educated because of a China-induced acceleration of technical change. The appropriate policy response is not Luddism, but increasing human capital through education and training, and easing the transition of displaced workers across jobs.

There are additional benefits of Chinese trade to those that increase the innovation rate of Western firms. For example, consumers have enjoyed lower prices. Bigger export markets have spurred investment. And offshoring has enabled devices such as the iPod – produced in China but designed in Silicon Valley – to be created, because without the availability of cheap manufacturing many of these devices would never have been developed.

China's rise is undoubtedly a political challenge. But trying to keep China down by freezing it out of the world trading system would surely have been more politically dangerous than keeping China engaged and thus aligning its economic incentives with those of the developed world.

The Chinese have a saying about haunting spectres: 'If you believe it, there will be, but if you don't, there will not'. If Europe and the United States continue to encourage belief in the danger of Chinese trade to their own economies and try to weaken China through trade barriers, the spectre of China will not disappear. On the contrary, the West's own growth will be enfeebled – and that would be unwelcome even in good times.

This article summarises 'Trade Induced Technical Change: The Impact of Chinese Imports on Innovation and Productivity' by Nick Bloom, Mirko Draca and John Van Reenen, a forthcoming CEP Discussion Paper.

Nick Bloom is an assistant professor of economics at Stanford University and a CEP research associate. **Mirko Draca** is a research economist in CEP's productivity and innovation programme. **John Van Reenen** is director of CEP and of its productivity and innovation programme.

Since the US company Kraft Foods acquired Cadbury earlier this year, there has been much debate about whether foreign takeovers of this kind are good or bad for the British economy. A new book by **Geoffrey Owen** sheds light on this debate by looking at what happened after the acquisition of Courtaulds over a decade ago.

Foreign takeovers of British companies: the experience of Courtaulds

In the months following the acquisition of Cadbury by Kraft, trade unions, business lobby groups and even the business secretary Vince Cable have called for tougher rules on foreign takeovers of British companies. Part of the argument centres on whether multinational corporations like Kraft are less likely than British owners to invest in the UK and to preserve British jobs.

Leaving aside the question of whether Cadbury can accurately be described as British (80% of its sales were outside the UK and around half its shares were owned by North American investors), it is hard to see why Kraft should not have as strong an incentive as any other owner to make the best possible use of the assets it was buying, including the British plants and the Cadbury brand. Kraft may or may not make a success of the takeover, but does its foreignness make any difference to the outcome?

Some light can be shed on this issue by looking at a foreign takeover that took place 12 years ago – a long enough period for the consequences, in terms of jobs and investment, to be assessed with some degree of accuracy. This was the purchase of Courtaulds – like Cadbury, a long-established British company with a distinguished history – by Akzo Nobel of the Netherlands in 1998.

At the time of the takeover, Courtaulds had two main businesses: man-made fibres, which had been the core of the company for nearly 100 years; and paints, which had been built up by a series of acquisitions since the 1960s. For Akzo Nobel, the main attraction of Courtaulds was its paints division. Thanks largely to the investment that Courtaulds had made in Asia, it had geographical and product strengths that the Dutch company lacked. The acquisition would consolidate Akzo Nobel's position as one of the world's leading paint manufacturers.

Akzo Nobel also had a man-made fibres business, but it was performing poorly and CEO Cees van Lede had been trying to sell it. Van Lede believed that if the two companies' fibres divisions were put together, the enlarged business would be easier to sell, perhaps through a public flotation or to a trade buyer. Not long after the takeover, van Lede did find a buyer in the form of CVC, a private equity firm that specialised in taking over mature businesses, improving them and selling them on.

There is no reason to suppose that a foreign takeover will put British factories and British jobs at risk

So what has happened to Courtaulds' British plants and the British jobs they provided? In paints, there is not much doubt that Courtaulds' main production and development facility, at Felling near Gateshead in the north east of England, has benefited from being part of Akzo Nobel.

Courtaulds had been a diversified group, and the paints division had to compete for new investment against other unrelated subsidiaries. Akzo Nobel now derives two thirds of its sales from paints (the other third is in speciality chemicals) and is totally committed to world leadership in this industry. The ex-Courtaulds paints business, mainly marine and industrial coatings, forms an integral part of the group, and investment in Felling has increased.

The fibres side is a more complicated story, since CVC chose not to keep the combined Akzo/Courtaulds fibres business as a single entity, as had been Akzo Nobel's original intention, but to sell the component parts piecemeal. In a disposal process that lasted from 2000 to 2008, most of the viable fibre plants went to trade buyers that had a strong commercial interest in the businesses they were acquiring and, for the most part, have continued to invest in them.

This is particularly true of the new cellulosic fibre, known as Tencel, which was seen at the time of the Akzo Nobel takeover as the jewel in Courtaulds' fibres portfolio. Tencel was bought by the Austrian company Lenzing, which is now Europe's largest man-made fibres producer. Lenzing has continued to invest in the ex-Courtaulds Tencel plants at Grimsby in the UK and Mobile in Alabama, and the fibre is now well established in the market.

Would these outcomes have been different if Courtaulds had remained a British company? Here, there is an important difference with the case of Cadbury. By the end of 1997, it had become clear that Courtaulds was probably not viable in its existing form, and that the paints subsidiary would do better on its own. That was the rationale for the decision by the Courtaulds board, announced in February 1998, to break up the group and demerge Courtaulds Coatings as a separate company.

As it turned out, the demerger did not go through because it was overtaken by the bid from Akzo Nobel. But even if Courtaulds Coatings had been listed on the London stock market, it would probably not have stayed independent for long. The world paints industry was going through a period of consolidation, and the relatively small British company would have been an attractive takeover target for one of the big European or US manufacturers.

The takeover of Courtaulds was described by one commentator as an industrial tragedy. But over the preceding 30 years Courtaulds had made mistakes and become an unwieldy conglomerate. Under the British financial system – widely dispersed share ownership and an active market for corporate control – companies that make mistakes and lose the confidence of their shareholders become vulnerable to takeover.

What matters for the health of the economy is not that any particular company, however large and distinguished, should be preserved intact, but that its assets should get into the hands of people who are likely to manage them well. In global industries such as man-made fibres and paints, the appropriate owners may well be international rather than British companies. In such cases, there is no reason to suppose that a foreign takeover will put British factories and British jobs at risk; they may well be more secure under a foreign owner than under a British one.

This article draws on *The Rise and Fall of Great Companies: Courtaulds and the Reshaping of the Man-made Fibres Industry* by Geoffrey Owen, published by Pasold Research Fund/Oxford University Press in September 2010.

Sir **Geoffrey Owen** is a senior fellow in LSE's department of management.

The assets of companies like Cadbury and Courtaulds should be in the hands of people who are most likely to manage them well

The creation of the euro has reinvigorated a long-running debate about the wisdom of currency unions. **João Santos Silva** and **Silvana Tenreyro** investigate whether the new currency has delivered the promised increase in trade between member countries.

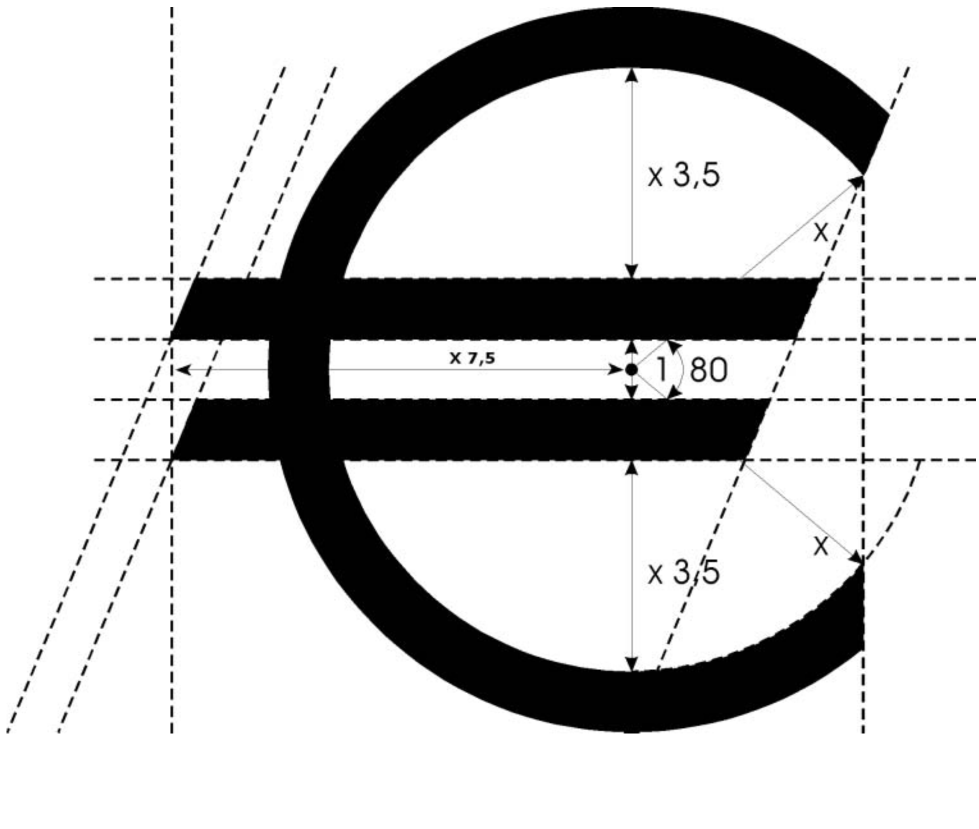
Has the euro increased trade? Short answer: no

What are the costs and benefits of establishing a currency union between countries? In his seminal theory of 'optimum currency areas', Nobel laureate Robert Mundell (1961) envisaged that the main economic benefit would be the increase in international trade stemming from the elimination of currency conversion costs and the possibly greater predictability of prices.

The main argument against currency unions is the loss of member countries' independence to tailor monetary policy to their local needs. But Mundell suggested that three conditions reduce the cost of relinquishing monetary independence – similarity of the economic shocks that members experience; wage and price flexibility; and mobility of capital and labour. These conditions tilt the policy choice in favour of a currency union.

Until very recently, there has been little progress in the empirical assessment of the costs and benefits of joining a currency union. Indeed, 40 years after Mundell's seminal paper, Andrew Rose (2000) would present the first systematic attempt to quantify the effect of currency unions on trade. Rose estimated that sharing a common currency increased bilateral trade between countries by over 200%. This result was received with some scepticism, and a large number of papers, including some by Rose himself, investigated the robustness of the initial finding.

Empirically assessing the effects of currency unions on trade is a difficult task that raises a number of methodological issues (discussed in Baldwin, 2006), which have not always been dealt with satisfactorily. Despite concerns about the reliability of the empirical results, most work in this area found a substantial effect on trade from pre-euro currency unions, and a consensus grew that such unions do indeed enhance trade, even if by less than initially estimated. But projections for the eurozone were hard to make because the union involved relatively richer countries that were already fairly well integrated. Time was needed to gauge the trade effect of the euro.



There is little evidence that the creation of the euro has had an effect on trade between the original members

The first evaluation of the euro's effect was undertaken by Alejandro Micco and colleagues (2003), who concluded that the currency increased trade among eurozone members by between 4% and 16%. Subsequent work has addressed various shortcomings of that study, including the short sample period (from 1992 to 2002), the 1993 break in the trade series resulting from changes in the way statistics are collected, as well as other methodological issues discussed in Baldwin's 2006 paper.

These studies generally confirmed the positive effects of the euro on trade. But the range of estimates for the euro's effect is very wide: from 2% to more than 70%. Unfortunately, most of these studies are marred by methodological weaknesses and their results should be viewed with caution.

