

Tomorrow's Capitalism



Building a Better Balanced UK economy:

Where will jobs be created in the next
economic cycle?

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'Tomorrow's Capitalism'

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Executive summary

- Although the roots of the current recession are to be found in the financial sector, all parts of the UK economy have been affected, with manufacturing hit the hardest. By the end of the recession, Britain may have three million people unemployed.
- In the seven years leading up to the recession, the UK was heavily reliant on government, housing and finance as sources of employment growth. These sectors cannot be relied upon for growth in the future. Nor is manufacturing employment likely to reverse its recent trend and start to expand. There is, therefore, considerable concern over where jobs will be created in the coming recovery. This is compounded by the desire to build a sustainable, broader-based economy, less dependent on a few sectors of the economy in the future.
- If employment is to get back to its previous peak, there will have to be large increases in the non-finance, non-retailing private service sectors, which currently account for only around 30 per cent of total employment. This could happen, but only with the right combination of entrepreneurship, a global economic recovery and government action.
- Returning to full employment depends on a more active state. There is a middle ground to be found between an inadequate laissez-faire approach and a return to a misplaced policy of picking winners. Potential growth sectors (including knowledge industries, high-tech manufacturing, creative industries, pharmaceuticals and care services) are prone to a number of market failures – in innovation, training, infrastructure spending and finance – that targeted government can rectify. Recent Government rhetoric has been positive, but needs to be backed up with the creation of institutions to ‘fix’ this approach into the economy. Indeed, if Government fails to take action there is a real possibility that unemployment could remain at elevated levels for many years to come.
- Action is needed in six areas, coupled with a wholesale commitment to environmental sustainability:
 1. Improving access to finance for business innovation, for example through the creation of a Government-backed Ideas Bank.
 2. Investing more in skills and training to encourage life-long learning, for example by introducing a nationally recognised transferable credit-system for all Further and Higher Education courses.
 3. Encouraging investment in research and business start-up, for example supporting universities to buy in support for spinning out companies.
 4. Supporting infrastructure costs through the creation of an infrastructure bank.
 5. Giving regions, Regional Development Agencies and city-regions more control over their own economies.
 6. Building a financial services sector to work with and support business, especially in the low-carbon sector.
- Implementing some specific policies that are consistent with a philosophical approach of government activism will not be enough; action is needed across all six areas listed above. Investment in training, R&D and infrastructure are complementary and re-enforcing and investing in one without the others will not generate the

benefits that can be realised from a holistic approach. Our strategy will help build a stronger, sustainable economy, with high-skilled jobs. It will also establish a less precarious tax base with a financial services sector that supports the wider economy on its path back to full employment and beyond.

- There are reasons to be optimistic and to tell a positive story on the possibilities for growth and jobs in the UK economy – but that optimism depends on a supportive, strategic Government.

1. Introduction

The global financial collapse and subsequent recession have revealed serious weaknesses in neo-liberal capitalism. A deep crisis in finance spread with a vengeance into the real economy. The resulting recession is not just part of a normal business cycle – it was caused by a slump of confidence in the financial sector, leading to a credit crunch, which affected the ability of households and companies to operate. It has become a truly global event, with over 90 per cent of economies in the Organisation for Economic Cooperation and Development now 'officially' in recession. Although the roots of the crisis are to be found in the financial sector, all parts of the global economy have been affected, with manufacturing being hit the hardest.

The depth and extent of the crisis suggest the economic system is likely to undergo some major changes. This paper looks at one aspect of how 'tomorrow's capitalism' could differ from the neo-liberal model of the past: the balance of the United Kingdom's economy. In particular, it focuses on employment and asks how government can support the transition to a stronger and more balanced labour force. While the immediate fiscal and monetary measures introduced by the Government and Bank of England to combat the recession are important, our focus is on longer term patterns of growth and government action.

It is now widely accepted that the UK relied on a narrow portion of the economy – the City, housing market and public sector – for growth in output and employment during the last economic cycle. In this paper, we ask what needs to be done if the UK economy is to be better balanced in the future, with output and employment growth spread across a wider part of the economy. The benefits of such an outcome should not be underestimated. A better balanced economy would provide more sustainable jobs, a wider tax base and help prevent one sector of the economy – in this instance finance – bringing the economy to its knees.

In focusing on the outlook for output and jobs, we are not completely ignoring the debate, which is likely to intensify, about what we want from capitalism and, in particular, whether a measure of subjective well-being is a better way to track progress than Gross Domestic Product. Studies of subjective well-being show that a high level of employment is critical for social welfare. Whether you think policy should be geared to maximising GDP or to maximising subjective well-being, the priority for the next few years will be generating sustainable employment growth.

For the UK, this should translate into, at the very least, a target of a reduction in unemployment from an expected peak level in 2010 of around three million (on the labour force measure) to below two million by 2016, with further falls after that. This would match the performance of the last two cycles in terms of jobs growth in the first six years of recovery. A concerted effort by government might produce a better outcome.

But where will the jobs be created? In what occupations and industries might there be strong employment growth? Increases in employment over the last decade were ultimately unsustainable because they were concentrated in just a few sectors of the economy: government, parts of retailing and finance and construction. This has begun to change over the last year as jobs have been lost in many of these sectors and any employment growth in these sectors over the next few years will be constrained by a range of factors. The recovery will, therefore, only be strong and sustained if jobs are created elsewhere in the economy. What needs to be done to ensure this happens?

We believe there is a role for government in shaping the future of the British economy. The performance and structure of the economy is not just a matter of chance. Government policy will determine future growth in output and jobs.

The state is already involved in supporting the economy, for example through bank bail-outs, backing loans to small and medium-sized enterprises (SMEs) and the fiscal measures that were contained in last year's Pre-Budget Report and in this year's Budget. Together with the actions taken by the Monetary Policy Committee, these measures will limit the drop in output and employment during the recession. However, the role of government is not limited to addressing crises. We argue it should play a more permanent role in supporting the economy.

Indeed, if key decisions – on investment in infrastructure, science and skills, on a regulatory framework to encourage long-term investment and on creating opportunities for small and start-up businesses to access credit – are avoided, unemployment could stay at extremely high levels for an extended period. The supply capacity of the UK economy would be seriously damaged as a result. However, with a more supportive government framework, the UK economy could rebalance and prosper.

For example, policies that support the growth of new and small firms, such as a government-backed 'Ideas Bank', would help innovative ideas become the knowledge industries and jobs of the future. Similarly, the future economy will value skills even more highly and will require life-long learning to adapt to new technologies and business models, so government support for Skills Accounts and Train to Gain should extend beyond Level 2 to Level 3 qualifications and the loan scheme for higher education should be extended to cover apprenticeships and part-time courses to boost demand. And, while the finance sector is facing a challenging time right now, we could exploit our comparative advantage in this industry to pioneer a new carbon-finance sector to leverage private sector funding for investment in green technologies.

These are just a few examples of policies consistent with a government strategy to take an active role in shaping the future economy and provide solid foundations in terms of skills and infrastructure for business to succeed and create jobs. Recent government rhetoric has been a move in the right direction, but needs to be matched with institutions and policies designed to 'fix' such ideas into the economy. This is the time for renewed state involvement in the economy – not picking winners but taking measures to support business and enterprise, and so enabling entrepreneurs and tomorrow's firms to create jobs and growth.

Aims and structure of the paper

This paper recommends policy measures that could help return the economy to full employment in a way that is sustainable. Section 2 briefly describes current patterns of employment in the UK. Section 3 looks at developments in the UK's workforce over the seven years up to the middle of 2008 and establishes the key facts about recent changes in the labour market. It also looks briefly at developments in the recession. Section 4 discusses possible trends in the UK's workforce over the next few years and puts the problem of getting the economy back to full employment into a statistical context. Section 5 sets out why the Government has to be involved in helping the economy achieve a better balance and looks at some of the actions that could be taken to facilitate the necessary job creation. Section 6 summarises our conclusions and points the way to a more sustainable British economy.

2. The current structure of UK employment

- Employment in the UK is heavily concentrated in the service sector.
- 25 per cent of the workforce can be found in public administration, health and education; 22 per cent in distribution, hotels and restaurants; 21 per cent in banking, finance, insurance and other business services; and just 10 per cent in manufacturing.
- Approximately half the UK workforce can be classified as in 'skilled' employment.

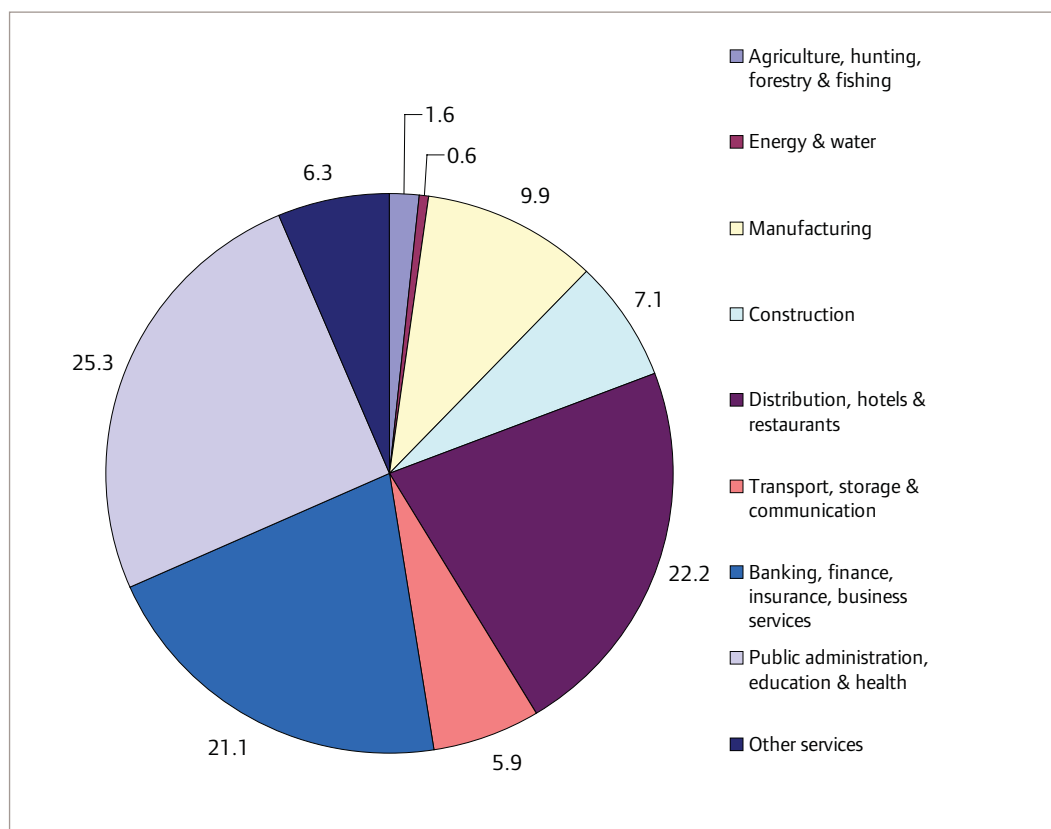
Before considering the future, it is useful to look briefly at the current structure of employment in the UK. We look at data for the second quarter of 2008 because it was then that employment peaked in the last economic cycle. Almost three-quarters of the UK's workforce at that time were employed in the three broad sectors of:

- Public administration, education and health
- Distribution, hotels and restaurants
- Banking, finance, insurance and business services.

Add in the other service industries and over 80 per cent of the workforce was to be found in the service sector. Employment in manufacturing accounted for less than 10 per cent of the total (Figure 2.1).

Figure 2.1. UK employment by industry, Q2 2008 (%)

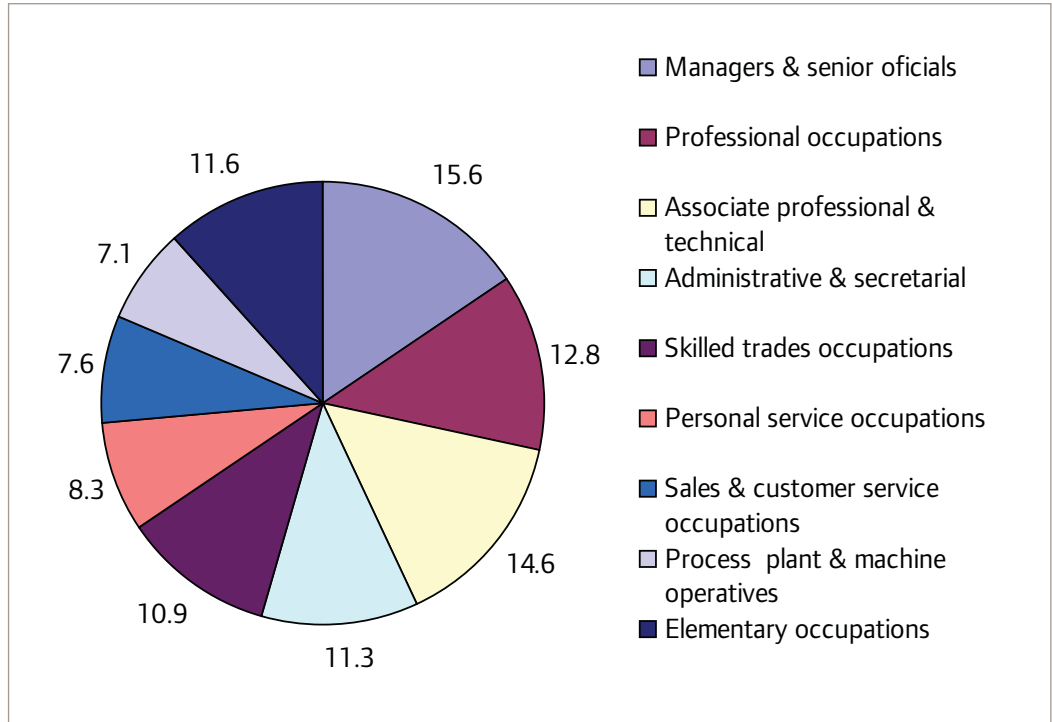
Source: Office for National Statistics¹



1. The data used in this chart and most of the other charts and tables in this paper were either downloaded from the Office for National Statistics (ONS) website at www.statistics.gov.uk/CCI/nscl.asp?ID=5006&x=5&y=12 or were provided direct to the authors by the ONS.

Figure 2.2. UK employment by occupation, 2008 Q2 (%)

Source: Office for National Statistics



There was a reasonably even split of employment by occupation (Figure 2.2). In terms of the broad categories identified by the Office for National Statistics (ONS), managers and senior officials are now the biggest grouping in the workforce, accounting for just under one-sixth of the total. If managers, professionals, associate professionals and skilled trades are categorised as being ‘skilled workers’, then just over half of the workforce falls into this grouping.

3. The main trends in UK employment over the last eight years

- There were increases in skilled service sector jobs and personal service occupations and reductions in employment in clerical roles and low-skilled manufacturing jobs.
- There were increases in employment in education, health and social work and in some business activities, while jobs were lost in manufacturing.
- Employment in financial services shrank, but it increased strongly in those areas usually referred to as 'the City'.
- Government spending and the housing boom helped create jobs; technological progress and overseas competition led to job losses in other areas.

It is now the conventional wisdom that the UK has been too reliant in the past decade on a narrow part of the economy for growth. There is a clear turning point in the data on output and employment in 2001, the year the Government began to increase the growth rate of public spending. Since then, the consensus is that the bulk of growth in output and employment has been in the public sector and the financial sector, particularly 'The City'.

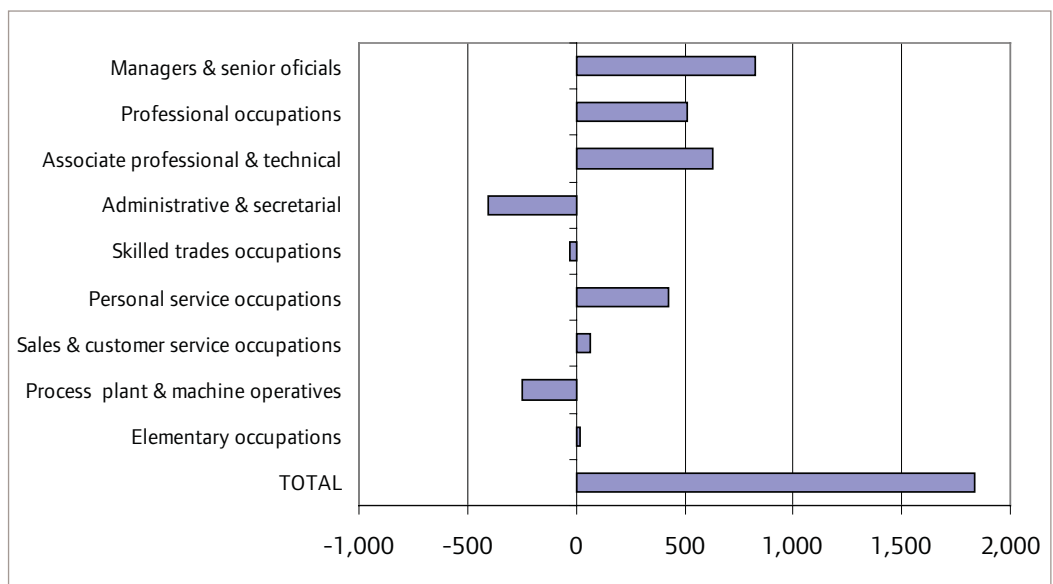
This section checks whether this conventional wisdom is supported by the data. It looks at how the distribution of employment in the UK changed over the seven years from Q2, 2001 to Q2, 2008. Over this period, the number of employed people in the UK increased by 1,830,000, equivalent to 0.9 per cent a year. But while certain sectors and occupations prospered, others declined. This section also looks at developments so far in the recession and presents a projection of how the pattern of employment might look when it reaches its trough.

Trends in UK employment by occupation

At the broadest level, jobs growth over the seven years to the middle of 2008 was concentrated in more highly skilled service sector jobs. In the second quarter of 2008, there were 1,970,000 more managers, professionals, associate professionals and technicians in the UK than there were in the middle of 2001, more than accounting for the growth in aggregate employment over the period. The only other broad sector that experienced significant growth in jobs was personal service occupations (see Figure 3.1).

Figure 3.1.
Change in UK employment by occupation, 2001 Q2 to 2008 Q2 (thousands)

Source: Office for National Statistics



The jobs that have been lost since 2001 were semi-skilled and unskilled ones. There was a decline of 400,000 in the number of people in administrative and secretarial roles and a 250,000 drop in processing and machine operatives.

Drilling down into the nine broad categories illustrated in Figure 3.1 highlights some specific areas of significant increases and reductions in jobs. Occupations that have seen their share of the jobs market increase most over the last seven years include functional managers (particularly in IT and communications), office managers, teachers and health professionals. In the second quarter of 2008 there were 1,394,000 functional managers in the UK, an increase of 333,000 (31 per cent) compared with seven years earlier. Other occupations that saw large increases in employment between 2001 and 2008 are highlighted in Table 3.1.

Table 3.1: Increases in employment in selected occupations, 2001 Q2 to 2008 Q2

Occupation	Employment (000s)		Change	
	2001 Q2	2008 Q2	000s	%
Functional managers	1,061	1,394	333	31
Personal services – childcare	569	804	235	41
Construction trades	773	939	165	21
Teaching professionals	1,140	1,298	159	14
Personal services – healthcare	879	1,006	127	14
Associate professionals – health	603	722	119	20
Office managers	335	451	116	35
Associate professionals – social welfare	181	286	104	58

Source: Office for National Statistics

Occupations that have seen their share of the jobs markets reduce most over the last seven years include administrative occupations in finance and records, personal assistants and secretaries, process, plant and machine operatives and assemblers and routine operatives. In the second quarter of 2008 there were 289,000 assemblers and routine operatives in the UK, a decrease of 173,000 (37 per cent) on seven years earlier. Other occupations seeing large decreases in employment between 2001 and 2008 are highlighted in Table 3.2.

Table 3.2: Decreases in employment in selected occupations, 2001 Q2 to 2008 Q2

Occupation	Employment (000s)		Change	
	2001 Q2	2008 Q2	000s	%
Secretarial and related	986	779	-207	-21
Assemblers and routine operatives	462	289	-173	-37
Administrative – records	653	533	-120	-18
Metal machining	422	315	-106	-25
Process operatives	422	338	-84	-20
Administrative – finance	856	783	-73	-9
Plant and machine operatives	265	195	-70	-26

Source: Office for National Statistics

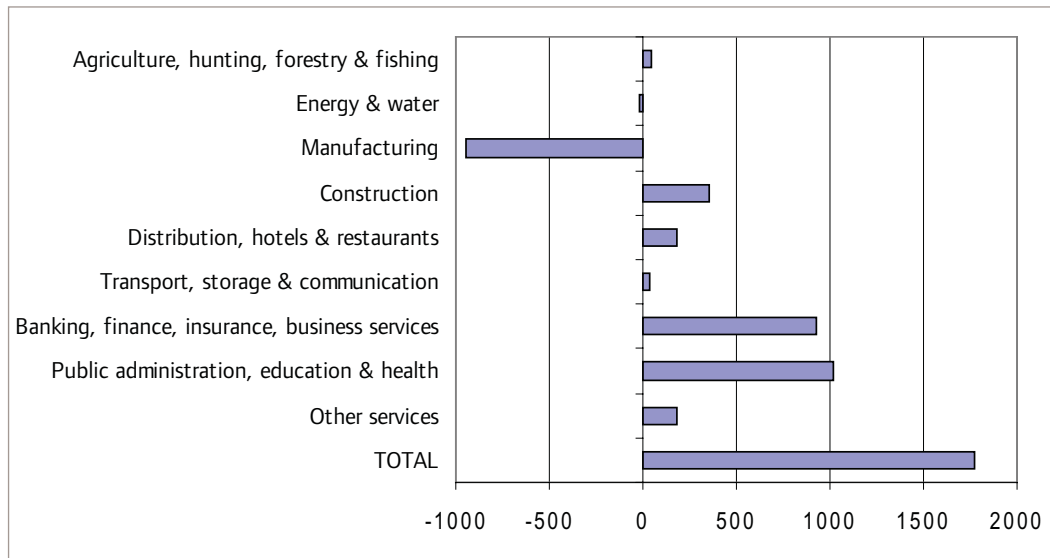
As a result of these changes, there has been a big increase in the share of knowledge-based jobs in the UK workforce. According to the Work Foundation, 'knowledge workers' accounted for about 42 per cent of all workers in the UK in 2006, compared with a figure of 31 per cent in 1984 (Brinkley 2006). Given the continued decline of manual and low skilled jobs in manufacturing, it is likely that this share had increased by 2008.

Trends in UK employment by industry

Looking at employment patterns by industry rather than by occupation shows that, at the broadest level, the bulk of the increase in jobs over the last seven years has been concentrated in two sectors: public administration, education and health on the one hand and banking, finance, insurance and business services on the other. Indeed, employment in these sectors increased by 1,940,000 between 2001 Q2 and 2008 Q2, more than accounting for all the increase in employment over the period (Figure 3.2).

Figure 3.2.
Change in UK employment by industry, 2001 Q2 to 2008 Q2

Source: Office for National Statistics



There was also an increase of 350,000 people employed in construction, equivalent to 2.5 per cent growth per year. This was the biggest percentage gain in any sector. Employment in manufacturing, on the other hand, fell by 950,000 over the same period – an annual rate of decline of 3.7 per cent. Employment declined in every branch of manufacturing over the last seven years. Among the sectors seeing the steepest falls in employment were textiles and leather goods (including footwear), basic metals and electrical and optical equipment.

There was modest growth in employment in the distribution, hotels and restaurants sector over this period, the result of gains in some areas being offset by losses in others. For example, employment increased strongly in food retailers and restaurants, but contracted in specialised retailers. This reflects two trends within retailing over this period: the diversification of the major food supermarket chains into more non-food items and the growth of internet shopping.

Within the financial sector there were also areas of job gains and losses. While there was a large increase in employment in 'activities auxiliary to financial intermediation', which includes most activities of investment banks, asset managers and hedge funds, employment in banks and in insurance and pension funding declined. The City may have thrived between 2001 and 2008 but technological progress and the transfer of jobs overseas resulted in a reduction in jobs in more traditional areas of retail banking and in the provision of pensions and insurance.

Other areas of notable jobs growth within the private sector were in recreation, market research, consultancy and labour recruitment and there were also substantial increases in employment in education, the health service and social work. Table 3.3 highlights industries seeing significant increases or decreases in employment between 2001 and 2008.

Table 3.3: Changes in employment in selected industries, 2001 Q2 to 2008 Q2

Industry	Employment (000s)		Change	
	2001 Q2	2008 Q2	000s	%
Education	2,027	2,348	322	16
Health	1,805	2,123	319	18
Social work	990	1,182	191	19
Miscellaneous business activities	378	530	152	40
Market research and consultancy	246	389	143	58
Construction	1,140	1,275	136	12
Restaurants	509	635	126	25
Real estate	360	445	85	24
Recreational, cultural	691	773	83	12
Labour recruitment	680	762	82	12
Retail – mainly food/beverages	932	1,013	82	9
Post and telecommunications	545	464	-82	-15
Manufacture of pulp, paper etc.	445	348	-98	-22
Manufacture of basic metals	484	366	-118	-24
Manufacture of textiles etc.	210	91	-120	-57
Manufacture of electrical equipment	468	287	-181	-39

Source: Office for National Statistics

Underlying causes of trends in UK employment

This analysis of employment by occupation and industry suggests there were four key drivers of developments within the jobs market over the last seven years.