In an attempt to provide more reliable evidence, our research estimates the effect of the euro on trade using what is known as a 'differences-in-differences' approach. Loosely speaking, this technique is based on the comparison between trade flows for the periods before and after the euro was introduced for two groups of countries: those that joined the euro during the observation period (the 'treatment' group) and a comparable group of trading partners that did not join the euro (the 'control' group). The effect of the euro can then be obtained as the difference in the changes from the pre- to the post-euro period for the two groups.

The use of the differences-in-differences approach is now standard in labour economics and health economics, but has not been used in this context. It is particularly appealing for this purpose because it allows estimation of the euro's effect while taking account of systematic differences between the countries that joined the euro and comparable countries that did not join, such as the UK and Denmark.

In particular, the method takes account of the fact that the economies of the eurozone countries were already deeply integrated before the currency was introduced. Micco and colleagues also accounted for this in some of their estimates but, as indicated, their work suffered from other limitations.

Our study is also novel in that it implements the differences-in-differences estimation using methodological advances in our earlier work on the estimation of models for trade flows (Santos Silva and Tenreyro, 2006).

We implement the approach using the 'euro-12' (Austria, Belgium, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal and Spain) as the treatment group and analysing three control groups of different sizes and various degrees of similarity to the euro-12.

Our new results confirm that long before the euro was created, trade between the euro-12 was already considerably stronger than between comparable countries, even those that were part of the European Union. More interestingly, the results strongly suggest that after controlling for the fact that the euro-12 countries already traded much more intensively, there is little evidence that the euro had any effect on trade between them.

So what Mundell considered the main benefit of a currency union does not appear to have been realised for the euro, at least not for the euro-12. It is, however, possible that the euro has had and will continue to have a significant trade effect for newer eurozone members, the economies of which were not so deeply integrated before joining the euro. More time will be needed to evaluate this possible effect.

The economies of the eurozone countries were already deeply integrated before the currency was introduced

This article summarises 'Currency Unions in Prospect and Retrospect' by João Santos Silva and Silvana Tenreyro, *Annual Review of Economics* 2: 51-74 (September 2010). An earlier version is available as CEP Discussion Paper No. 986 (http://cep.lse.ac.uk/pubs/download/dp0986.pdf).

João Santos Silva is a professor of economics at the University of Essex. **Silvana Tenreyro** is a reader in LSE's economics department and an associate in CEP's macroeconomics programme.

Further reading

Richard Baldwin (2006) *In or Out: Does it Make a Difference? An Evidence-based Analysis of the Trade Effects of the Euro,* Centre for Economic Policy Research.

Alejandro Micco, Ernesto Stein and Guillermo Ordoñez (2003) 'The Currency Union Effect on Trade: Early Evidence from EMU', *Economic Policy* 18: 315-56.

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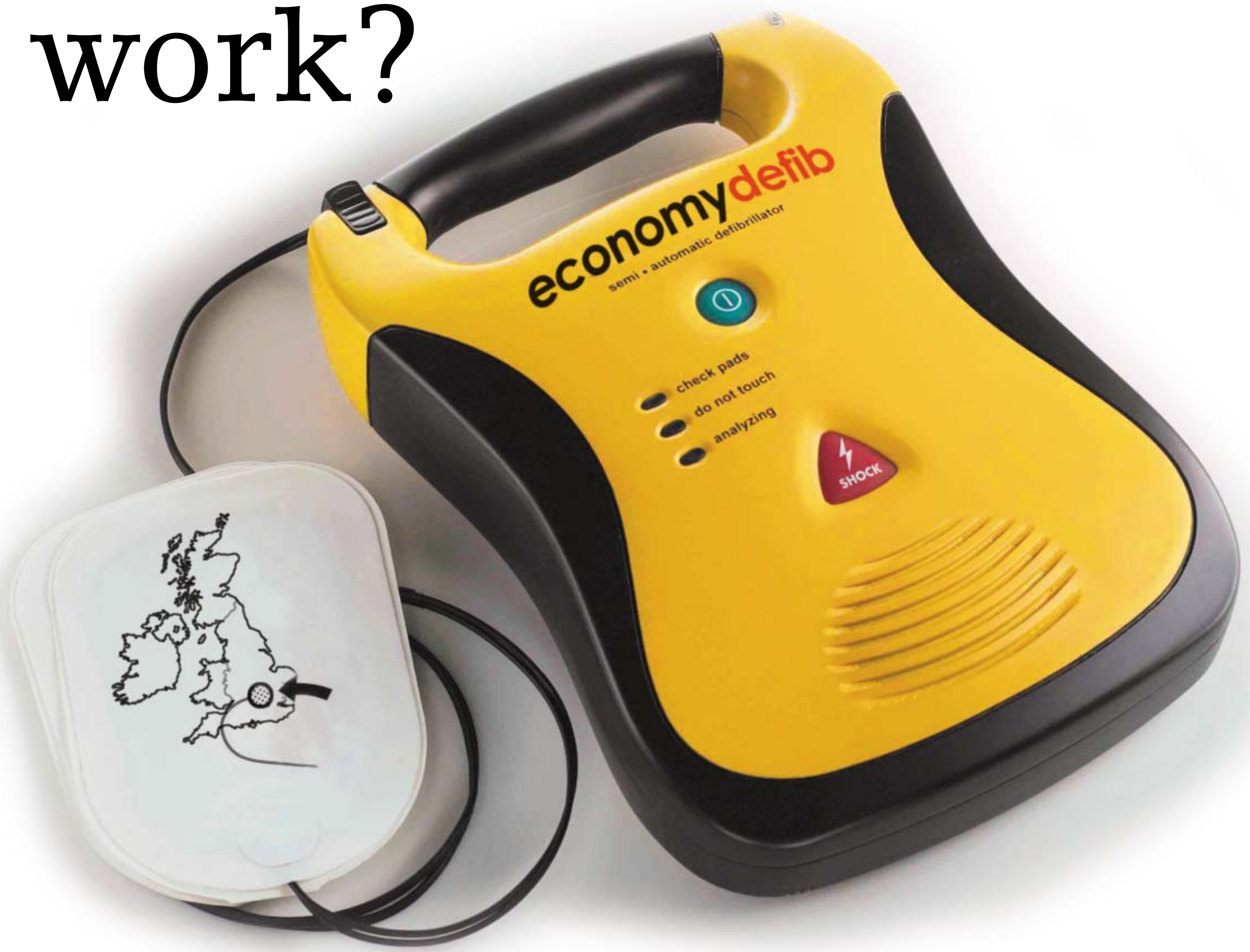
Andrew Rose (2000) 'One Money One Market: Estimating the Effects of Common Currencies on Trade', *Economic Policy* 15: 9-48.

João Santos Silva and Silvana Tenreyro (2006) 'The Log of Gravity', *Review of Economics and Statistics* 88: 641-58.

Under what circumstances do programmes of fiscal stimulus and fiscal austerity have a significant impact on the level of national economic activity? To address this question, **Ethan Ilzetzki** and colleagues have assembled a new database on government spending and GDP in 20 high-income countries and 24 developing countries.

Does fiscal policy work?



The size of the fiscal multiplier critically depends on key characteristics of the economy, including its monetary regime and openness to trade

Over the past two years, numerous countries have introduced packages of 'fiscal stimulus', increasing government spending (or lowering taxes) in an effort to boost demand and bring their economies out of recession. In such circumstances, one might have expected a certain degree of consensus within the economics profession on the effectiveness of fiscal policy. But nothing could be farther from the truth.

In a January 2009 piece in the *Wall Street Journal*, Robert Barro argued that the peacetime 'fiscal multiplier' – the dollar increase in GDP caused by a one dollar increase in government spending – is essentially zero. At the other extreme, Christina Romer, chair of President Obama's Council of Economic Advisers, used multipliers as high as 1.6 in estimating the job gains that will be generated by the $787 billion stimulus package approved by the US Congress in February 2009. The difference between the Barro and Romer views of the world amounts to a staggering 3.7 million jobs by the end of 2010.

There have been similar rifts in the UK. In duelling letters to the *Times* and the *Financial Times*, professors from the LSE and other universities were divided on whether immediate action was required to reduce fiscal deficits or whether fiscal consolidation would deepen the UK's recession.

The main cause of these differences is the limited and often conflicting evidence on the effects of fiscal policy on economic activity. One of the biggest hurdles to obtaining precise and consistent estimates of fiscal multipliers has been data availability. Most studies have relied on evidence from a small number of countries, typically the United States. Existing evidence also shows very different effects across time and countries.

For example, in a 2004 study, Roberto Perotti estimated that the multiplier on government expenditures might range from as low as minus 2.3 to as high as 3.7, depending on the country and time period studied. Even within countries he found enormous variance. For the UK, for example, he found that the government expenditure multiplier declined from 0.1 in 1960-79 to minus 1.2 in 1980-2001.

To address the shortcomings of existing evidence, we have collected a quarterly dataset for 44 countries (20 high-income countries and 24 developing countries). These data have recently become available thanks to improvements in the data collection capacity of statistical agencies in a number of developing countries, and the adoption of a common statistical standard for collecting fiscal data in the European Union.

Using this new dataset, we are able to estimate the effects of government purchases on GDP with a number of observations ten times larger than earlier studies. And by grouping countries with similar characteristics together, we can derive estimates of the fiscal multiplier that are significantly more accurate than in studies that use data from a single country.

Moreover, this is the first study of the impact of fiscal policy using high-frequency data for a broad sample of developing countries. With data covering countries at different stages of economic development and differing in other characteristics, we are able to determine not only *whether* fiscal policy is likely to be effective as a countercyclical stabilisation tool, but also *where* and *when*.

Expansionary government spending has a smaller and less persistent effect on output in developing countries than in high-income countries

Given the novelty of studying the effects of fiscal policy at business cycle frequency in developing countries, the natural first question is whether fiscal policy has similar effects in developing and high-income countries. Striking differences emerge.

In high-income countries, an increase in government consumption equivalent to 1% of GDP causes an immediate increase in GDP of four tenths of 1%, implying a fiscal multiplier of 0.4. This implies a significant degree of 'crowding out' of private economic activity by fiscal expansions. In other words, government economic activity is to some extent discouraging private sector efforts to do the same thing.

But government purchases do not fully crowd out the private sector. In the long run – accounting for the cumulative impact of government purchases on GDP until their effects die out – our estimate of the multiplier increases to 0.8. This still implies some crowding out – and it reaffirms the conjecture (often associated with Milton Friedman) that fiscal policy is unlikely to have a stimulative effect except after significant delay.

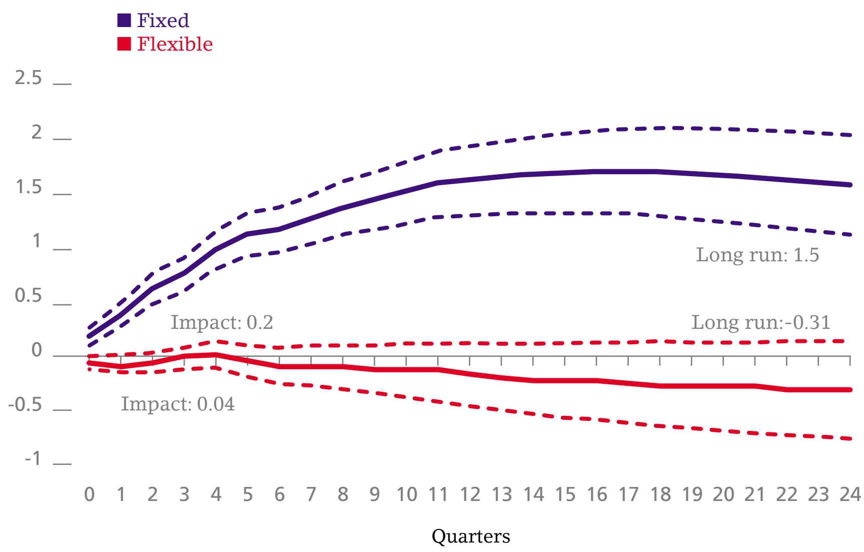
The results in developing countries are very different. The fiscal multiplier is minus 0.2, meaning that fiscal stimulus *more than fully* crowds out private activity, and GDP will tend to *decline* in response to an increase in government spending. Thus expansions in government consumption have a negative impact on GDP in developing countries.