- 1. Government:* Large increases in jobs in the education and health sectors reflect the priorities of the Government, which stepped up the growth of real spending in these areas from 2001.
- 2. Housing:* The housing boom has been associated with large increases in employment in the construction sector and in real estate.
- 3. Overseas competition:* Manufacturing output in the UK has stagnated, in part due to competition from low-wage emerging economies including China which has led to lost business for UK firms and to UK manufacturers transferring production overseas². Combined with continued productivity growth, this has led to declines in employment in manufacturing, particularly in unskilled and low-skilled jobs. An increase in outsourcing of some functions within service industries has also contributed to declines in low-skilled and unskilled jobs in that sector.
- 4. Technological progress:* As computers have become more powerful and software has been developed to enable them to perform a wider range of functions, companies such as retail banks, can cope with fewer administrative staff and secretaries.

Over the next seven years, two of these four drivers might be expected to persist and two to diminish, or even to go into reverse. Technological progress – allowing firms to continue to replace less skilled and unskilled workers with computers – and competition from emerging

2. A survey for the manufacturers' organisation EEF found that 78 per cent of manufacturers had transferred some or all of their manufacturing overseas (EEF 2009).

economies will be sustained or intensify, putting pressure on the UK's manufacturing industry and leading to more outsourcing in the manufacturing and service sectors³. On the other hand, the growth of public spending will be significantly lower in coming years as the Government seeks to reduce the huge fiscal deficit that has built up as a result of the recession. This will limit growth in employment in areas such as health and education (although increased private provision may provide some offset). Meanwhile, the housing market seems likely to be subdued for a number of years, so the outlook for employment in areas such as real estate and in the construction sector has deteriorated.

The unhappy conclusion is that the drivers that have caused the number of jobs in some areas of the economy to decline in recent years are likely to remain in place, while the drivers that have led to strong growth in jobs in other areas look set to disappear.

Developments in the early months of the recession

The latest figures show employment in the UK peaked in the second quarter of 2008. Between June 2008 and March 2009 the number of workforce jobs fell by 473,000 – or 1.5 per cent – in aggregate. Table 3.4 shows a breakdown by industry of the change in jobs over this period.

Table 3.4: Changes in workforce jobs by industry, June 2008 to March 2009

Industry	Employment (000s)		Change	
	Jun 2008	Mar 2008	000s	%
Agriculture, forestry & fishing	499	492	-7	-1.4
Mining, energy & water supply	198	197	-1	-0.5
Manufacturing	3,138	2,942	-196	-6.2
Construction	2,252	2,246	-6	-0.3
Distribution, hotels & restaurants	7,037	6,857	-180	-2.6
Transport & communications	1,872	1,845	-27	-1.4
Finance & business services	6,668	6,483	-185	-2.8
Education, health & public admin.	8,009	8,145	136	1.7
Other services	1,987	1,981	-6	-0.3
Total	31,661	31,188	-473	-1.5

Source: Office for National Statistics

Unsurprisingly, some of the biggest job losses have been in the finance and business services sector. Many banks and other financial institutions have announced redundancies on a large scale as they seek to control costs following a sharp reduction in revenues and investment losses. There have also been large cut-backs in jobs in the distribution, hotels and restaurant sectors, as consumers spend less. However, the biggest proportionate fall in jobs – at 3.3 per cent – has been in manufacturing. This reflects three factors. First, manufacturing jobs have been declining steadily for the last decade, so this is a continuation of the well-established trend. Second, manufacturing output has been hit by the slump in world trade. Third, manufacturers in some industries have cut production aggressively, and laid off workers, as they seek to reduce inventory levels.

3. Almost half of manufacturers in EEF's survey believe more of their production will take place overseas over the next five years, with the need for cost reduction being the main incentive (EEF 2009).

So far, education, health and public administration and other services have avoided overall job losses.

Employment in the rest of the recession

Economic forecasters expect employment to fall by 2.7 per cent in 2009 and by a further 1.3 per cent in 2010 (HM Treasury, Forecasts for the UK economy, June 2009). This suggests total employment could fall by about 1.25 million from its peak level of almost 31.75 million in the second quarter of 2008 to around 30.5 million in mid-2010. Based on trends so far, anecdotal evidence and likely developments in individual sectors, which are discussed in more detail in Section 4, the pattern of job losses during the recession might be along the lines set out in Table 3.5.

Table 3.5: Projected changes in jobs by industry, peak to trough

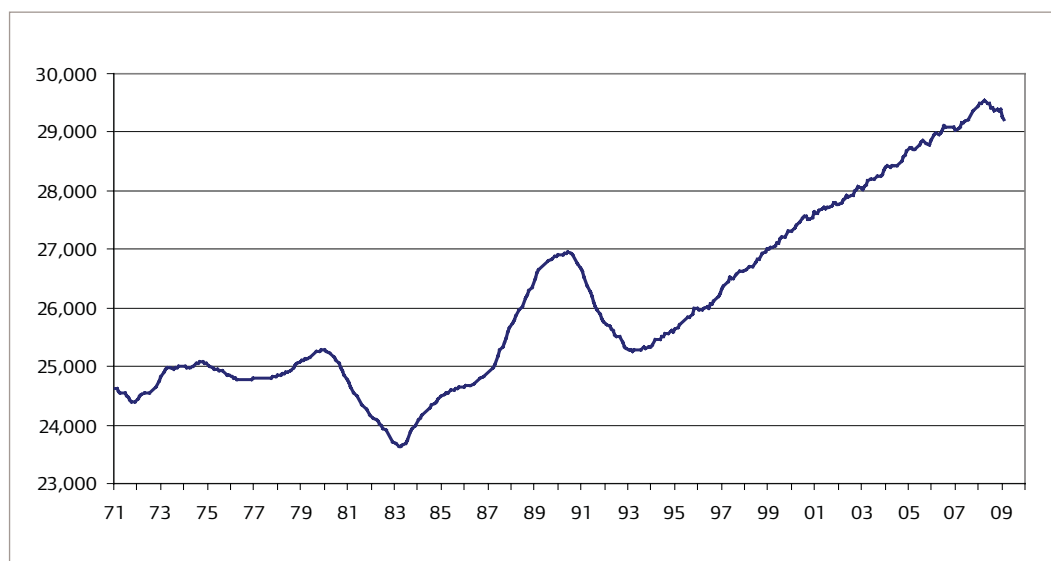
Industry	Employment (000s)		Change	
	Mid 2008	Mid 2010	000s	%
Agriculture, forestry & fishing	499	500	1	0.2
Mining, energy & water supply	198	200	2	1.0
Manufacturing	3,138	2,850	-288	-9.2
Construction	2,252	2,200	-52	-2.3
Distribution, hotels & restaurants	7,037	6,700	-337	-4.8
Transport & communications	1,872	1,800	-72	-3.8
Finance & business services	6,668	6,275	-393	-5.9
Education, health & public admin.	8,009	8,000	-9	-0.1
Other services	1,987	1,975	-12	-0.6
Total	31,661	30,500	-1,160	-3.7

Source: Office for National Statistics and authors' calculations

After each of the last two recessions, it took roughly eight years for employment in the UK to return to its previous peak level, before going on to even higher levels (Figure 3.3). In the last cycle, employment peaked in the second quarter of 2008, so recent historical experience suggests a return to an employment level of 31.7 million only in 2016, if the recovery follows the same pattern as previous ones.

Figure 3.3. UK employment (thousands)

Source: Office for National Statistics



Some would argue this represents a best-case scenario. The depth and nature of the current recession could mean that it takes longer to get back to peak employment. Research by the International Monetary Fund has shown recoveries that follow balance sheet recessions, like the current one, tend to be relatively sluggish (IMF 2009: 112-7). The case for the Government to do all that it can to help restore employment to its previous peak by 2016 – and preferably sooner – is, therefore, a strong one. In Section 5, we look at some of the measures that could be taken to achieve this aim, but that do so in a way that produces a better balance in the economy.

Before that, in Section 4, we look at probable trends in employment in key sectors over the next few years, to illustrate the scale of the changes required if the UK economy is to 'rebalance'. The conventional wisdom is that employment in manufacturing will continue to decline, though at a less rapid pace than seen in the second half of 2008, that employment in distribution, hotels and restaurants will rebound reasonably quickly in the recovery, while employment in the financial sector increases very little, if at all. Next we look in more detail at the assumptions underlying these views and assess likely trends in employment during the economic recovery.

4. Employment in the next recovery

- There is little prospect of an increase in employment in the public sector, the financial sector or the retail sector between now and 2016.
- It would be a major change in trend if UK manufacturing employment were to stop declining.
- If employment is to get back to its previous peak by 2016, there will have to be large increases in the other sectors of the economy, which currently account for only around 30 per cent of total employment.
- This can happen but only with the right combination of entrepreneurship, a global economic recovery and government action.

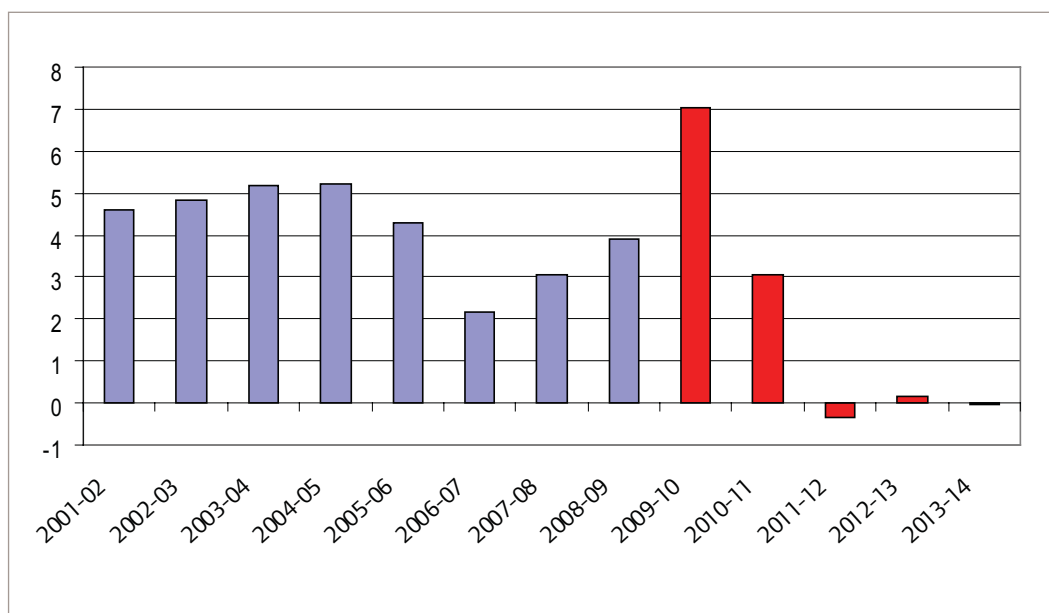
In this section we analyse probable developments in employment in key parts of the UK economy over the period to 2016 – the year when, in a ‘normal’ recovery, employment might be expected to return to its previous peak level. This allows us to judge the likelihood of employment recovering without government intervention and the scope for a shift in the balance of employment in the economy.

The public sector

The most significant change in UK employment trends in the next seven years compared with the last seven will occur in the public sector. According to the recent Budget, real public spending (total managed expenditure) increased at an annual rate of 4.2 per cent between 2000–01 and 2007–08 (HM Treasury 2009: 253). Recent years have seen the most sustained real increases in public spending, on this definition, since the first half of the 1970s. However, things are about to change. The Budget envisages a sharp fall in real spending growth in 2010–11. Over the three years after that, real current spending is projected to increase by just 0.7 per cent a year, on average, while total spending (that is, including capital spending) is not projected to grow at all (Figure 4.1).

Figure 4.1. Real growth in total managed expenditure (%)

Source: HM Treasury, Budget 2009, April 2009

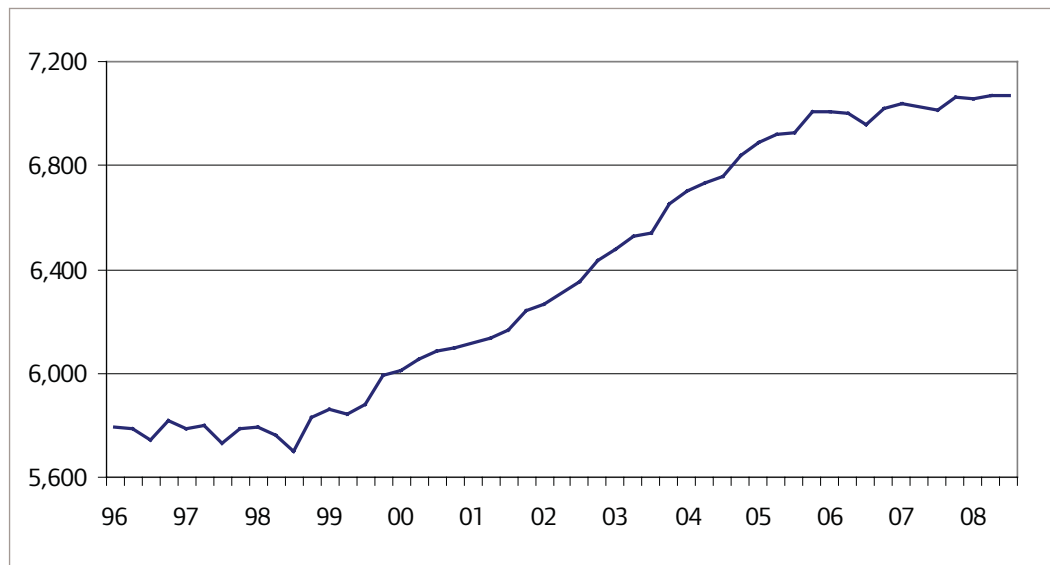


Furthermore, large fiscal deficits will increase public debt and future debt interest payments, while increased unemployment results in higher payments on welfare benefits. Extra money spent in these areas means there will be less to spend by government departments. Since departmental spending is the sort of spending that produces jobs in the public sector, from an employment perspective the outlook is even gloomier than suggested by Figure 4.1.

The effect of the surge in real public spending in recent years can be seen in employment levels in public administration, education and health (though some of the jobs in education and health are in the private sector). After stagnating in the 1990s, the number of jobs in these sectors soared from around 5.8 million in 1999 to 7 million in 2006 (Figure 4.2). Since then, employment has continued to increase, but at a much slower pace.

Figure 4.2. Total employment in public administration, education and health (thousands)

Source: Office for National Statistics



As Figure 4.2 shows, employment in these sectors was unchanged throughout much of the 1990s, and it even declined slightly in the second half of the decade. This was the last time that real public spending was constrained in the UK (it fell by 2 per cent in aggregate between 1995–96 and 1998–99). The likelihood, therefore, is that employment in these sectors of the economy – which together accounted for one quarter of total UK employment in 2008 and for 57 per cent of employment growth over the last seven years – will not increase for several years. In fact, given the Government's fiscal deficit, there is a strong possibility that it will decline.

The financial sector

There has already been a substantial fall in employment in the financial sector since the middle of last year (see Table 3.5, above) and there are concerns that declining employment in the City of London will have a major impact on overall employment trends in the UK.

In fact, the City is less important for direct employment than is generally understood (though it has been more important for aggregate incomes, profits and tax revenues). According to the City of London Corporation, total employment in the City, its fringe and Canary Wharf, in finance and related areas, was 326,000 in 2006 – just 1 per cent of total UK employment (City Research Focus 2008).

This does not, of course, include hedge fund managers and other financial intermediaries who have set up business in the West End of London. However, the point stands that 'City employment' is small in relation to the total employment of the UK.

Table 4.1: Employment in the City of London, 2006 (thousands)

Geographical area	Finance ⁽¹⁾	Related business services ⁽²⁾	Total
City	130.5	58.5	189.0
City fringe	42.0	36.9	78.8
Canary Wharf	53.5	4.3	57.9
Total	226.0	99.7	325.7

Notes: (1) Financial intermediation, insurance and pension funds and other financial activities; (2) Legal and accountancy

Source: City Research Focus 2008

The broader employment statistics show financial intermediation in aggregate is more significant, accounting for 4 per cent of total employment. However, aggregate employment in this sector declined over the seven years to 2008, by 41,600.

Table 4.2: Employment in financial intermediation (thousands)

Occupation	Employment		Change
	2001 Q2	2008 Q2	
Financial intermediation	1,071.9	1,030.3	-41.6
Financial intermediation except insurance and pension funding	605.3	567.5	-38.7
Central banking and other banks	512.3	464.0	-48.3
Other financial intermediation	93.0	103.5	10.5
Insurance and pension funding	225.8	177.6	-48.2
Activities auxiliary to financial intermediation	240.8	285.3	44.5
Except insurance and pension funding	107.3	150.3	43.0
Auxiliary to insurance and pension funds	133.5	135.0	1.5

Source: Office for National Statistics

One estimate – by Charles Davis at the Centre for Economic and Business Research – suggests employment in London's financial sector (excluding accountancy and law) increased by over 150,000 between 2003 and 2008 (*The Observer*, 5 April 2009). Some of these jobs have already been lost. Davies believes staff levels in London's financial sector will be down to 290,000 in 2009 against a peak of 360,000 in early 2008 and 'There is a danger of the numbers contracting further to around [...] 200,000' (ibid). An alternative estimate – on a broader definition – can be found in Appendix 1.

Of course, there is also a danger that the depth of the financial crisis is causing excessive pessimism about the medium-term outlook for this sector and it would be wrong to write off the financial industry completely. The UK has a comparative advantage in areas of finance, such as asset management, corporate finance and advising on mergers and acquisitions, which will survive the current turmoil. It would be wrong, therefore, to project ever declining employment numbers in the City. Furthermore, the financial sector as a whole is more diverse than the City and around three-quarters of those employed in it are outside London.

Equally, though, financial institutions, as part of their efforts to rebuild profit margins, are likely to keep a tight control on costs, including labour costs, over the next few years. To do so, they might step up efforts to outsource employment and introduce new technology. Overall, therefore, employment in financial intermediation will probably continue to decline in the coming years. The conventional wisdom – that the financial industry will not be a source of jobs growth in the recovery – is, therefore, probably correct.

Retail and associated sectors

Rebalancing the UK economy will require a shift in emphasis from consumption to exports. Growth in the last decade was fuelled by debt-financed consumer spending, which increased at an annual rate of 3.2 per cent in real terms, faster than the rate of GDP growth, which was 2.6 per cent. Meanwhile, imports increased by 4.9 per cent a year and exports by just 3.7 per cent. The trade deficit ballooned to £44 billion in 2008. Household debt in 2007 was 176 per cent of disposable income, up from 109 per cent in 1999 and higher than in any other developed economy.

No one believes this is sustainable. Growth in future will need to be driven less by consumption and more by exports and investment. The present crisis is likely to be the event that leads to a reversal of past trends. It is necessary for consumer spending to grow by roughly 0.5 per cent a year less than real GDP for much of the next decade – that is, by around 2 per cent a year – to restore balance in the economy. Such a slowdown will have implications for employment in the retail sector.

Over the last decade, although consumer spending growth has been significantly stronger than growth in the aggregate economy, employment in the wholesale and retail sectors has increased less rapidly than employment in the economy as a whole – by 0.6 per cent a year, compared with 0.9 per cent. This suggests that productivity gains in wholesaling and retailing have been greater than in the overall economy, probably as a result of retailers' and wholesalers' ability to take advantage of technological change.

It is difficult to say with any certainty whether wholesalers and retailers will continue to enjoy such an advantage in productivity growth but the presumption is that they will. If so, and if consumer spending growth slows from above 3 per cent a year to around 2 per cent a year, then there seems to be little prospect of growth in employment in these sectors. This matters because together they employed 4.5 million people in the middle of last year.

Employment in other sectors is also likely to be hit by weaker consumer spending growth. For example, the hotel and restaurant sector, which employed 1.75 million people in the middle of last year, experienced an increase in employment of 133,000 between 2001 and 2008 – an annual rate of 1.1 per cent. Tougher times for households will probably mean less rapid growth in these sectors too.

One offset could result from Sterling's recent sharp decline. A rise in foreigners coming to the UK on holiday and more domestic holidays, rather than overseas trips, for Britons, will add to spending in the UK.

Taken together, retail and associated sectors employed 6,247,000 people in the second quarter of 2008 – almost one-fifth of total UK employment. This was an increase of 209,000 compared to seven years earlier. It is likely that fewer, if any, jobs will be added in these sectors over the next seven years.

Construction and real estate

Employment in construction and real estate rose by almost 250,000 over the seven years to 2008. A good part, though not all, of this increase was due to the strength of the UK housing market. The fall in house prices and the collapse in house building means many of these jobs will be lost in 2009 and 2010. Past experience suggests that the housing market will recover more slowly than the rest of the economy. In addition, the Government is likely to be building fewer schools and hospitals in the future. So employment growth in these sectors is unlikely to be strong in the first half of the next decade.

Manufacturing

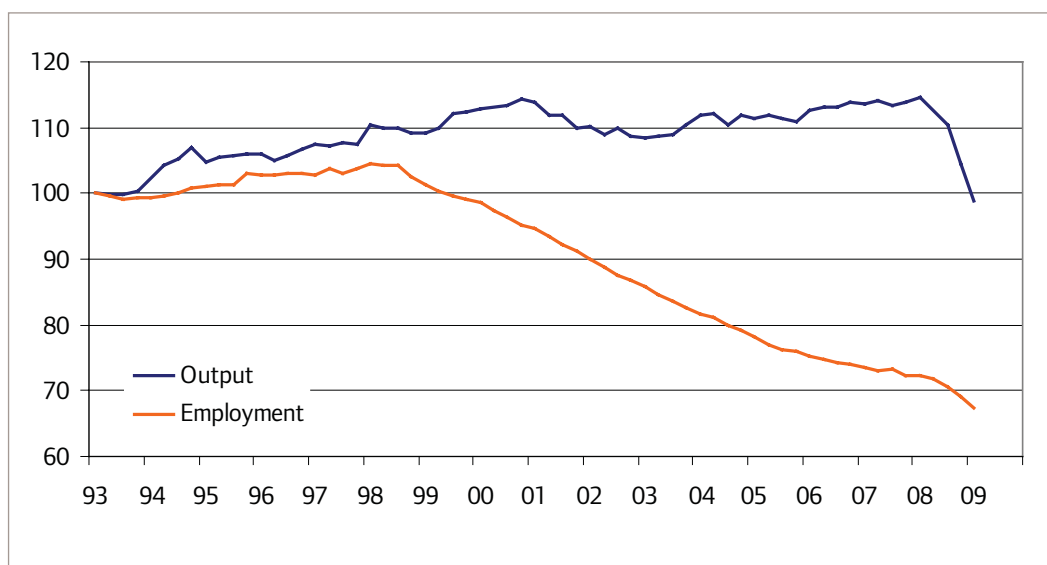
Defining the manufacturing sector is not as easy as it seems and there is some debate about its true importance to the UK economy. Raw data show rapid declines in employment in the sector. However, the increased tendency to outsource functions such as support services and catering may obscure the true picture. When a manufacturer employs a canteen worker, that person is classified as working in the manufacturing sector. When the manufacturer outsources the provision of food to an external catering company, the canteen worker becomes a service sector employee.

In addition, some manufacturing firms have moved into post-production services because they are more profitable. Rolls Royce, for example, relies on profits from servicing aeroplane engines, not from making them, and ex-metal fabricators in the Tees Valley have switched to project managing major construction projects rather than manufacturing metal. These activities are functionally linked to manufacturing – but are not technically manufacturing jobs.

Nonetheless, it is hard to argue with the proposition that Britain's manufacturing industry has been in relative decline for decades. Output at the peak of this economic cycle in 2008 was no higher than output at the peak of the last cycle in 2000. Meanwhile, over this period, employment in manufacturing fell by over 1 million – an annual rate of decline of 3.7 per cent (Figure 4.3).

Figure 4.3. UK manufacturing output and employment 1993–2008 (1993 Q1=100)

Source: Office for National Statistics



Data on employment by occupation show that well over half this fall is explained by a reduction in numbers employed in skilled, semi-skilled and unskilled processing and machine operative jobs. Outsourcing of 'services' is only a small part of the explanation. Much more

important are the effects of technological change and growing overseas competition. These challenges are not going to diminish and it will be a significant achievement for the UK just to halt the decline in employment in this sector, never mind generating employment growth.

There are, though, optimists who think it can be done. They point, for example, to the need for growth in the UK economy to be rebalanced away from consumption and towards exports and note that the manufacturing sector accounts for around 60 per cent of UK exports, despite only accounting for 13 per cent of output. So, although the sector is suffering right now, the fall in Sterling relative to other major currencies should encourage investment and increase output in response to export potential.⁵

Lord Mandelson, Secretary of State for Business, Enterprise and Regulatory Reform, has called for a UK economy 'with less financial engineering and more real engineering' (Mandelson 2009). Lord Bhattacharyya, Director of Warwick University's manufacturing group, was quoted in the *Financial Times* as saying:

'I don't envisage much expansion in sectors such as financial services and public spending. If the UK is going to expand at all, it's got to be in manufacturing ... I can envisage a lot of smaller firms springing up in fields concerning green technology, for instance solar energy production, or electric vehicles. I think the amount of manufacturing in the economy could grow to 18-20 per cent [of gross domestic product] in the next decade.' (*Financial Times* 2009)

This would require annual growth of around 5 per cent in manufacturing output (assuming total output increases at a rate of 2.5 per cent a year) – a big change from the last cycle when it did not grow at all.