But another striking difference between high-income countries and developing countries is in fiscal policies themselves. While increases in government spending are persistent in high-income countries, with expenditures remaining above trend for as long as six years, these increases are very short-lived in developing countries, frequently followed by reversals (with expenditures declining to below trend) after one to two years.

The textbook macroeconomic model for economies open to trade in goods and capital (the Mundell-Fleming model) predicts that fiscal policy has very different effects depending on a country's monetary arrangements. While we would expect increases in government expenditures to cause substantial increases in GDP where the monetary authority pegs the value of its currency (a fixed exchange rate regime), their effects should be much smaller in countries with flexible exchange arrangements. Surprisingly, little evidence in support of this theory has been reported to date.

Figure 1:
Cumulative multiplier: fixed and flexible exchange rate regimes

Solid lines show estimates of the cumulative fiscal multiplier at a given time horizon. Dotted lines represent 90% confidence intervals.



With data covering countries under both monetary regimes, and even countries that have changed their monetary arrangements over time, we provide strong evidence in favour of the importance of the exchange rate regime for the fiscal multiplier. As Figure 1 shows, the long-run fiscal multiplier is large (approximately 1.5) in countries with fixed exchange rates; in contrast, in countries with flexible exchange arrangements, the long-run multiplier is essentially zero.

We find a similar result when contrasting countries for which trade comprises only a small part of economic activity (where we find long-run fiscal multipliers of 1.4) and those highly exposed to international trade (with multipliers of approximately zero).

This may help to explain the significant differences in the effects of fiscal policy across countries and time periods found in earlier studies. For example, the significant decline in the expansionary power of government purchases in the UK may be explained by the fact that the pound was pegged to the US dollar until the early 1970s, but allowed to float freely thereafter. Moreover, international trade has played an increasing role in the UK's

The interaction between fiscal and monetary policy is a crucial determinant of the effects of fiscal stimulus on GDP

economic activity, with the ratio of trade to GDP almost doubling since 1960.

What explains these significant differences across monetary arrangements? According to the Mundell-Fleming model, in countries with flexible exchange rates, fiscal stimulus causes an exchange rate appreciation, which neutralises some of the stimulative effect by leading to lower exports and higher imports. But we find little evidence for this phenomenon.

In contrast – but still consistent with the textbook model – we find significant differences in the responses of central banks to fiscal stimulus, based on the monetary regime. Central banks devoted to maintaining a stable exchange rate tend to lower interest rates (by an average of 125 basis points) in response to increases (of 1% of GDP) in government consumption during the two years following a fiscal stimulus. This reinforces the fiscal stimulus and allows for the large multipliers we estimate for countries with this monetary regime.

Conversely, central banks with other aims (such as an inflation target) increase interest rates (by an average of 60 basis points). They do so presumably to counteract the inflationary pressures caused by the fiscal expansion. This offsets the stimulative impact of fiscal policy and leads to the negligible effects of fiscal stimulus for countries with this monetary regime.

These results have important implications for policy-makers. The interaction between fiscal and monetary policy is a crucial determinant of the effects of fiscal stimulus. For example, it is vital to consider the reaction of the Bank of England in assessing the potential economic fallout from the UK government's current austerity measures.

Should the Bank respond as inflation-targeting central banks typically do, it will attempt to contain the economic costs of fiscal austerity through loose monetary policy. On the other hand, with the current Bank Rate at 0.5%, and the unconventional programme of asset purchases by the central bank already standing at £200 billion, it is unclear whether the Bank has the means to react to fiscal austerity as it typically would. Moreover, if inflation concerns force the Bank to begin unwinding its loose monetary policy, a coordinated fiscal-monetary contraction could cause significant economic pain.

The results of our study will certainly not end the fiscal debate in the UK nor elsewhere. Rather, they point to a broader conclusion: that the size of the fiscal multiplier critically depends on key characteristics of the economy. When considering large shifts in fiscal policy – be it fiscal stimulus or fiscal austerity – it is essential to look at the broader economic environment confronting the government. Drawing sweeping generalisations about the impact of fiscal policy is probably an exercise in futility.

This article summarises 'How Big (Small?) are Fiscal Multipliers?' by Ethan Ilzetzki, Enrique Mendoza and Carlos Végh, a forthcoming CEP Discussion Paper.

Ethan Ilzetzki is a lecturer in LSE's economics department and a researcher in CEP's macroeconomics programme. **Enrique Mendoza** and **Carlos Végh** are at the University of Maryland.

Further reading

Robert Barro, 'Government Spending is No Free Lunch,' *Wall Street Journal*, 22 January 2009.

Roberto Perotti, 'Estimating the Effects of Fiscal Policy in OECD Countries', mimeo, Bocconi University, 2004.

Christina Romer and Jared Bernstein, 'The Job Impact of the American Recovery and Reinvestment Plan', Council of Economic Advisers, January 2009.

If inflation concerns lead to a rise in UK interest rates, a coordinated fiscal-monetary contraction could cause significant economic pain in brief...

'Revolving door' lobbyists

To what extent can former government officials 'cash in' on the personal connections acquired during their periods of public service? Research by **Jordi Blanes i Vidal, Mirko Draca** and **Christian Fons-Rosen** provides the first quantitative evidence of how former congressional staffers benefit from Washington's 'revolving door'.

Lobbyists – professional paid advocates who aim to influence the decisions of legislators or government officials – play an increasingly important role in the political system of the United States and other democracies. In 2008, for example, $3.97 billion was spent on lobbying US federal officials – more than twice the amount spent ten years earlier. And recent debates on healthcare and financial reform have been marked by sharp criticisms of the role of staffers-turned-lobbyists in watering down the bills.

The movement of political staffers from roles in the government to lucrative jobs in the lobbying industry is often described as a 'revolving door'. The flow of money and staffers towards Washington's lobbying firms has led to concerns that corporations and other organisations are able to buy influence and acquire privileged access to important politicians. Furthermore, ex-staffers gain private benefits in such transactions, and this may have a negative impact on policy outcomes.

The most common criticism of former staffers is that they are simply trading on their political connections. But lobbyists who used to work in government dispute the notion that their new roles allow them to 'cash in' on their connections. They claim that their earnings reflect expertise on policy issues and the inner workings of government in general. In other words, they argue, it is 'what you know' not 'who you know' that matters.

Empirically, the issue of separating the 'what you know' from the 'who you know' is a challenge for researchers. A plausible argument can be made that former staffers would be high earners in many different contexts where political connections do not matter. The specific problem here is separating the effects of ability on earnings from those of acquired political connections. Generally, earnings or revenue data only allow us to observe the effects of both factors together.

Our research addresses this challenge by looking at the impact of a serving politician's exit on the lobbying revenues of his or her former staffers. The point at which a politician leaves office provides a window for examining the specific role of political connections. If a politician is no longer serving in Congress, then

When a US senator or representative leaves office, the earnings of a lobbyist that used to work for them falls on average by one fifth the political connection held by their former staffers is in effect obsolete.

This is because the politician in question no longer has direct influence over legislative outcomes or the content of congressional debates. In turn, this means that in cases where gaining access is a goal of special interest groups, lobbying spending will move away from lobbyists affiliated with exiting politicians and towards those with still current connections.

Our estimates based on this 'identification strategy' indicate that the value of political connections to lobbyists is high. Lobbyists suffer a revenue loss of over 20% when their former political employer leaves Congress. In dollar terms, this translates into $177,000 per year for the typical lobbyist's practice. Furthermore, this effect is persistent for at least three years – it seems that it is difficult for lobbyists to offset the impact of a lost political connection.

The size of the revenue effects also increases with the strategic importance of a politician. Senators are more valuable than representatives and, even within the two chambers of Congress, more senior politicians – defined in terms of either tenure or committee status – are more valuable than their junior counterparts.

Our study points the way to a potential new wave of research using data released under public disclosure laws. The basic data we use were made available as part of the Lobbying Disclosure Act of 1995. Since then, non-partisan organisations like the Center for Responsive Politics and LegiStorm have done important work improving access and promoting usage of the data.

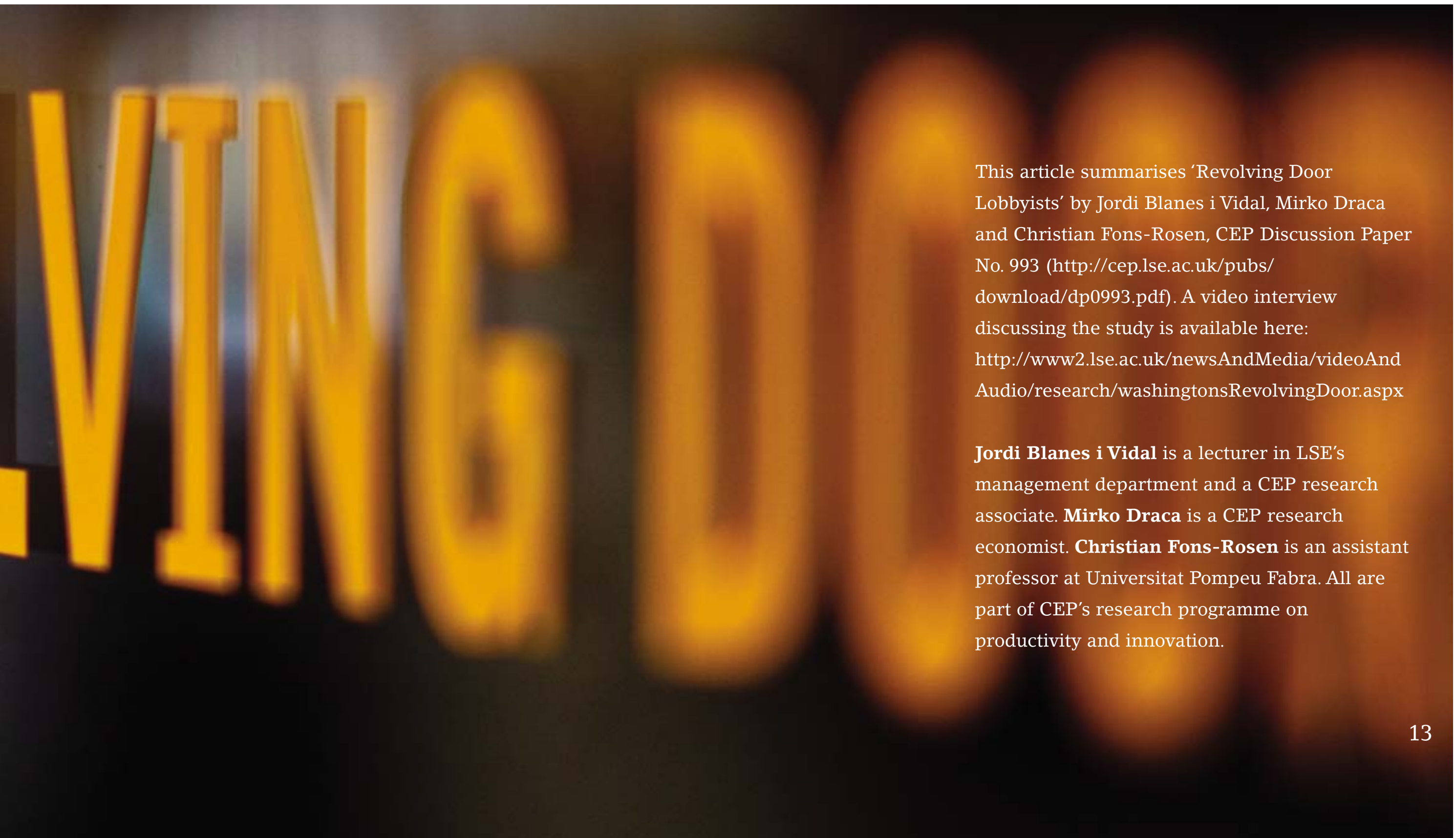
The standard claim of lobbyists – that it is 'what you know' not 'who you know' that matters – does not stand up to formal scrutiny

Researchers now have the possibility of combining datasets across a number of sources to search for statistical patterns such as those we find for politically connected lobbyists. As a result, this takes public scrutiny to a new level. We can try to find important information and behaviours 'hidden' in the data. Hence, one major consequence of laws such as the 1995 Act is that they make independent research and evaluation of political questions possible.

Though our focus is on Washington, this study is relevant for policy-makers and regulators in Britain. In particular it must be noted that our research would not be possible here. The government simply does not demand the registration and reporting of lobbying activity in the same way as in the United States.

This has allowed lobbying in Britain to take place in the form of a shadow economy, as demonstrated by the case of former Labour cabinet minister Stephen Byers, who was secretly recorded offering himself to potential employers outside government as 'a sort of cab for hire' for up to £5,000 a day.

Recently, there have been signs of change in Britain. The coalition government has pledged to reform current practices. But this ambition should be treated with some scepticism. There are a lot of vested interests intent on keeping lobbying activity unreported, and so the 'new politics' could well end up being a lot like the old politics.



This article summarises 'Revolving Door Lobbyists' by Jordi Blanes i Vidal, Mirko Draca and Christian Fons-Rosen, CEP Discussion Paper No. 993 (http://cep.lse.ac.uk/pubs/download/dp0993.pdf). A video interview discussing the study is available here: http://www2.lse.ac.uk/newsAndMedia/videoAndAudio/research/washingtonsRevolvingDoor.aspx

Jordi Blanes i Vidal is a lecturer in LSE's management department and a CEP research associate. **Mirko Draca** is a CEP research economist. **Christian Fons-Rosen** is an assistant professor at Universitat Pompeu Fabra. All are part of CEP's research programme on productivity and innovation.

Image: Tim Radville www.flickr.com/photos/radville/

In the first of a new series of *CentrePiece* articles analysing policy innovations by the coalition government, **Zack Cooper** assesses the plans for healthcare reform in the light of recent CEP research.

The NHS White Paper: evolution or revolution?

For those who favour introducing more competition into healthcare, there is quite a bit to like in the NHS White Paper published in July 2010. Health secretary Andrew Lansley's first major policy statement encourages public and private healthcare providers to compete for care; expands patient choice; and places a tremendous premium on publishing transparent information on a number of dimensions of clinical performance (DH, 2010).

These elements of the reforms are crucial for the health service. Ultimately, increasing competition in the NHS is vital to improving quality and efficiency – just as it is in other sectors of the economy. Recent CEP research illustrates that market-based reforms to the NHS in the mid-2000s, which focused on promoting patient choice and hospital competition, saved lives (Cooper et al, 2010a), improved efficiency (Cooper et al, 2010b) and boosted management quality (Bloom et al, 2010).

It is also encouraging that the White Paper calls for allowing flexible pay across the country. Giving hospitals the ability to set wages will allow them to hire the kind of staff they want and need to run their organisations efficiently. Adding pay flexibility should also go a long way towards reducing the staggering variation in mortality across the country. Indeed, widely reported CEP work shows that current pay regulation, which keeps the earnings of medical professionals largely the same wherever they work, has contributed to higher death rates by depressing real wage rates in high cost

areas (Propper and Van Reenen, 2010).

These aspects of the reforms constitute a sensible extension of the successful market-based reforms instituted by the previous Labour government. But the problem is that there are other elements in the reforms that are in tension with this evolution and which break Andrew Lansley's election campaign pledge to avoid sweeping top-down shake-ups of the health service.

In the White Paper, the health secretary proposes a radical shake-up of how care gets commissioned in England. Broadly, he is proposing to shift the commissioning process from primary care trusts (PCTs) to general practitioners (GPs) and in doing so, he is placing an extraordinary amount of power in the hands of clinicians. GPs in England are clearly very capable, but it is not clear that they want to be the principal commissioners of care, that they necessarily have the specific skills to commission services effectively and, perhaps most importantly, that they support the government's broader healthcare reform agenda.

Commissioning care has been a perennial bedbug for the NHS for the last 20 years. Since the purchaser/provider split was introduced in the 1990s, a range of organisations have been tasked with purchasing care on patients' behalf and organising care locally for patients. To date, none of the commissioning bodies have thrived. A damning recent report from the House of Commons highlights concerns that PCTs have been far too passive, have failed to prompt hospitals to improve the quality and efficiency and have not been active enough coordinating highly specialised services for organ transplantation and cancer care (Health Select Committee, 2010). These failures have raised transaction costs in the NHS, allowed hospitals to operate virtually unchecked and hindered efforts to improve care for complex conditions.

There are a number of root causes of these failures. Generally, according to the Health Select Committee, the staff at PCTs are often under-skilled, lack clinical knowledge and have not used data adequately to improve the commissioning process. In part, this is because PCTs have had almost no monetary incentives to improve. Over the last decade, PCTs have seen their budgets grow annually, regardless of their performance.

Under the White Paper proposals, GPs are to be given the ability to commission nearly every aspect of care for NHS patients and they will be collectively responsible for almost the whole of the NHS budget. While there is some reason to believe that this sort of power will increase care in the community (which is vital to reining in NHS spending), the proposals are worrying because having good clinical skills does not necessarily guarantee that GPs will be effective commissioners.

NHS reforms in the mid-2000s helped to increase competition, which saved lives, improved efficiency and boosted management quality

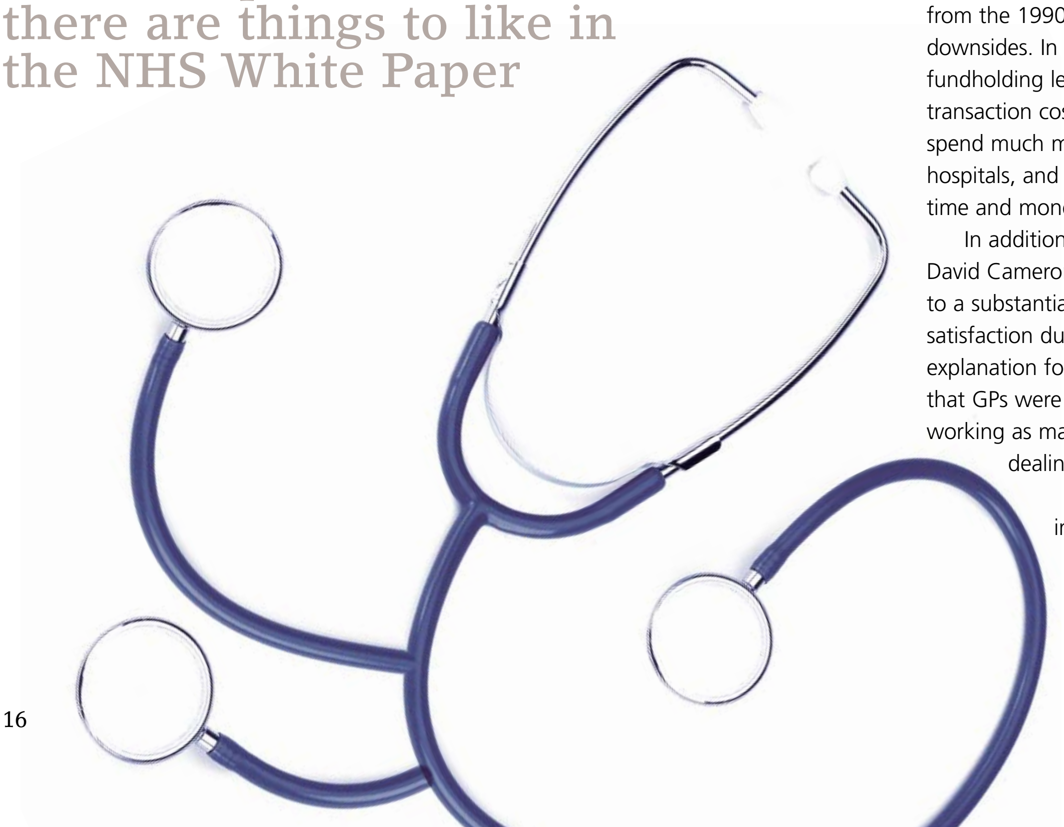
There is some precedent for giving GPs more purchasing power. The previous Conservative government did just that in the 1990s with some positive results. Published evidence examining the GP fundholding policy suggests that it reduced pharmaceutical use, lowered elective referral rates and allowed GPs to make some savings by lowering the demand for clinical services. This kind of check on demand and built-in incentive to provide care locally is badly needed in the NHS right now.

But the GP fundholding programme from the 1990s also had very tangible downsides. In the long term, GP fundholding led to higher managerial and transaction costs because GPs had to spend much more time negotiating with hospitals, and hospitals had to spend more time and money negotiating with them.

In addition, what should also worry David Cameron is that GP fundholding led to a substantial *drop* in measured patient satisfaction during the 1990s. One explanation for this unhappiness is that GPs were spending more time working as managers and less time dealing with patients.

So what are the implications of giving GPs expansive commissioning power more than a decade after GP fundholding was abolished?

For those who favour introducing more competition into healthcare, there are things to like in the NHS White Paper



On the positive side, there is some reason to believe that the transaction costs will be less dramatic than they were 15 years ago. Right now, hospitals cannot alter their reimbursement rates, so the negotiations between GPs and hospitals will be vastly simpler than they were in the 1990s. This time around, in addition to their clinical responsibilities, GPs will spend the bulk of their time purchasing care and planning care pathways, rather than negotiating rates with hospitals.

In addition, the White Paper allows patients to choose who will commission their care. This will create incentives for the GP consortiums to become more efficient if they face a real risk that poor performance will reduce their market share.

Unfortunately, on balance, these reforms seem to be a knee-jerk response to the very real shortcomings of PCTs. The White Paper places unprecedented power in the hands of GPs, with little evidence about whether they are interested in taking on this new role or if they are going to be better equipped to commission than PCTs. To be sure, involving clinicians in the management of the health service is important, but medical knowledge is not wholly akin to the managerial skills that are vital to effective commissioning. We just do not know whether or not GPs will be more or less capable commissioners than PCTs.