Meanwhile, the manufacturers' organisation EEF has pointed out that jobs in manufacturing have on average higher salaries and relatively better terms and conditions than jobs in the rest of the economy (Tomaney 2009). In part, this is because the technology element of our manufacturing industry is very high – the UK has the highest proportion of high-tech manufacturing exports of any major country – but also because a lot of the manufacturing we do, for example in areas such as pharmaceuticals, has a high knowledge element.⁶ The green technology sector also provides a potential growth area.

However, China and the other BRIC⁷ economies represent a challenge to the UK's ability to capture the high-end, niche markets in manufacturing. By 2001 China had nearly as many workers in Research and Development as the United States, more than Japan and almost three times as many as Germany. This should enable China to move up the value-added curve and challenge countries, including the UK, in these markets as well as in the low-skill, low-tech, mass-producing manufacturing sectors, where it already competes successfully (Amicus 2006). Our ability to capture green tech manufacturing is hampered by countries who already have an established base in this area, such as Germany and Denmark.⁸ The UK's 'knowledge jobs' are by no means immune from overseas competition.

5. See for example, 'After the Downturn Winners and Losers', *Financial Times*, 22 January 2009.

6. See for example, McRae 2009 for an informal analysis of the UK's comparative strengths.

7. Brazil, Russia, India and China.

8. See Bird 2009 for a detailed examination of job creation in the offshore wind sector.

Overall, therefore, manufacturing over the next few years might be expected to do better than in the last decade, but it is likely to struggle to meet the expectations of its most optimistic supporters. At best, it seems output will grow fast enough to stabilise employment in the sector. If the potential of manufacturing to rebalance the economy is to be realised, some form of government intervention will be necessary.

Other services

While high-end manufacturing, pharmaceuticals and green technologies are likely to be a part of the UK's future, the UK is also a global leader in the creative and cultural industries, which provide high-skilled, high value-added jobs in the service sector. More book titles are published in Britain than in the US and far more than anywhere else in the world. More than half of reality TV programmes are owned by British companies. Industries like these are likely to form an increasing share of jobs and output in the future.

Other, less glamorous, jobs will also be created in the service sector. Projections from the ONS suggest that the number of people aged 75 and over in the UK will increase from 4.7 million in 2006 to 5.5 million by 2015 (and 8.2 million by 2031) (Office for National Statistics 2007). This will create a significant demand for caring and health service work, with some suggesting the UK will need an additional 1.1 million care workers by 2025 (Eborall and Griffith 2008). The growing number of older people also represents a significant group of consumers, and many companies are looking to enter this market – from designing age-friendly technology to building houses better suited to older people. While the demand for jobs in these areas will increase, there is a degree of uncertainty as to how such jobs will be paid for. The Government's financial position suggests there will be a reliance on private sector provision or a significant change in how revenue is generated, for example placing a levy on inheritance tax to pay for long-term care or requiring pensioners to contribute a lump sum towards care costs on their retirement.⁹

There are myriad other industries lumped together under the heading 'other services' and it is beyond the scope of this paper to assess which might be sources of employment growth in the future.¹⁰ It is clear from the outlook for the rest of the economy that we will be relying on 'other services' (including non-finance business services) for a large proportion of the growth needed to get employment back to its previous peak level.

Self-employment

Since 2001 there has been a disproportionate increase in the number of self-employed: although they were only 12 per cent of the workforce in 2001, the self-employed accounted for 550,000 – 30 per cent – of the 1,830,000 increase in total employment over the seven years to 2008. As a result, they now represent 13 per cent of the total. However, a large part of the increase in the number of self-employed people – 213,000 – was in part-time employment. And almost half the increase in the number of full-time self-employed people is accounted for by two occupations: construction trades and building trades. The outlook for both is relatively poor. Outside these two occupations, there is no evidence of significant growth in the number of full-time, self-employed workers. If self-employment is going to be an important source of jobs growth in the UK during the next recovery, government action may be needed to support its expansion.

9. For details of the debate on paying for long-term care see Hinsliff 2009.

10. However, given the increasing importance of 'other services' to the economy as a whole, we would recommend that the ONS consider breaking down this sector to enable a better analysis of the data and employment prospects.

The jobs deficit

Forecasters suggest that employment in the UK will fall by around 1.25 million between the middle of 2008 and the middle of 2010 and that unemployment will rise to over 3 million. If the economic recovery that follows this recession is to be a 'normal' one, employment will have to increase by the same 1.25 million between mid-2010 and mid-2016, at which point it will be back to its peak of mid-2008.

However, likely trends in key areas of the economy are not supportive of such an increase:

- Employment in the public sector (25 per cent of the total) could decline as the Government seeks to reduce its fiscal deficit once the economy is recovering.
- Employment in financial intermediation (4 per cent of the total) has declined by 42,000 over the last seven years and is likely to continue to decline as financial institutions seek to rebuild their profit margins and adopt a more cautious approach to innovation.
- Employment in wholesaling, retailing, hotels and restaurants (24 per cent of the total) may stagnate if consumer spending increases less rapidly than the total output of the economy
- Employment in construction and real estate (6 per cent of the total) is likely to be held back by an extended period of weakness in the UK housing market.
- Employment in manufacturing (10 per cent of the total) has been shrinking at an annual rate of 3.7 per cent, so just halting this decline in the face of technological change and increased competition from overseas would be a major change in trend.

Of course, there is a danger that these assumptions are too pessimistic. It is all too easy in a recession to see only downside risks for output and employment, yet history shows economies do recover as spending picks up and, after a lag, new jobs are created. This cycle might be no different from others in this respect. Jobs will be lost this year and next but new jobs could be created in following years. In retailing, for example, stores are closing in the recession but new ones will open in the recovery. The very fact that employment funded by government spending has increased so rapidly over the last seven years may have 'crowded out' employment growth in the private sector. If the number of public sector jobs now shrinks, private sector jobs may be 'crowded in'.

However, we have shown that areas where jobs growth has been strong in recent years – such as the public sector and construction – are likely to be much less buoyant. This leaves a lot of slack for other sectors to take up. Table 4.3 presents one scenario of how employment might change over the next seven years, if it is to recover strongly enough to return employment levels to their previous peak and if the economy and labour market are going to end up better balanced.¹¹

11. For an alternative projection, based on value-added rather than employment, see Appendix 2.

Table 4.3: Projected changes in jobs by industry, peak to trough to peak

Industry	Employment (000s)			Change 2008 to 2016
	Mid 2008	Mid 2010	Mid 2016	
Agriculture, forestry & fishing	499	500	500	1
Mining, energy & water supply	198	200	200	2
Manufacturing	3,138	2,850	3,000	-138
Construction	2,252	2,200	2,200	-52
Distribution, hotels & restaurants	7,037	6,700	7,000	-37
Transport & communications	1,872	1,800	1,900	28
Finance & business services	6,668	6,275	6,700	32
Education, health & public admin.	8,009	8,000	7,800	-209
Other services	1,987	1,975	2,400	413
Total	31,661	30,500	31,700	39

Source: Office for National Statistics and authors' calculations

Following the analysis above, this projection assumes there will be fewer jobs in the public sector, retailing and construction if employment returns to its mid-2008 level by mid-2016. It also assumes there will be fewer jobs in manufacturing, though the projected fall is around 0.5 per cent a year, compared with a fall of 3.7 per cent a year in the last economic cycle. Other assumptions are that enough jobs will be created in business services to offset the expected contraction in jobs in the financial sector and that the remaining slack will be taken up by the 'other services' sector.

Service sector jobs are likely to be spread across a range of industries. Some might be entirely new but, for the most part, growth is likely to be strongest in areas where the UK has already demonstrated a comparative advantage, such as media, design, R&D, publishing and the creative industries and in areas that will generate significant demand, such as social care. Meanwhile, the parts of manufacturing that might be strongest could include pharmaceuticals and green technology.

If this projection turns out to be broadly right, the economy will have rebalanced a little. Employment will be less reliant on public spending, the housing market, the City and increasing household debt. However, it is only a projection and it is best seen not as a forecast but as an exercise designed to highlight two uncomfortable truths: first, the scale of the turnaround needed in employment in manufacturing and second, the reliance of the UK economy on non-finance, non-retailing and non-public-sector services for jobs growth in the next seven years.

We believe the right combination of entrepreneurship, a recovery in the global economy and trade and, importantly, government policies can lead to the necessary number of jobs being created across a diverse range of manufacturing and service sectors. The next section looks at the role of government in helping to support jobs growth in these areas.

5. Bringing about a better balance in the UK workforce

- If we are to rebalance the UK economy and return to full employment within a reasonable period of time, government cannot be passive in its approach to the economy. Successful rebalancing will depend on a more active state.
- The choice is not just between 'hands-off government' and 'picking winners' – there are a number of areas where government can support the market without actually owning firms or making investment decisions.
- The role of government in fostering a new economy does not end when the recession does; there is a longer term role for government activism in economic policy.
- The necessary areas for government action over the longer term can be gathered under six headings: innovation, skills, small business growth, high sunk costs and infrastructure, regional policy and a supportive financial services sector. Combined with a commitment to environmental sustainability across all policy areas, action on these issues will help build a more balanced and resilient economy.

Debates have resurfaced in the wake of the economic crisis about the role government should play in shaping the economy. Given the visible flaws of the neo-liberal ideology predicated on minimum government intervention, calls for a more active role for government are strong¹². Yet history also teaches us that excessive Government involvement in the economy, including the nationalisation of industries, can distort the distribution of resources, breed inefficiencies and reduce competitive advantage. A balance, therefore, has to be found. In this section, we outline where we believe this balance should lie and the actions government can take to help the economy achieve more balanced and sustainable employment in the future.

It is clear to us that a more balanced and diverse industrial structure would be beneficial for the UK, offering the potential of higher quality jobs for workers, a less volatile economy and a more sustainable tax-base for the government. But it is unlikely such an economy will develop by chance. If UK companies are to compete in new technologies with the best producers in the world, more government support is likely to be needed. Experience from other countries demonstrates that strategic and active government intervention can help generate innovation and stimulate growth. Germany has invested heavily in generating supply chains and technology to support production in the renewable energy sector and is now a leader in this field (TUC 2009). The US government levered large amounts of money into Silicon Valley where industries are now leaders in business innovation (Wonglimpiyarat 2006). Since the 1980s, South Korea has developed a high-tech manufacturing base virtually from scratch (Gregory 2009). All of these relied on government intervention – but a form of intervention where the state did not assume ownership of firms or make individual investment decisions.

We believe government has to have a vision of the future shape of the economy and target its actions accordingly. At a pivotal point like the present, this is even more necessary. Critics of active government involvement argue that nobody can predict which industries and companies will be successful in the future, and that government should not try to steer

12. Peter Mandelson has been calling for a new 'industrial activism' for example (see BERR 2009).

economic development. While they are right that individual investment decisions are best left to the private sector, they are wrong to assume that this means government should not try to shape the broader structure of the economy and provide a framework conducive to businesses success. In fact, where market failures or coordination problems exist, government intervention is essential to help maximise economic possibilities.

Moreover, although there are many unknowns, some things are predictable. We know that the public sector will be unable to create jobs, in aggregate, as the Government wrestles to reduce its fiscal deficit. We know that Britain will have to be competitive in high-skilled industries, as it will not be able to compete for unskilled jobs with emerging low-wage economies in the developing world. We know that Britain's existing strengths and comparative advantage lie, for example, in the creative and pharmaceutical industries and professional services. We know that oil is finite and prices will rise as supplies run out and alternative energy sources are therefore needed. In this light, it is sensible for government to target its support for industry in particular ways, for example targeting scientific and technological skills and by ensuring finance is leveraged into high-tech and 'green energy' industries.

Critics of active government involvement in industry often present a dichotomy between 'hands-off' on the one hand and state ownership or 'picking winners' on the other. This is too simplistic. Government action will always have a huge impact on the economy: the public sector is the largest customer in the UK, spending about £175 billion annually; it shapes the skills base with a near monopoly on education supply; it provides the vast majority of the country's infrastructure; it taxes and regulates; it builds institutions. In order to ensure strong employment growth that results in a more diverse and sustainable employment base, government must think strategically about how it can influence the economy without actually owning firms or making specific investment decisions.

There is a permanent role for government in supporting industry by providing functions that the market cannot supply. 'Industrial activism', as recently advocated by the Department for Business, Enterprise & Regulatory Reform (now Business, Innovation and Skills or BIS) (BERR 2009), is a move in this direction, but it does not go far enough. BERR's definition of activism suggested government steps in only when markets fail. The implicit assumption is that once things are 'back to normal', the state can once again leave the market to it. As such, BERR's focus has been on 'initiatives' and 'schemes' that can be rolled back once the economy recovers. BERR's rhetoric is also strikingly similar to that of previous governments – indeed Stephen Byers, as Secretary of State for Trade and Industry, declared in 2000 that the Government should have 'an activist but not interventionist' approach to industrial policy – yet significant improvement in this area has not been forthcoming.

One reason for the slow rate of improvement is that policy responses have been based on correcting short-term failures. Another is that there has been a reliance on government making statements and simply expecting businesses to respond – rhetoric has not been matched with the institutions to deliver the required change. The approach we adopt in this paper suggests a more structural role for the state and advocates more permanent institutions and funds to 'fix' this approach in the economy. It appreciates there are always some functions that market forces, driven by the price mechanism and profit-making motive, cannot achieve.

For example, finance for small growing businesses and for investment in new and uncertain technologies is notoriously hard to come by as investors want quicker and safer returns than these allow. Similarly, finance for green technology may be inadequate, as environmental and social benefits will not be calculated in potential profit and because of the risk combined with the large sunk costs of infrastructure. Some firms do not train and improve the skills of

their workforce for fear staff will leave or work for a competitor in the long term. It is in areas such as these that there is a permanent role for the Government. It should ensure structural market failings do not hinder innovation and economic growth.

We have grouped the types of policy the Government can go for under six broad headings:

1. Fostering a culture of innovation
2. Investing in skills and training
3. Supporting small and new business growth
4. Assisting with investment in high 'sunk costs' and infrastructure
5. Targeting regionally balanced growth
6. Recognising the importance of financial services

Running throughout each of these themes is a commitment to environmental sustainability. Creating a 'green' economy is not something that can be achieved through one sector or policy area; it should be integral to all areas of enterprise and policy.

These ideas are developed in more detail below. The policy suggestions included are not meant to be exhaustive or a complete manifesto for change. Rather, they are intended to show the direction policy should take and highlight the strategic role government can play in building a more balanced economy.

Fostering a culture of innovation

The ability of firms and organisations to innovate is critical to the functioning of any economy. To stay at the cutting edge in any sector requires constantly rethinking what you do and how you do it. Innovation can help develop new goods and services, produce and deliver them in new ways and at lower costs. It will be essential if the UK is to generate a more sustainable economy while adapting to meet future challenges including climate change. There is a positive link between innovation and profitability (Lambert and Frenz 2008), and activities such as research and development can generate positive spill-overs to other researchers, businesses and sectors. Innovation can generate jobs directly (for example in the R&D and design industries), and indirectly as new businesses are started and existing businesses become more successful. An economy that can continuously innovate will also be more sustainable, as it can react to changes in the business environment.

Innovation is inherently weakly defined and hard to measure; it captures a whole range of activities that enable organisations to improve the way they operate. It includes everything from developing a new product or starting a new business through to managing a supply chain or delivering a service in a new way. Investment can take the form of tangible assets (for example, in machinery, buildings and hardware) or intangibles (for example, in work organisation, design, R&D, human capital, branding and marketing). In our increasingly knowledge-based economy, investment in intangible assets is essential to stay competitive (The Work Foundation 2008). The exact form innovation takes varies by sector. High-tech industries, such as pharmaceuticals, rely on technology-based innovation and R&D. However, in the creative, retail and financial services sectors, innovation is concentrated in areas such as marketing, branding and business organisation.¹³

13. The Department for Innovation, Universities and Skills (DIUS) notes that: 'R&D accounts for about a tenth of innovation expenditure in the primary sector, construction and retail services. However, it accounts for over half of total expenditure in engineering-based manufacturing and two fifths in knowledge intensive services. In contrast, nearly half of all retail sector expenditure on innovation goes on marketing.' (DIUS 2008: 13)

If the UK economy is to successfully rebalance, innovation will be essential for the following reasons:

- Building on the UK's existing strengths suggests knowledge industries will be increasingly important in the future. Knowledge-based sectors require high levels of investment in innovation and intangible assets.
- Demand for knowledge-intensive services is likely to increase as emerging economies develop and increase consumption; as populations age, generating demand for new services; and as the need for alternative sources of energy increase.
- New technologies will continue to drive economic development, stimulating innovation to stay ahead of the competition.
- Reducing the UK's carbon footprint will require new ways of generating and conserving energy and making, transporting and selling goods. All will require significant research and innovation.
- There will be increasing competition in innovation from China and other economies. R&D is an increasingly global business that pays little heed to national boundaries: foreign controlled R&D in the OECD economies increased by 71 per cent in real terms between 1995 and 2003. China has also seen a sharp increase in R&D investment from overseas (OECD 2006a, Griffith *et al* 2005, OECD 2008). The UK will therefore have to invest in innovation in order to remain competitive and keep activity based here.

The UK's record on innovation is mixed. The UK trails the G7 economies on traditional measures of innovation such as R&D and patenting. R&D as a share of GDP in the UK has declined steadily over the last 25 years. This is particularly worrying if R&D-intensive industries are needed to generate jobs as the economy recovers. However, on broader measures of innovation the UK fares better. For example, the 2005 Community Innovation Survey (which includes a wider number of measurements) placed the UK rate of business innovation close to the European average (DIUS 2008). These results partly reflect the fact that the UK has a high proportion of sectors that are not R&D-intensive and instead innovate in other ways. Nevertheless it is clear that, if the UK economy is to rebalance and grow in the future, its record on innovation needs to be improved.

A number of factors prevent innovation from coming to fruition, some of which suggest a greater role for government in coordinating activity, ensuring a socially optimal level of investment.

First, finance for innovation can be hard to generate. Loans for developing new ideas, processes and businesses are hard to secure. Investment is risky for unproven ideas; there is a long return time on some investments in innovation; development costs are initially high; and new businesses lack collateral for large loans. Funding for investment in intangibles can be particularly hard to secure as banks prefer to fund investment in physical assets that provide better collateral for a loan. This is very concerning given the importance of intangibles to innovation in the knowledge economy.¹⁴

Second, private returns to investing in innovation can be highly uncertain. The difficulties in capturing the returns to investment in innovation reflect the fact that knowledge is non-rival

14. Brinkley notes this was a particularly big problem in Japan in the 1990s as the country struggled to beat deflation and banks were cautious with lending. See Brinkley 2009.

– one person's consumption of knowledge does not reduce the amount available for another person – and partially non-excludable – one person cannot stop others benefiting from their research. There can never be perfect intellectual property rights and knowledge spreads through publications, information networks, observation and so on. This spread of knowledge is good for the whole economy, but bad for providing incentives for individual firms to invest. There is, therefore, a reduced incentive to invest in the socially optimal amount of new knowledge since the private returns are lower than the returns to the whole economy (Griffith 2000 and Bloom and Griffith 2001).

The third set of barriers reflects difficulties in commercialising research. While the UK is good at invention it is relatively poor at the commercial exploitation of new ideas. This is an area we look at below in relation to supporting small businesses seeking to grow.

Since the market cannot provide the socially optimal level of innovation, there is a role for government to address market failures. The current government recognises this and has made moves to support innovation. The flagship innovation policy since 2000 has been R&D tax credits, which have helped deliver more than £2.3 billion of support through almost 30,000 claims. Recent increases in the rate of relief and the extension of the scheme for SMEs should increase the take-up and level of R&D carried out – vital if the UK is to see a growth of R&D-intensive industries such as high-tech manufacturing.

The *Innovation Nation* White Paper in 2008 demonstrated an understanding that innovation is not restricted to R&D and can be encouraged in a broader range of activities. The introduction of 'innovation vouchers', which allow businesses to 'buy' initial engagement with a research institution – usually a further or higher education institute – to learn from their research knowledge or use their infrastructure, and the expansion of Knowledge Transfer Partnerships should help encourage links between researchers and businesses and improve the commercialisation of research. We support these moves and believe there is considerable scope for extending their use – improving awareness, fostering stronger links between business and Further and Higher Education (FE and HE) and recognising that the benefits work both ways – universities have more to learn from business, as discussed below.

Despite these positive moves, there is more that government can and should do to plug the market failures inherent to innovation. In particular, it should move away from a reliance on complex government-administered schemes towards generating independent institutions that can support the market.

One example would be the creation of an 'Ideas Bank' charged with providing finance for innovation, particularly initial research, 'proof of concept' work, university spin-outs and business start-ups and less traditional forms of innovation such as improvements to business organisation and management. This Bank would be managed as a private institution, in recognition that this ensures better investment decisions. However the Government would underwrite a minimum amount of the loans to offset the difficulties associated with long-term investment in unproven ideas.

The Government already acknowledges the benefits of such an approach with its small business loan-guarantee scheme. Rather than seeing this scheme as a short-term 'recession busting' measure, we believe there is a role for an institution to permanently serve this function for new as well as existing businesses. Such a bank could also impose tough environmental standards or provide loans at preferable rates for businesses with a positive environmental impact, for example, only lending for projects that will reduce the UK's carbon footprint, thus encouraging investment in green technologies.

Government can also be more strategic about the way it procures and delivers goods and services. As the largest customer and employer in the UK, the Government can foster innovation through strategic procurement practices (it is not an accident that the UK's strengths in pharmaceuticals, aerospace and digital technologies mirror large government institutions like the NHS, military and BBC). Offering public contracts to smaller firms can help with business development. Some simple measures, including simplifying the procurement process, can help small businesses participate and prosper. Moving government bodies to depressed regions can also aid regeneration and the crowding-in of private investment. Encouraging the private sector to generate new ways of managing and delivering public services, perhaps by offering them the intellectual property rights on any innovation, can both improve service delivery and increase demand for innovation.

The Government could reform the tax and patent systems to provide better incentives to universities and researchers to commercialise their research, allowing the research institutions to harness more of the potential gains from university spin-outs. This has been successful in the US, for example, and is being piloted at some UK institutions.

Regulation can be used to spur innovation by imposing standards on goods and services. This is likely to be particularly important for generating an environmentally sustainable economy. For example, a higher price on carbon could encourage innovative ways of generating and conserving energy – and give firms the incentives and certainty they need to fund long-term investment in this crucial sector. Equally, excessive or misplaced regulation can stifle business growth and there is growing concern that the tax and regulatory system is too complex and places too great a burden on SMEs in particular.

Investing in skills and training

Perhaps the most established government role in the economy is the provision of skills and training. Skills and training are key levers for improving productivity and job creation and lie largely within government control.

Skills are crucial for employment – while nearly 90 per cent of those with graduate qualifications are in work, fewer than half of those with no qualifications are in employment. As well as being a barrier to employment, low skills can lead to low levels of productivity. The Leitch Review of Skills estimates that a fifth of the UK's productivity gap with countries such as France and Germany is due to our skills deficit (Leitch 2006). The benefits of upskilling the UK workforce are huge – with Leitch estimating potential increases in the UK employment rate of around 10 per cent over thirty years if adult skill levels are significantly improved (ibid).

When developing an approach to creating a UK skills-base fit for a rebalanced knowledge economy, the following things are relatively certain and should be taken into account:

- Competition from other high-skill economies will increase in the coming years. Emerging economies, especially China and South East Asia, are improving their skills-base very fast and OECD countries are also increasing skills investment, often from a higher starting point than the UK (OECD 2006b).
- A knowledge-based economy relies more on high-level skills than the economies of the past. Higher intermediate (Level 3) skills and degree qualifications will be increasingly important. The benefits to an individual with high-level skills will increase, as will the penalties for those holding low-level skills.
- The sectors likely to see growth (including high-value manufacturing, digital and creative industries, pharmaceuticals) require 'STEM' (Science, Technology, Engineering

and Maths) skills, which are also crucial to the success of green technologies.

- The UK needs an economy that can adapt to external changes, new business practices and technologies. Flexibility can be derived from transferable skills and the ability to re-train throughout working life.
- Given that three-quarters of the UK's 2020 workforce have already left full-time compulsory education, changes in the school system will not be sufficient to generate significant change in skills composition in the labour market.

Despite the economic advantages from firms investing in skills, a number of market failures prevent the desired level of investment from taking place. The returns to training are long term, especially if training somebody from scratch, discouraging investment. The benefits of training are largely captured by the worker, meaning if they move they take many of the benefits of that investment with them. Training in STEM skills can be particularly costly given the need for equipment and a shortage of qualified teachers. And the supply of information about training needs and opportunities is far from perfect, leading to a problem of coordinating supply and demand.

These factors lead to a 'tragedy of the commons' problem where firms seek to benefit from a pool of talented labour trained by others, without actually investing in training themselves. It is also possible for a 'low skill equilibrium' to develop, where a lack of skills and a lack of skilled jobs become self-perpetuating (see Feingold and Soskice 1988, Aghion and Howitt 1992).

The inability of the market to encourage firms to invest in the optimum level of training can be seen in the data. Around one third of firms do no training at all, and this rises to one half in some sectors (Leitch 2006). There is a particular deficit in technical skills training and training those at an intermediate level (see CBI 2007 survey, cited in Conservative Policy Green Paper 7). The lack of technical skills is especially concerning given the need for them in potential growth industries. A recent report identified a number of skills shortages for firms working in renewable energy production (SQW Energy 2008). Poor levels of basic numeracy and literacy compound the skills deficit at the low and intermediate level – the OECD ranked Britain twentieth for some measures of skills at the intermediate level, lagging seriously behind our principal competitors (OECD 2006b).