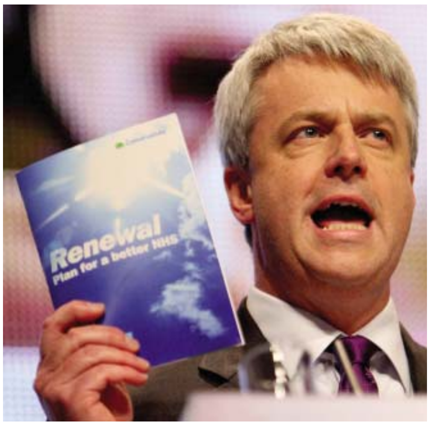
There is plenty of evidence that there are some very entrepreneurial GPs who will thrive at commissioning. But what will happen to the commissioning process for patients registered with GPs who either have no inclination or capacity to purchase services? That problem could prove calamitous.

Another significant problem with giving GPs fundholding power is that it is not clear that they support the government's ambition to increase choice and competition in the NHS. For example, recent work by the King's Fund finds that while over three quarters of patients were extremely keen to have choice, GPs do not regard choice as imperative for patients (Dixon et al, 2010). What is more, GPs are reluctant to offer patients their private sector options for care and, in some cases, they are reluctant to offer patients any choice whatsoever when specialist treatment is required.

It is possible therefore that these reforms will put GPs in a position to throw the government's overall policy agenda off course. In fact, Hamish Meldrum, chairman of the Council of the British Medical Association, has explicitly said that GPs should take over commissioning not to increase competition but so that their monopoly power over the process can blunt the government's push for it.

In sum, there are things to like in the White Paper and it is encouraging that the coalition government is actively promoting choice and competition in the NHS. But with so many unknowns, the wholesale transfer of purchasing power to GPs is too much, too fast.

In the long term, giving GPs purchasing power might very well work, but it needs to be trialled, tested and piloted. This is a general rule for policies across all areas of government. At the moment, when funds are tight, this big a shift of purchasing power to an untested system is an extraordinary gamble given that we know that large-scale shake-ups typically cost substantial amounts of money – something that will be in short supply over the next few years.



The wholesale transfer of purchasing power to GPs is too much, too fast – it threatens to increase spending dramatically, not reduce it

Zack Cooper is a health economist at LSE Health and CEP.

Further reading

Nick Bloom, Carol Propper, Stephan Seiler and John Van Reenen (2010) 'The Impact of Competition on Management Quality: Evidence from Public Hospitals', CEP Discussion Paper No. 983 (http://cep.lse.ac.uk/pubs/download/dp0983.pdf).

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Anna Dixon, Ruth Robertson, John Appleby, Peter Burge, Nancy Devlin and Helen Magee (2010) *Patient Choice: How Patients Choose and How Providers Respond*, King's Fund (http://www.kingsfund.org.uk/publications/patient_choice.html).

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Carol Propper and John Van Reenen (2010) 'Can Pay Regulation Kill? Panel Data Evidence on the Effect of Labour Markets on Hospital Performance', *Journal of Political Economy* (earlier version available as CEP Discussion Paper No. 843 (http://cep.lse.ac.uk/pubs/download/dp0843.pdf).

in brief...

The state of apprenticeships

Numbers and completion rates of apprenticeships in England are at an all-time high. Yet according to a report by **Hilary Steedman**, the country's apprenticeship provision still lags behind those elsewhere in the world.

There are no headlines in the quality press. But this year, as every year, thousands of young people will not get the apprenticeship place they desperately seek. The demand for apprenticeship is outstripping places everywhere in the world. But in England, the situation is worse than in many other countries with a significantly lower proportion of apprentices in the labour force: just 11 for every 1,000 employees compared with 39 in Australia, 40 in Germany and 43 in Switzerland.

Young people know that, like a degree, apprenticeship pays in better employment prospects and higher lifetime earnings. Why then do at least a quarter of all businesses abroad offer apprenticeships but fewer than one in ten in England? And why in Germany do almost all very large firms (those with over 500 employees) take on apprentices but under a third in England?

Some of the answers can be found in our report comparing apprenticeship in eight countries – Australia, Austria, England, France, Germany, Ireland, Sweden and Switzerland. One reason for more apprenticeships abroad is that generous subsidies are available to employers who expand the number of places available. Employers in England receive no subsidies and pay higher wages to their apprentices than their counterparts abroad.

Training is also shorter in England and with less time off-the-job. Lower wages and longer apprenticeships allow employers abroad to provide more training and cover more of their training costs. In addition, employers in England face greater handicaps than their counterparts abroad:

- England still comes out badly in international comparisons of basic skills (mathematics), far outstripped by Australia and Switzerland.
- Unlike in other countries, there is no route through apprenticeship to higher education.
- Careers education in schools is woefully inadequate despite excellent models available elsewhere. Schools are often hostile to work-based learning and provide little or no assistance.
- Occupational standards are too inflexible and standard setting is too remote from employers' needs.

Employers need to claim back from government the responsibilities and trust that would enable them to provide more apprenticeships

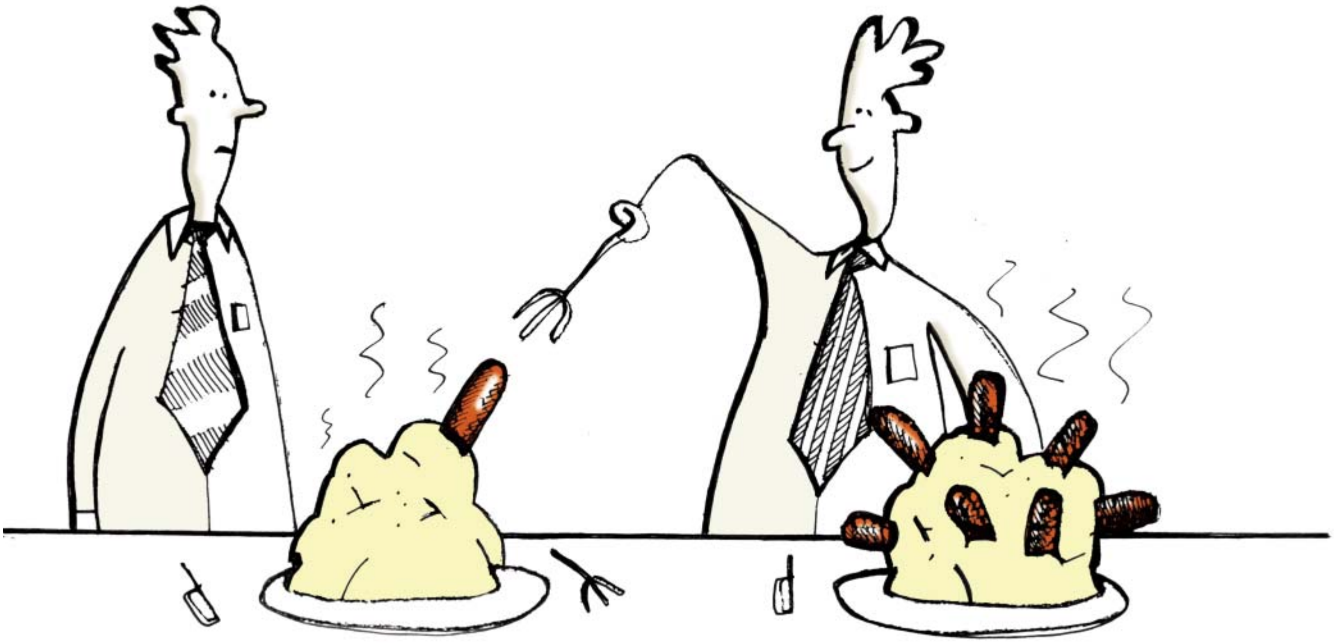
These problems and the shortfall in places persist in part because of differences in the management of apprenticeships in England. In Austria, France, Germany and Switzerland, employers are in charge of standards and, unlike most English employers, recruit and train their own apprentices. Employer organisations also take responsibility for much of the necessary infrastructure of support.

In England, the Apprenticeship Ambassadors Network has worked hard to make the business case for apprenticeship, but 'ownership' by employers remains elusive. Employers here need to claim back from government the responsibilities and trust that would enable them to provide the apprenticeships that we need.

This article summarises *The State of Apprenticeship in 2010 – International Comparisons: Australia, Austria, England, France, Germany, Ireland, Sweden, Switzerland* by Hilary Steedman, jointly published by CEP and the Apprenticeship Ambassadors Network. The report is available for download here: http://cep.lse.ac.uk/pubs/download/special/cepsp22.pdf

Hilary Steedman is a Senior Research Fellow at CEP.
The Apprenticeship Ambassadors Network is a group of senior business leaders committed to the expansion and development of apprenticeships (http://www.employersforapprentices.gov.uk/).

In the second of our series on policies of the coalition government, **Stephen Machin** and **James Vernoit** compare academy schools created by Labour with the new 'coalition academies', those that have either opened this autumn or applied for academy status since the election.



Academy schools: who benefits?

The gradual introduction of academy schools into England's educational system has been a controversial policy innovation. Supporters passionately believe that academies can make a real difference to pupils' educational outcomes, while critics claim that they are just a way of privatising the state education system by stealth. But who is right – and what impact will the coalition government have on academy school policy?

Academies are independent, non-selective, state-funded schools that fall outside the control of local authorities, and are managed by a private team of independent co-sponsors. The sponsors then delegate the management of the school to a largely self-appointed board of governors.

An academy usually has around 13 governors, with seven typically appointed by the sponsor. Each governing body is responsible for employing staff, agreeing pay and conditions of service with its employees and deciding on the school's policies on staffing structure, career development, discipline and performance management.

The first clutch of academies was opened in September 2002 by the Labour government with the clear policy aim of improving educational outcomes in deprived areas. Poorly performing schools were awarded academy status by taking over or replacing schools that were either in special measures or seen as under-achieving. The hope was that the combination of independence to pursue innovative school policies and curricula, with the experience of the sponsor, would enable academies to drive up the educational attainment of their pupils.

The performance of academy schools

Our research seeks to evaluate the performance of academy schools by comparing them with a selected group of schools that are due to become academies in the future but have yet to make the transition to academy status. The latter group consists of schools that are very similar in their pre-academy characteristics to the pre-academy characteristics of the schools that have already become academies.

We believe that, with careful statistical analysis, these 'future academies' can provide a counterfactual, allowing us to see what would have happened to the current academies had they not become academies. A comparison of the performance of the current academy schools, both before and after they became academies, with the future academies over the same time period, enables us to identify the impact of academy status on the performance of the school.

Our preliminary results show that academies that have been open for at least two years have been able to generate a significant improvement in their GCSE performance compared with the future academies. We find that an extra 3% of pupils in the academies are achieving at least five or more grades A*-C at GCSE/GNVQ compared with the schools that have not yet become academies.

For the academy schools that have been open for a shorter time than two years, we do not find any significant improvement in GCSE performance. This may explain why an earlier study (Machin and Wilson, 2009) was unable to find any positive effects of academy status on pupil achievement.

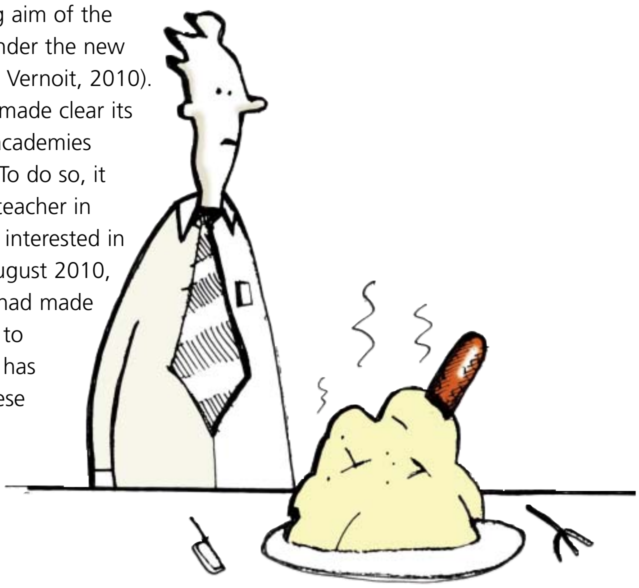
Overall, these results suggest that academy schools can deliver faster gains in GCSE performance than comparable schools. Given the preliminary nature of these findings, we are reluctant to draw too strong a conclusion. But it does seem that converting to academy status – at least under the Labour government's model of converting disadvantaged schools to academies – may actually deliver significant improvements in GSCE performance. At the same time, we need to be patient for any performance enhancing 'academy effect' to emerge.