Even if the market does provide a pull and a means for people to be trained, cultural and institutional factors often prevent it happening. A cultural shift about the importance of education in the new economy, the need for life-long learning, and a shift in the institutions that provide education, is needed.

Market failures as outlined above, coupled with the evidence of the UK's poor track record on skills, suggest a need for enhanced government involvement in supporting investment in this key area. Lessons have been learnt about the inability of centrally planned skills systems such as the Industrial Training Boards and Manpower Services Commissions of the 1960s and 1970s. Such central 'predict and provide' systems were unable to accurately meet the needs of employers, and training providers simply worked to out-of-date plans.

Consensus is now building following the reviews by Leitch (into skills) and Foster (into the Further Education system) about the extent and direction of reform needed. There is cross-party support for a 'demand-led' system where the skills agenda is driven by employers that need the skills rather than the colleges and universities that supply them. Rather than going directly to colleges, funding is being rerouted via employers and individuals who decide where to spend their funds. The introduction of 'Train to Gain' (where the Government

assists firms to fund their training plans) and of Skills Accounts (where individuals have set amounts to 'spend' on training in the workplace) are attempts to find new ways of articulating and meeting the demand for skills. There has been considerable activity in these areas recently and it is too early to tell whether such programmes will be a success.

Areas for potential government involvement

Any future model must recognise that employers should be expected to contribute most to skills development where they derive the most returns, with government concentrating on those areas where effective incentives are not in place. There is potential for government involvement in several areas.

First, the Government should explicitly target STEM skills. Simply improving syllabuses to make STEM subjects more attractive is not enough. Increased contact time in these subject areas, perhaps by extending the school day or weighting timetables towards them, may be required. Targeted funding in FE and HE, such as more generous loans and bursaries for those studying STEM skills, should also be considered.

Second, a radical shift in the provision of further education is needed to encourage life-long learning. A key feature of tomorrow's capitalism will be that people continue learning throughout their careers in order to improve their skills and adapt to new business realities and technologies. Provision therefore has to be designed to meet the needs of adult learners with jobs and families, who will require the ability to dip in and out of courses throughout their career. A nationally recognised credit system for courses in all areas of the country and all education institutions (where different courses receive a credit which is transferable across all institutions), would help enable this. Such a credit scheme could also include employer-based learning. FE funding is currently geared to producing formal qualifications requiring long periods of study. We believe funding requirements should be relaxed to encourage the provision of shorter courses.

The cost of studying as an adult is also a barrier. Part-time courses are particularly costly, as upfront fees are required and maintenance support is much harder to come by than for full-time study¹⁵. We believe adult students on part-time courses should have the same entitlements to support as those on full-time courses. The student loan scheme should be made widely available for those studying part-time later in life, as a way of encouraging and funding continuing learning.

Third, the emphasis on intermediate training should be extended from achieving Level 2 skills to achieving Level 3 skills. In many areas, the Government's focus is only on Level 2 – for example it will meet the full cost of an over-25-year-old taking an initial Level 2 course, but only 50 per cent of the cost if they take an initial Level 3 course. It provides Skills Accounts for some individuals, but only to fund up to Level 2 qualifications. Equally the 'Train to Gain' and apprenticeship schemes are targeted towards Level 2 learning. In all these areas government provision should be extended to Level 3 learning, since this is the level of skill that is likely to be required in an increasingly knowledge-based economy and is consistent with extending the school leaving age to 18.

Fourth, more effective ways of encouraging firms to invest in skills must be found. Leveraging employers to invest in training and skills is both the cheapest and most effective way of ensuring skills training matches the needs of employers. While the 'Train to Gain'

15. The combined FE and HE budget for maintenance support for part-time study is £100 million, compared with £4.2 billion for full-time students (Liberal Democrats 2009).

scheme was a step in this direction, it is becoming apparent that government funds are being used to pay for training that firms would have done anyway without extra funding¹⁶. Train to Gain should be better targeted. Stronger involvement of trade unions could also help increase pressure on employers to provide training. The success of Union Learning Representatives demonstrates the important role trade unions can play in the skills agenda: a recent survey found that more training was provided in workplaces where training was negotiated as opposed to where it was merely subject to consultation (TUC 2006). Including training in collective bargaining legislation could increase the pressure on employers to invest in skills.

Fifth, there need to be stronger links between educational institutions and employers. One barrier to employers getting involved in training is that they are not consulted about the design of courses or qualifications. Allowing Sector Skills Councils to accredit vocational courses, or approve the content of courses, would help generate more support from employers in the FE and HE systems. Evidence also suggests that university accredited courses that are delivered through the workplace can be an effective way to ensure training is targeted to business needs. For example Marks and Spencer's 'Foods Unwrapped Programme' used a mixture of university, in-house and external training providers to train 1,500 managers. The project was modular and part-time, meaning people could fit it around their other commitments, training was aligned with business-critical functions and company targets and the employees received a university-accredited qualification. On all measures, the programme was deemed a success – from increasing sales, to staff transferring knowledge to other employees, to fostering a better work culture and peer support (Naish 2009). Government bodies, such as the Regional Development Agencies and Learning Skills Council could actively be involved in facilitating such business-university links.

Finally, more needs to be done to encourage the expansion of apprenticeships and technical learning. Apprenticeships have become something of a touchstone for wider debates about the failures of the British education system. They are important because technical skills will be required in a rebalanced economy, and because those who do not go to university often have their potential wasted through there being a lack of other training opportunities.

A number of barriers exist for firms wishing to offer apprenticeships and these could be removed. A much simpler process of accreditation and inspection, each involving one body, would help remove complexity from the scheme and reduce the number of government bodies firms have to deal with. Barriers to students wanting to undertake apprenticeships could also be removed. For example, funding and access to loans for apprenticeships should be equivalent to those available in the HE sector. A national qualification should result from apprenticeships that can be recognised and transferred across other areas of the education system. A national application system for apprenticeships similar to UCAS would more effectively match supply and demand (some moves in this direction have been made following the establishment of the National Apprenticeship Service). The public sector, as it is by far the largest employer in the UK, also has a massive opportunity to directly increase the supply of apprenticeships.

Supporting small business growth

The jobs of the future will be created in new and existing businesses with good ideas, backed up by management capability, skilled workers and access to finance. Many of these jobs will be in small firms, or in firms that do not yet exist.

16. As argued by both the Liberal Democrats (2009) and the Conservatives' Policy Green Paper 7.

Already half of the UK's workforce is employed by small businesses. This share is likely to increase in the years to come. The sectors where the UK economy is likely to expand – non-financial business services, knowledge-based, technology and creative industries – are over-represented by small businesses compared with the whole economy. Moreover, SMEs in the UK labour market made a disproportionate contribution to new employment growth in the late 1990s. This is not surprising. The de-industrialisation of the UK economy has resulted in a shift away from big industrial plants and towards firms that rely on knowledge and ideas to grow and succeed (see Brinkley 2008b). These sorts of firms benefit less from scale economies than manufacturing or mass production businesses do.

As emphasised in Section 4 of this paper, the UK economy is likely to go through a process of structural change in the next few years as some sectors contract and others expand. This will create opportunities for new firms – for example in developing technologies in green energy. More generally as the allocation of resources shifts from financial services, government and retail, there will be more capital (physical, intangible and human) available to new industries and businesses. The potential for small businesses will also grow as globalisation and technological progress mean that even the smallest of firms can access global markets.

The UK's record on entrepreneurship is mixed. The country has a higher proportion of people working for large firms than most European countries, and is mid-league for self-employment and business ownership rates. In measures of 'entrepreneurial spirit' the UK scores less well than its major competitors. However, there were a record number of businesses in the UK – 4.5 million at the start of 2006. Moreover, the UK is regarded as having the lowest barriers to entrepreneurship in the OECD, ranks second in Europe and is in the top ten globally as a place that is good to do business. The UK's finance market is ranked third in the world for supporting business (see HM Treasury 2008 for a summary).

While overall the UK is regarded as a world leader in terms of business finance, the evidence suggests that small firms face particular difficulties in accessing finance. This is most acute for high-tech start-up firms and university spin-outs looking to grow.

When asked directly, most businesses say they want government to stay out of their way. But dig a little deeper and it becomes clear that businesses see government playing an important role in terms of providing high-skilled workers, infrastructure and support for investment, including in R&D. Moreover, businesses tend to require more support at the outset of their lives, so government policy towards supporting small business and getting businesses off the ground is particularly important.

Given the upheavals in financial markets through the credit crunch, the challenges in accessing finance are only likely to increase in the future.¹⁷ Further to our proposal for a government-backed 'Ideas Bank', here we focus on the biggest challenges in accessing finance, and also the sector with the most potential in terms of generating new ideas – university spin-outs.

17. As an aside, Hanley *et al* (2006) use empirical evidence to show that the effect of merger activity in the banking sector results in higher margins charged by the banks as they use their market power to increase returns. This suggests that recent bank mergers through the credit crunch could prove costly for small businesses and suggests that Government will need to keep a close eye on lending decisions and interest rates charged to small businesses to ensure that the result of the bail-outs of some of the UK's biggest banks does not restrict competition and access to finance to small businesses during this critical period for the UK economy.

Two related problems are evident in accessing finance: accessing seed-stage, proof of concept funding and new technology firms securing venture capital (VC) funding. These problems are particularly worth noting as knowledge-based technology firms are one of the sectors where we believe the UK has a comparative advantage and opportunity to grow.

Potential university spin-outs cite access to venture capital as the most important barrier to growth, with other barriers to finance also scoring highly (Wright *et al* 2008). The costs to VC firms in researching business plans involving new technologies or ideas can be prohibitive and the ability of the spin-out to put together a business plan at an early stage before the opportunities are clear is difficult and can deter investors and potential spin-outs. This can prevent good ideas from getting beyond the research laboratory.

While government has made money available to leverage venture capital, the financing of seed-stage development remains a problem, particularly risk capital in the £250,000–£2,000,000 range (DIUS 2008). Universities could be given greater independence and encouragement to use debt finance to fund initial development of potential spin-outs. Additionally, government could set aside some of the venture capital from the successful DIUS University Challenge Fund (UCF), specifically for this early stage support, in order to leverage VC money in to this sector.

To ensure business ideas are in a position where they can access venture capital, university spin-outs need to be 'business-ready' – they must have a business plan and management know-how to pull this together. Evidence from Wright *et al* (2006) shows that universities most active in spinning out ventures were significantly more likely to understand the importance of being business-ready – for example, they were more likely to find managers and budgets to help with business planning, use patents and patent attorneys, and use academic secondments to the business sector to enhance skills and capability. But this is the exception rather than the norm in the UK.

At the start of this section we emphasised the value that Innovation Vouchers can provide to businesses that might need to access technical know-how from a university or college. This scheme could be reciprocal. As well as businesses being able to use vouchers to access academic expertise, universities should be able to use innovation vouchers to buy in management know-how to help them turn their own ideas into viable businesses, or at least, take forward ideas to see whether they have that potential. In addition, the use of the UCF could be extended so that the funding it provides from government can be used to buy in management expertise.

In the US, the Government played a key role in kick-starting the creation and development of new high-tech, internet start-up companies, particularly in Silicon Valley. The growth of this sector relied on complementary strategies: two excellent outward-looking universities, a venture capital industry and patent lawyers, successful university spin-outs, technological and managerial know-how and a culture open to new ideas. The success of green technology industries is likely to depend on the same sort of complementary strategies that made Silicon Valley a success. The New and Renewable Energy Centre in Blyth, which provides a platform for R&D in renewables, and One NorthEast's decision to create 'Centres of Excellence', which link firms with researchers in the field of green technology, offer some practical examples of what is possible.

The Government anticipates the environmental goods and services market will grow from £25 billion in 2005 to £46 billion by 2015. However, there is nothing inevitable about the investment and jobs coming to the UK. High skill jobs, like jobs in any new technology, will be highly mobile, and as such will go to the country or region with the best business

environment. Efforts to support business enterprise and entrepreneurship – including investment in the research base, access to funding, management expertise, a stable and relatively supportive tax framework, a highly-skilled workforce and incentives for investment in research and development, and networks of similar firms and academics, will all help attract and keep firms in the UK.

Clusters are a key component of the success of this approach.¹⁸ Government should focus on removing barriers to the growth of clusters – including addressing difficulties around the planning process to enable science parks to grow and reap the benefits of knowledge concentration and spillovers.¹⁹ Government can also help with the costs of infrastructure. In deprived communities, the Government has set up Enterprise Centres to give small businesses access to office space, meeting rooms and technologies at highly subsidised rates. A similar scheme could also be employed in supporting clusters of firms where there are high costs of equipment, technologies and other infrastructure, especially where it can be shared between different firms and scientists. This might be appropriate in the green technology industries and also, for example, in the film/production sectors. Such clusters and shared facilities could be put together with support from the RDAs and the higher/further education sector to get maximum benefit for the business sector and local community.