The impact of the coalition government on academy school policy

The education policies of the coalition government have reawakened controversy about academies. This seems to stem largely from the changing aim of the academies programme under the new government (Machin and Vernoit, 2010).

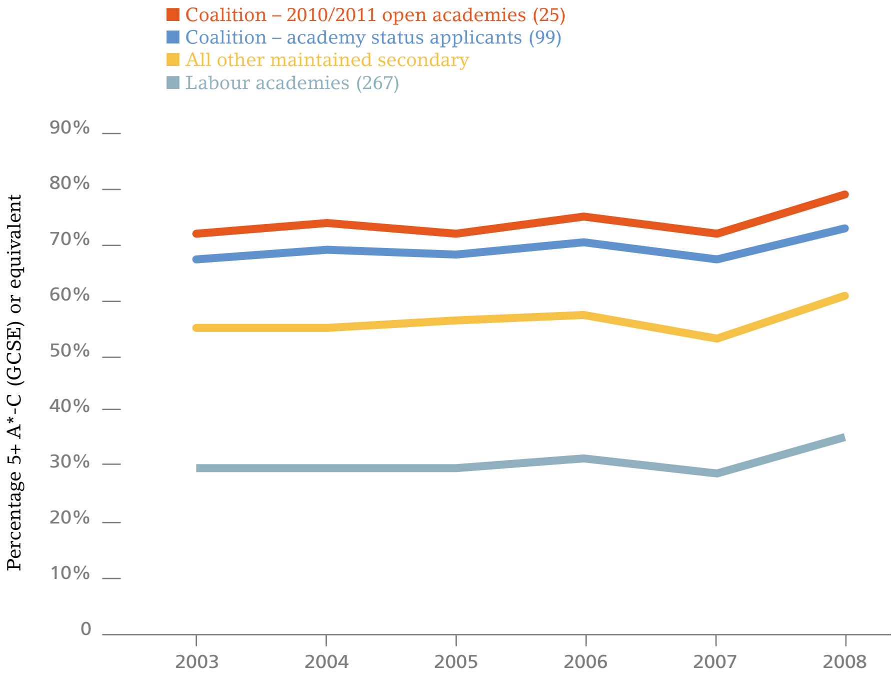
The government has made clear its intention to expand the academies programme significantly. To do so, it initially asked every headteacher in England if they would be interested in academy status. By 31 August 2010, 170 mainstream schools had made an application to convert to academy status. Progress has been rapid, and 31 of these schools have had their application accepted and started operating as academy schools in September 2010.

Figures 1 and 2 compare the characteristics of secondary schools that were approved to open as academies under the Labour government with those that have been approved by the new government. Also shown are the characteristics of schools that have applied to the new government for academy status and all state secondary schools.



'Coalition academies' are significantly more advantaged than the average secondary school – and even more so compared with Labour academies

Figure 1:
Percentage of year 11 pupils gaining 5+ A*-C (GCSE) or equivalent



Notes: Number of academies in September 2010. The Labour academies opened in the following academic years: 02/03 – 3 opened, 03/04 – 9 opened, 04/05 – 5 opened, 05/06 – 10 opened, 06/07 – 19 opened, 07/08 – 37 opened, 08/09 – 47 opened, 09/10 – 73 opened, 10/11 – 64 opened.

Figure 1 shows the academic performance of the different groups of schools, as measured by the proportion of children achieving five or more A*-C GCSE passes. Figure 2 shows an indicator of deprivation in the different groups of schools, the proportion of pupils who are eligible for free school meals.

It is clear from this evidence that the academies that opened in September 2010 – and the schools that have applied to the coalition government to become academies in due course – are significantly more advantaged than the average secondary school. They are even more advantaged compared with those schools that were approved to open as academies under Labour.

The 'coalition academies' contain far lower proportions of pupils who are eligible for free school meals, and they are considerably better performing schools in terms of GCSE results.

Summary

Following the change of government, there has been a U-turn in academy schools policy. Under the Labour government, the programme was aimed at combating disadvantage, and we find evidence that it may actually have achieved this objective in schools that have had academy status for a long enough period.

Under the coalition government, the academies programme is now likely to reinforce advantage and exacerbate existing inequalities in schooling. At a time of budget restraint, it seems natural to question whether the large expenditure involved in converting these advantaged schools to academies is justified.

Stephen Machin is a professor of economics at University College London and CEP's research director. **James Vernoit** is a researcher in CEP's education and skills programme.

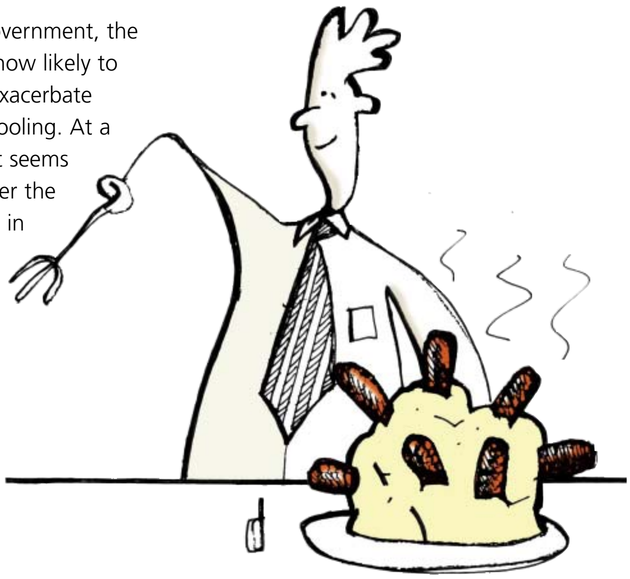
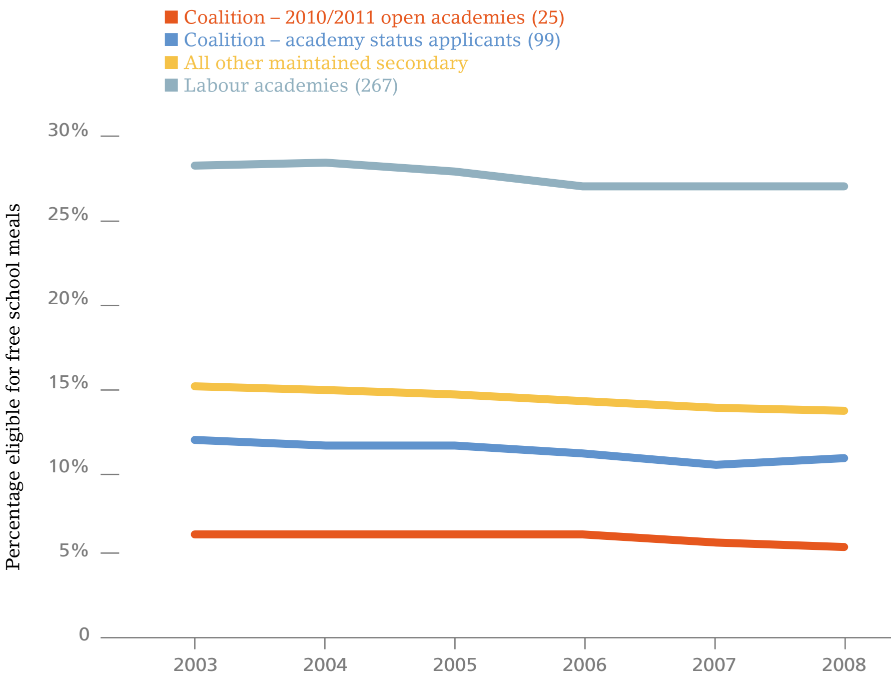


Figure 2:
Percentage of secondary school pupils who are eligible for free school meals



Further reading

Stephen Machin and James Vernoit (2010) 'A Note on Academy School Policy', CEP Policy Analysis (http://cep.lse.ac.uk/pubs/download/pa011.pdf).

Stephen Machin and Joan Wilson (2009) 'Public and Private Schooling Initiatives in England', in Rajashri Chakrabarti and Paul Peterson (eds) *School Choice International: Exploring Public-Private Partnerships*, MIT Press.

Under Labour, academy school policy was aimed at combating disadvantage; under the coalition, it is likely to reinforce advantage

Over the last 30 years, inequality has risen as new technologies have massively increased the demand for highly skilled workers. But as research by **Guy Michaels** and colleagues shows, it is not simply a case of the more educated benefiting at the expense of the less educated; rather, it is the middle-skilled who are losing out most.

The shrinking middle: how new technologies are polarising the labour market

In the UK today, the richest tenth of male earners receive almost four times as much as the poorest tenth; 30 years ago they only earned twice as much. A good chunk of this increase in wage inequality is due to higher returns to education (see Figure 1). Because this has been accompanied by a massive increase in the proportion of the university educated, the inescapable conclusion is that the demand for more highly skilled workers has risen.

This holds true across the developed world. The academic consensus is that this increase in skill demand is linked to technological progress, driving up the demand for workers who are able to deal with a more complex and challenging workplace.

New facts on inequality have recently emerged. In the United States, 'upper half' inequality – the difference between the richest tenth of the population and the middle – has risen continuously over the last three decades. But after increasing during the 1980s, 'lower half' inequality – the difference between the middle and the poorest tenth – has actually fallen since then (see Figure 2).

And while college graduates' wages have continued to increase relative to those of non-graduates, high school graduates' wages (the wages of those who leave school at age 18) have ceased to increase relative to those of high-school dropouts (those who leave at age 16) since the 1990s. It also seems that jobs in middle-skilled occupations have decreased relative to both high-skilled and low-skilled occupations across Europe and North America (see Figure 3).

Information technologies replace mid-level jobs: look at the cleaning robots

What could account for this 'polarisation', in which the prospects of the middle-skilled have been declining? One clue is to be found by looking at robot competitions in Japan. Every year in Tokyo, the 'Robo-One' competition rewards the robot that is best at doing tasks such as cleaning, playing football, dancing and punching other robots (really hard). What is

Technology has raised the demand for college-educated workers and reduced the relative demand for middle-skilled workers

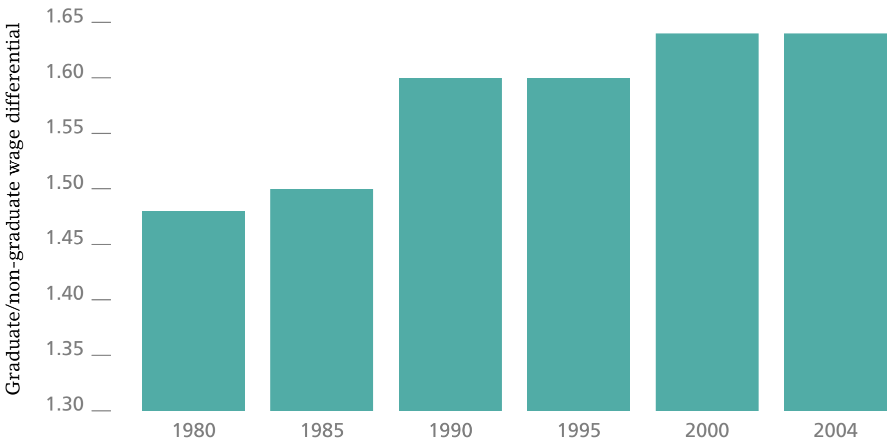
remarkable about this competition is not so much the sophistication of Japanese technology, but how bad these robots are at doing things that humans find very easy.

This suggests that what new technologies – such as information and communication technologies (ICT) – are very good at doing is replacing repetitive, boring, 'routine' tasks (Autor et al, 2003; Goos and Manning, 2007). Tasks that require responding rapidly to unfamiliar situations (such as driving or cleaning) are not easy for robots to reproduce. Repetitive activities that were traditionally performed by less educated workers, such as assembly workers in a car factory, have been good candidates for job destruction by new technology.

But it isn't only this group that has been affected. ICT has also reduced the need for middle-educated workers carrying out routine tasks. Bank clerks, for example, have found demand for their services plummeting as a result of computerisation – ATMs, online banking and the like.

Figure 1:

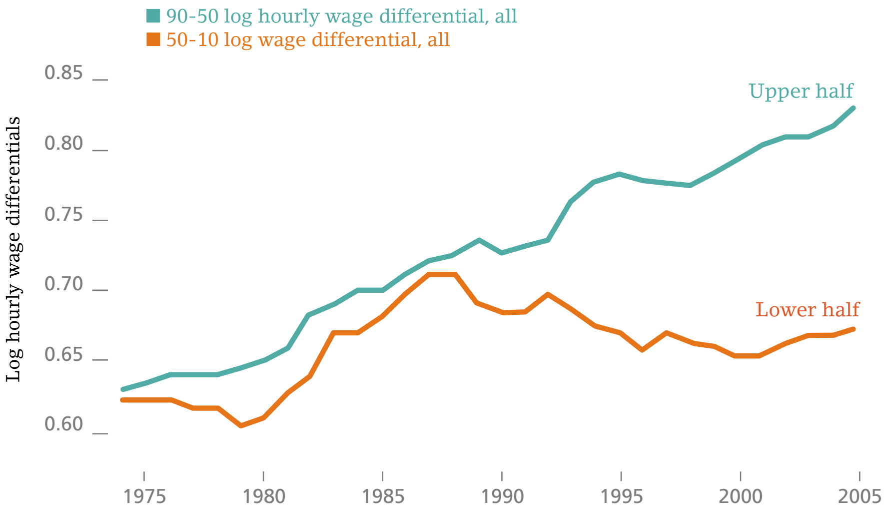
Increasing returns to higher education: the wage ratio between all UK workers with a college degree and all UK workers without a college degree, 1980-2004



Source: Machin and Van Reenen (2010), General Household Survey and Labour Force Survey.

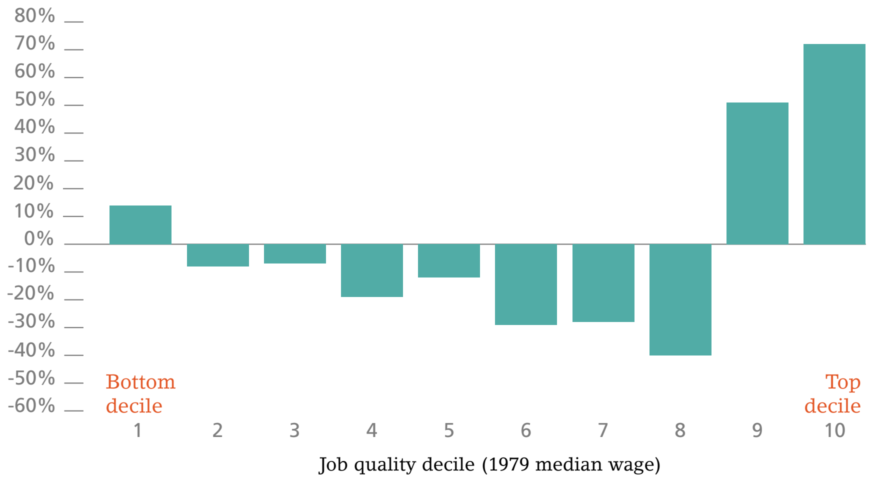
Figure 2:

The divergence of upper half and lower half inequality in the United States, 1975-2005



Source: Goldin and Katz (2008).

Figure 3:
Lovely and lousy jobs: employment share growth 1979-2008 by job quality (occupational wage), UK



Source: Mieske (2009), updates Goos and Manning (2007), percentage changes for entire period.

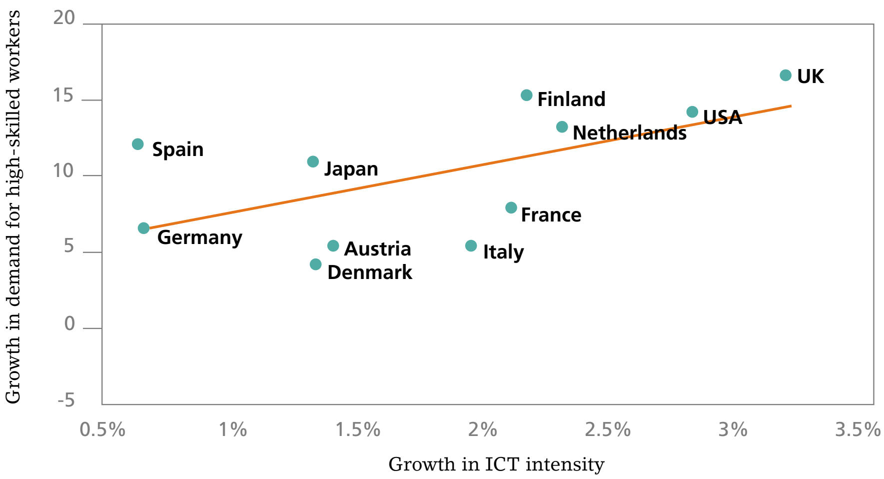
More educated workers making analytical, non-routine use of ICT – such as management consultants, advertising executives and physicians – have found their jobs made easier by ICT rather than threatened by it. Nor has ICT reduced the demand for less educated workers carrying out non-routine manual tasks – such as janitors and cab drivers – contrary to claims that low-skilled jobs are disappearing (see Figure 4).

Since the number of routine jobs in the traditional manufacturing sectors (such as car assembly) declined substantially in the 1970s, the subsequent growth of computerisation may have primarily increased demand for highly educated workers at the expense of those in the middle of the educational distribution, leaving the least educated (mainly working in non-routine manual jobs) largely unaffected.

Figure 4:
A taxonomy of tasks

Task type		Task description	Example of occupations	Education levels	Effect of ICT	Change in demand
Routine	Manual	Rules based repetitive procedural	Assembly line workers	Low	Direct substitution	Down ▿
	Non-manual		Clerical, Book-keepers	Middle	Direct substitution	Down ▿
Non-routine	Non-manual	Abstract problem solving (analytic) mental flexibility	Managers, doctors lawyers, scientists	High	Strongly complementary	Up ▵
	Manual	Environmental adaptability Interpersonal adaptability	Maids, janitors security guards waiters, drivers	Low	Broadly neutral	Zero

Figure 5:
In countries where technology grew fastest, so did the share of the most highly skilled



Note: The figure plots the growth of ICT/VA (the ratio of information and communication technology to value added) against the growth of the highest skill group (the share of the wage bill going to those with college education). This is done across the entire economy of 11 OECD countries between 1980-2004.

In industries where technical change was fastest, the middle-skilled lost out to the most skilled and the least skilled: growth of skills shares and ICT, 1980-2004

Figure 6:
ICT growth causes big increase in highest skill share

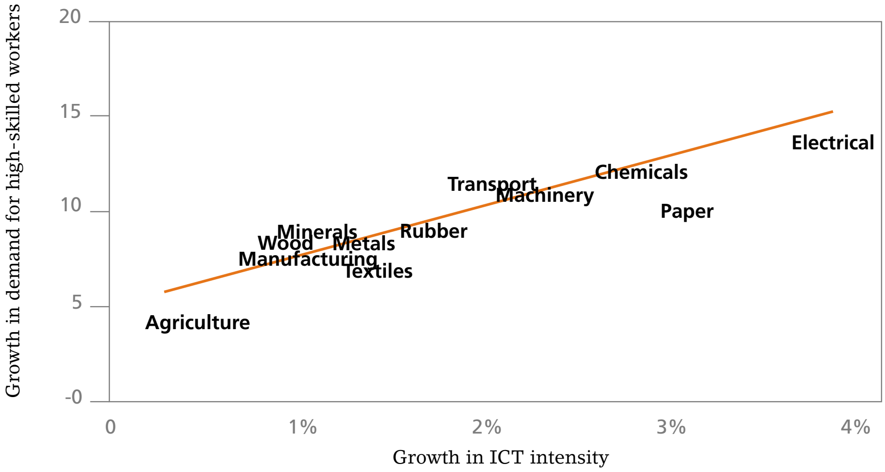


Figure 7:
ICT growth causes big decrease in middle skill share

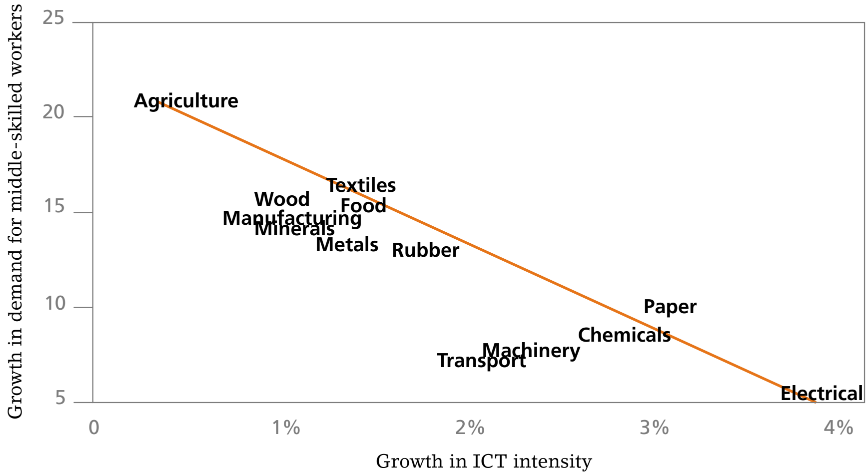
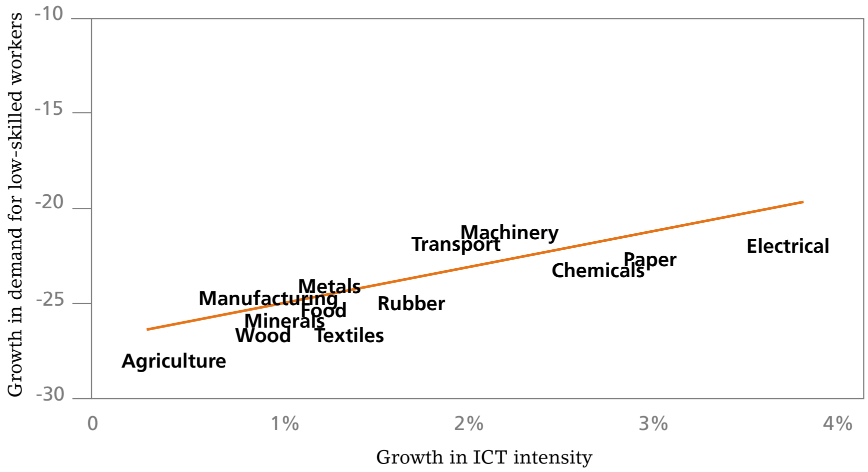


Figure 8:
ICT growth causes small increase/no change in least skill share



Note: All three figures plot the growth of ICT/VA (ratio of the information and communication technology to value added) against the growth of a skill group (the share of the wage bill going to the education group). This is done across all the traded sectors of 11 OECD countries between 1980-2004. Michaels et al (2010) show this pattern also holds for non-traded sectors.

Substitution of middle-skilled workers by high-skilled workers is most prevalent in industries with higher R&D and higher use of ICT

Images: Peter Reid www.flickr.com/photos/38509565@N00/

Technology is replacing the middle-skilled

To look at whether technology is reducing demand for those in the middle, we have conducted a simple test using 25 years of data across 11 countries and all sectors of the economy. If our story is right, we would expect industries that had a faster growth of computerisation to have also had an increase in demand for college-educated workers relative to workers with middle levels of education, leaving the least skilled unaffected. Our analysis of the data reveals that this is basically what has been going on.

After 1980, countries with faster upgrading of ICT (Finland, the Netherlands, the UK and the United States) also saw the most rapid increase in high-skilled workers (see Figure 5). Across different countries, similar industries – for example, financial services, telecommunications and electrical equipment manufacturers – replaced middle-skilled workers with high-skilled workers at the fastest rate.

This finding is consistent with a technology-based explanation for polarisation, but not with alternative explanations that emphasise institutional changes, such as the decline of trade unions or the introduction of minimum wages.

Changes in skill demand across industries are strongly correlated with ICT upgrading. Industries that experienced more rapid ICT upgrading also increased the relative demand for high-skilled workers (see Figure 6) at the expense of middle-skilled workers (see Figure 7), with little impact on low-skilled workers (see Figure 8).

The change in demand reflected an increase in both the wages and the hours worked by high-skilled workers relative to middle-skilled workers. We document this finding not only for the full sample of countries together, but also separately for the United States and for continental Europe.

There is also evidence of technology polarising the demand for skills not only through increased intensity of ICT. Industries that engage in more research and development (R&D) also show the same pattern of substitution of middle-skilled workers by high-skilled workers. Taken together, ICT upgrading and R&D account for about a quarter of skill upgrading since 1980.

The middle classes should beware – the robots are coming for you next

What about trade?

An alternative explanation for the falling demand for non-college workers is globalisation. The idea is that increased trade with low-wage countries like China has depressed the wages and taken the jobs of the less skilled.

We find that the positive correlation between trade openness and the increased demand for high-skilled relative to middle-skilled disappears once we control for technological change. This could either mean no role for trade or a more subtle effect whereby trade has an indirect effect by inducing faster technical change (an effect discussed elsewhere in this *CentrePiece* – see page 2).

In either case, unless one believes in a Luddite view of smashing machines, there is no reason to erect trade barriers to protect less skilled workers from the effects of China, India or other emerging economies.

Conclusions

Polarisation is not bad news for the least skilled – there will be jobs for them even in a high-tech world. But for the middle classes, technology may be endangering their future labour market prospects.

This article summarises 'Has ICT Polarized Skill Demand? Evidence from Eleven Countries over 25 Years' by Guy Michaels, Ashwini Natraj and John Van Reenen, CEP Discussion Paper No. 987 (http://cep.lse.ac.uk/pubs/download/dp0987.pdf).

Guy Michaels is a lecturer in LSE's economics department and a research associate in CEP's labour markets programme. **Ashwini Natraj** is a research assistant in CEP's productivity and innovation programme. **John Van Reenen** is director of CEP.

Further reading

David Autor, Frank Levy and Richard Murnane (2003) 'The Skill Content of Recent Technological Change: An Empirical Exploration', *Quarterly Journal of Economics* 118(4): 1279-333.

Claudia Goldin and Larry Katz (2008) *The Race Between Education and Technology*, Belknap Harvard – reviewed by John Van Reenen in the November 2010 issue of the *Economic Journal*.

Maarten Goos and Alan Manning (2007) 'Lousy and Lovely Jobs: The Rising Polarization of Work in Britain', *Review of Economics and Statistics* 89(1): 118-33.

Stephen Machin and John Van Reenen (2010) 'Inequality', CEP Election Analysis (http://cep.lse.ac.uk/pubs/download/ea015.pdf).

Karl Mieske (2009) 'Low-skill Service Jobs and Technical Change', unpublished MSc dissertation, University College London.

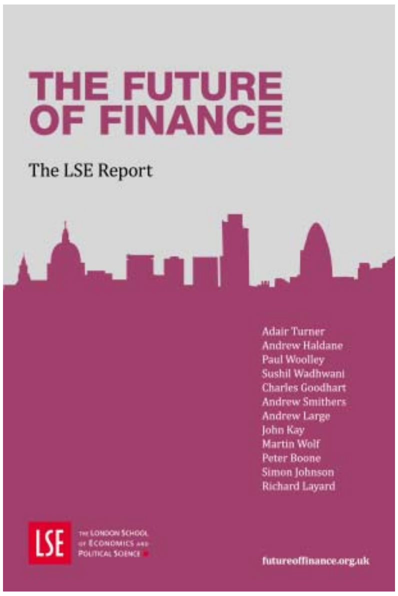
in brief...
The future of finance

What is a financial system for? That is the starting point for the LSE's recent report on reform of the world's financial system, which brings together the work of leading academics, financiers, journalists and officials from the UK's Financial Services Authority, the Bank of England and the Treasury.

The financial crash of 2008-9 has been the most damaging economic event since the Great Depression, affecting the lives of hundreds of millions of people. The most immediate problem now is to prevent a repeat performance.

The central question is what the financial system is for? Standard texts list five main functions: channelling savings into real investment; transferring risk; maturity transformation (including smoothing of lifecycle consumption); effecting payments; and making markets. But looking at how financial companies make their money, it is extraordinarily difficult to see how closely this corresponds to the stated functions, and it is often difficult to explain why the rewards can be so high. Any explanation must also explain why the system is so prone to boom and bust.

The opening chapters of the LSE report (by Adair Turner, Andrew Haldane and Paul Woolley) deal with these fundamental issues: the ideal functions of the system; the way the system has actually operated; and the sources of boom and bust. To answer these questions, much of the abstract theory of finance has to be abandoned in favour of a more realistic model of how the different agents actually behave.



Central to this is opacity and asymmetric information, combined with short-term performance-related pay. For example, the asset price momentum that accompanies booms occurs because the owners of giant funds expect fund managers to shift into the fastest rising stocks. (They would do better to invest on a longer-term basis.)

The opacity of the system has increased enormously with the growth of derivatives. Did this contribute to high long-term growth? The issue remains open. On one side, people point to the high real growth during the period 1950-73 (an era of financial repression) and the real cost of the present downturn. On the other side, many studies, discussed in the report by Sushil Wadhwani, point to real benefits from financial deepening. But apart from his chapter, all other contributors invoke the need for a radically simplified and slimmer financial system.

There are four aims of such a reform. The first is to prevent the financial system destabilising the real economy, as it has in the recent past. The second (closely related) is to protect taxpayers against the possible cost of bailouts. The third is to reduce the share of real national income that accrues as income to the financial sector and its employees for reasons not related to the benefits it confers – thus absorbing into the sector talent that could be more usefully used elsewhere. And all of this has to be done in a way that works.

There are two main lines of approach. The first is regulation – higher capitalisation of all financial institutions, and levels of required capital that rise in a boom and fall

The financial system has become far more complicated than it needs to be to discharge its functions – and dangerously unstable into the bargain

What's needed is a radically simplified and slimmer financial system

in a slump. In the report, Charles Goodhart points to some of the difficulties involved in any such regulation; Andrew Smithers shows that asset price booms can be identified, at least sometimes; and Andrew Large discusses how such information could be used, if there were an independent committee specifically charged with 'macroprudential regulation'. (Sushil Wadhwani argues by contrast that financial booms should be mainly controlled via interest rates.)

The second main approach to a more stable system is institutional reform. John Kay argues strongly for the introduction of narrow banking. In such a system, only deposit-taking institutions could expect to be insured through the state, and they would not be allowed to build up a balance sheet of risky assets. This is a version of the so-called Volcker Rule.

Faced with these two possible lines of approach, Martin Wolf comes down in favour of strong regulation, linked perhaps to some institutional reform, aimed especially at greater competition. He argues that the state would in fact bail out any major financial institution threatened with bankruptcy, whether deposit-taking or not; it must therefore regulate all institutions.

Moreover managers must face totally different incentives and pay. In particular, Wolf suggests the managers should be liable to repay a substantial proportion of their pay if their institution requires state assistance or goes bankrupt within ten years of their getting that pay.

All these proposals would directly reduce the profitability of banks and the pay of bankers. Do they have a chance? In the final chapter of the report, Peter Boone and Simon Johnson document the huge influence that banks exert in the political sphere worldwide. They argue that only a worldwide system of regulation embodied in a global body, comparable to the World Trade Organization, could have a chance.

In this context, it is encouraging that the Working Party of the G20 Financial Stability Board, which will deliver proposals to the G20 Summit this November, is chaired by the author of the report's opening chapter, Adair Turner.

The Future of Finance: The LSE Report was published in September 2010 (ISBN: 978 0 85328 458 1, £14.99). To order a copy: call 0845 458 9910; email: mo@centralbooks.com; or visit http://www.futureoffinance.org.uk

The book was discussed at a major conference at Savoy Place, London, in July 2010. Both the conference and the work of the group were funded by the Paul Woolley Centre for Capital Market Dysfunctionality at LSE, and jointly planned by Paul Woolley and Richard Layard, founder-director of CEP.

PUBLICATIONS

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A strong and sustained world recovery requires two rebalancing acts. Internal, with a shift in advanced countries from fiscal support to private demand. External, with an increase in net exports in deficit countries, notably the United States, and a decrease in net exports in surplus countries, notably China. Policy should be aimed at increasing the pace of rebalancing.

Speaker: Olivier Blanchard, Chief Economist and Director of Research, International Monetary Fund
Date and time: Thursday 4 November 2010, 18:30
Venue: Sheikh Zayed Theatre, Lower Ground Floor, New Academic Building, LSE

RESTORING GROWTH

The financial crisis and the great recession dealt the global economy a massive shock. How can growth be put back on a sustainable path? What policy lessons have we learned? And how should Britain respond?

Speaker: John Van Reenen, Professor of Economics, LSE, and Director of CEP
Date and time: Tuesday 16 November 2010, 18:30
Venue: Old Theatre, Ground Floor, Old Building, LSE

These events are free and open to all with no ticket required. Entry is on a first come, first served basis. For any queries email events@lse.ac.uk or call +44 (0)20 7955 6043.

FORTHCOMING PUBLICATION

CEP is pleased to announce the latest volume in 'The State of Working Britain' series.

The third volume of the series – *The Labour Market in Winter: The State of Working Britain 2010* edited by Paul Gregg and Jonathan Wadsworth – will be published in November 2010 by Oxford University Press.
The latest volume provides an overview of key issues concerning the performance of the labour market and policy, with the focus this time around on the latest recession and its aftermath. The intention is to be an indispensable reference source on contemporary labour market developments in the UK, which will be of lasting use to academics, students, practitioners and policy-makers.

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Details of the previous volumes – *The State of Working Britain* edited by Paul Gregg and Jonathan Wadsworth and *The Labour Market Under New Labour: The State of Working Britain* edited by Richard Dickens, Paul Gregg and Jonathan Wadsworth can be found at:
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