Although businesses want freedom to innovate without government intervention and too much regulation, government does play a key role in providing the environment in which business can succeed.

Assisting with investment in high 'sunk costs' and infrastructure

As the bedrock on which an economy is built, infrastructure enables businesses to grow and operate effectively. Evidence suggests that those countries that invest early in infrastructure subsequently pioneer new growth sectors (Digital Britain 2009). Having the appropriate infrastructure in place is, therefore, essential for securing future growth, innovation and competitive advantage. As well as an enabler of growth, infrastructure spending is itself an important part of the economy and source of jobs.

Just as the benefits of an effective infrastructure are clear, so are the disadvantages of having a weak infrastructure. Poor or out-of-date infrastructure can act as a drag on competitiveness as firms decide to locate elsewhere, or operate inefficiently and are prevented from innovating. One of the explanations for why countries such as France and Germany have higher levels of productivity than the UK (despite having less flexible workforces) is that they have superior infrastructure (Helm 2008). Old infrastructure can also serve to channel an economy down certain paths. For example, the fact the UK's national grid is built around large centralised power stations has made it complicated to generate energy from renewable sources, which tend to require smart and localised energy grids.

The scale of restructuring required to rebalance the UK economy will necessitate large investment in infrastructure and assets, which in turn will generate future output and competitiveness. The vision of the economy identified in this paper will require particular forms of investment. It is clear that knowledge-based manufacturing and services will require fast and reliable digital technologies and broadband access (with average speeds of at least 20 mega bits per second) in order to manage value chains and deliver new services and

18. See, for example, Abramovsky and Simpson 2009 on how knowledge firms benefit from 'clustering' around research institutions to access spill-overs and mutual support.

19. For example, Government could tackle NIMBYism by offering to share the proceeds of growth with local residents.

products. Communications infrastructure will also need to be increasingly wireless and mobile to allow for flexibility. The UK's energy infrastructure and building stock will need to be better able to support renewable energy generation, including smaller and smarter grids and offshore wind farms linked directly to the national grid.

If manufacturing and production is to be encouraged to come to, or stay in, Britain, then considerable investment will have to be undertaken in the high-tech machinery required by modern factories. If cities and clusters are to be the engines of a knowledge-based economy then effective intra-urban transport systems will be required. If the economy is to be more geographically balanced then the poor state of transport in core regional cities relative to that of London will have to be addressed. Much has been done in this area in recent years, for example the development of the new international terminal at St Pancras and the upgrading of the West Coast line. And more is planned – Crossrail and a high-speed rail link between London and Birmingham, for instance. It is important that this momentum is not lost now that the outlook for public spending has worsened.

Despite the investments in schools, hospitals broadband and some areas of transport over the past ten years, there has been systematic under-investment in other areas. Those that have seen significant investment will also face future challenges and the need for upgrading. As Dieter Helm argues:

‘British infrastructure is widely regarded as poor, and in some cases dire. Few would argue that Britain's infrastructure is fit for the purposes of the 21st century, few international companies would be attracted to Britain because of the quality of its infrastructure.’ (Helm 2008: 2)

A number of factors have contributed to Britain's weak infrastructure – some of these are political and others inherent to the market – but it is within the remit of government to help provide solutions to all.

The first problem leading to a lack of investment in infrastructure is a simple political decision to place infrastructure funding low on the government agenda. Throughout the 1990s Britain spent 1 per cent of GDP on infrastructure compared with over 1.5 per cent by France and Germany, and as such historically has lagged behind its European competitors (Marshall 2009: 2). While spending has increased during the current decade this has almost all been in the form of government grants and cannot be relied upon following the dent the recession has placed in the public finances. The Institute for Fiscal Studies (IFS) predicts spending on transport investment could fall by 4 per cent in real terms each year between 2011 and 2014 (IFS 2009).

The second problem is also political in nature. The fact that infrastructure investment decisions are overwhelmingly made and funded by central government can lead to poor investment decisions. Money can be channelled to particularly popular or noticeable projects, local governments can be left powerless to input their knowledge and resources, and money does not always go where it would be most economically valuable. Better ways of making investment decisions are crucial if funds are to be spent in the most effective way.

A third set of problems centres on the ability of capital markets to fund infrastructure and assets that represent large sunk costs for companies. Such major projects usually require considerable forward funding and have very long return times. For example, Next Generation Access fixed broadband networks can typically have payback periods of seven to ten years. It can therefore be hard to convince firms to make investments, especially if there is a risk they may not capture all of the long-term gain. In the case of broadband networks, telecom companies are granted licences to use the digital infrastructure but the licences are for short

periods, meaning there is no incentive to make long-term investments in that infrastructure, since any gains from such investments cannot be realised in the time their licence runs for (Digital Britain 2009).

The high costs, long return times and uncertainty over infrastructure investment often lead firms to rely on existing infrastructure and assets rather than investing in new and improved ones. The fact that infrastructure and assets represent relatively inflexible projects also means firms have to be extremely sure of the future benefit of what they are investing in – there is an unusually high risk involved with many new projects – perhaps generating more cautious investment decisions than in other areas.

There are a number of ways in which funds for investing in infrastructure could be generated and better marshalled to important projects. The Centre for Cities has called for an Urban Transport Investment Fund to be created with initial deposits from central government, private investors and any local authorities wishing to draw on the fund (Marshall 2009). In the US, the National Infrastructure Bank Act of 2007 proposed setting up a bank that would operate along similar lines to the World Bank, to help major projects get off the ground. These proposals were given more weight when President Obama mooted the creation of an infrastructure bank with up to US\$60 billion at its disposal (Ehrlich and Rohatyn 2008). On this side of the Atlantic the European Investment Bank, which raises funds on the capital markets through a mixture of commercial paper and bonds to lend on favourable terms to projects that fit its objectives, has largely been heralded as a success.

The benefits of schemes such as these are clear. They remove the decision-making about investment from political interference and prevent it from being tied to the electoral cycle. Those wanting to invest in infrastructure can borrow long-term against future income streams rather than providing money at the point of bidding for a project (for example, recuperating their costs by user-charging or by capturing increases in business rates and land rent). A bank could attach criteria to the loans they make, for example only lending to projects that will not increase carbon emissions or that can be proved to meet certain wider objectives. A bank would be better at attracting private capital as it could sell securities and issue bonds, as well as because its investment decisions would be better trusted. And a bank could also have a hybrid governance structure, ensuring that all levels of government and the private sector have a stronger voice in how it operates.

Another way of increasing investment in infrastructure would be to decentralise parts of the planning and funding process – giving cities and regions more tools with which they can plan, fund and deliver projects, for example by allowing cities to issue bonds and directly electing mayors²⁰ to give city-regions more political muscle.²¹ Giving local government the means with which to effect change would help harness the skills, potential and knowledge of those working below the level of central government.

Access to long-term finance will not by itself solve the uncertainty that dogs infrastructure investment. Sometimes clearer signals from both government and the market are required. The benefits of a clear signal from government were seen when it announced it would enforce the 'digital switchover' for television – once a minimum level of coverage had been reached – spurring private investment in the UK's digital network. In some cases a political

20. As argued by ippr (Kenny and Lodge 2007).

21. The Centre for Cities has long been calling for more devolved powers. See www.centreforcities.org

signal is not enough and a price signal is needed to help generate investment, for example by increasing the price of carbon in order to encourage investment in renewable energy infrastructure. Local communities and RDAs can also help to build certainty into a market by collectively committing to using a new good or service that requires large infrastructure investment, for example committing to new broadband services by including them in regeneration strategies (see Digital Britain 2009: 24 for examples of this in action).

As well as intervening in supply-side factors, the Government can also bring its weight to bear on demand-side factors. The considerable combined purchasing power of government departments and the way in which public institutions operate can generate demand for new infrastructure. For example, by offering superior and additional content on digital channels, the BBC can drive the demand for broadband, or by guaranteeing public institutions will buy energy from renewable sources, the Government can drive demand for new energy sources and infrastructure.

There is, therefore, a considerable amount the Government could do to improve investment in sunk costs and infrastructure. However, it is worth noting that any government expenditure on infrastructure will have minimal impact until the flow of finance for utility companies improves following the credit crunch. Dieter Helm argues that the financial crisis has had a particularly severe impact on utility companies because of the way they are regulated (Helm 2008). The use of a 'weighted average cost of capital' by regulators to determine the allowed rate of return on investments has proved problematic as the cost of debt has risen during the financial crisis. The result is that the allowed rate of return set by regulators is now below the cost of capital for many marginal investments. As such, capital programmes will be pruned back – despite government spending – until the regulation is adjusted to ensure the allowed rate of return is higher than the cost of capital. Therefore, we face the potential of a sharp contraction of expenditure across the infrastructures. Addressing the credit crunch in utilities is of up-most importance before the larger structural programmes advocated in this paper can be achieved.²²

Targeting regionally balanced growth

Over the last 30 years there has been a mismatch in where jobs have been lost and created: industry in the North has lost out to services in the South. The imbalance in the economy is regional as well as sectoral, with regions such as the North East and the East Midlands lagging behind the South in terms of productivity, value-added, and employment (HM Treasury and DTI 2001, HM Treasury *et al* 2007, Tomaney 2009). The recession appears to have exacerbated this imbalance. Despite initial claims that the credit crunch would precipitate a southern 'white collar' recession and force a natural rebalancing of the regional divide, as demonstrated in Table 5.1 jobs have actually been lost faster in the West Midlands, Yorkshire and Humberside and Wales than in the South.

If the UK is to build a more sustainable and balanced economy, we must pay attention to narrowing the regional divide. A regionally balanced economy can help create a more varied industrial base and prevent over-dependence on one sector. If economic growth is spread across the regions, spill-overs can be maximised, increasing overall productivity. Also, some regions have assets or competitive advantages in specific sectors that are not currently being used to full effect. It also provides inter-generational equity by ensuring people are not disadvantaged in the labour market according to the region in which they are born.

22. For a detailed discussion of how regulation could be adjusted see Helm 2008.

Table 5.1: Unemployment rate change, by region

Region	Change in unemployment rate Feb-Apr 2008 to Feb-Apr 2009 (%)
West Midlands	+2.8
Yorkshire & Humber	+2.6
Wales	+2.4
Scotland	+2.2
Northern Ireland	+2.1
North West	+2.0
East Midlands	+1.9
South West	+1.7
South East	+1.7
East	+1.5
North East	+1.2
London	+1.2

Source: Office for National Statistics Regional Monthly Data available at: [available
www.statistics.gov.uk/StatBase/Product.asp?vlnk=15084](http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15084)

Government should address regional imbalance in two ways. First, it should recognise that national policies can have unintended regional effects. As Hudson argues, 'apparently spatially blind national policies have strongly differentiating effects on the economies of different cities and regions, above all favouring the South East' (Hudson 2009). The shift to financial services, encouraged by the introduction of 'light touch regulation', was an apparently spatially blind policy, yet in fact it privileged the South East with its established financial sector, legal services and communications infrastructure. Similarly, the shift to high-tech knowledge manufacturing has privileged certain regions (the Cambridge to Oxford Arc and the M4 corridor in particular) due to the presence of strong science universities and communications links to other global innovation centres. Government must therefore consider strongly the regional impact of the national policies it implements.

Second, the Government should continue to make the case for regional level intervention and strengthen institutions, especially the Regional Development Agencies. The introduction of RDAs was a positive move in regional policy, because it signalled a shift away from trying to redistribute economic activity from thriving to depressed areas (a zero-sum game in terms of productivity), towards trying to stimulate growth in regions lagging behind the national average (Tomaney *et al* 2008). While some things, such as regulation, can only be dealt with at a macro scale, a number of actions can be taken at the regional level.

Regions have different assets and should play to their strengths. For example, the North East has the potential to gain from offshore wind energy generation as it can use existing offshore infrastructure, skills, technologies and businesses established from the oil and gas industry. The South West has a strong aerospace industry, partly on the back of a large military presence, and could gain from innovation and high-tech manufacturing in this sector. The Leeds city-region has strengths in finance. Not every region should pursue the sectors currently being promoted by BERR; they should be strategic in their development choices, rather than following 'fashions'.

Regional Development Agencies can help coordinate economic activity. This can translate into bringing activities under one roof (such as inward investment promotion and provision of investment incentives). By bringing institutions and businesses together in new and

productive ways (for example the London Development Agency has pioneered seminars where SMEs can learn from large companies) and positively supporting clusters, RDAs can be a vehicle for bottom-up development, drawing on local expertise and knowledge when creating policies, for example the development of Regional Skills Strategies. Regions could also be consulted on aspects of competition policy, for example on specific bids for mergers and acquisitions, since business restructuring can have profound localised effects (Tomaney *et al* 2008; see also Ashcroft and Love 1993).

Recognising the importance of financial services

While the problems at the heart of the current crisis have their roots in banking sector excess (coupled with global macro-economic imbalances), it would be wrong to write off the UK's financial services industry. The City of London, and the associated investment banking, insurance and fund management sectors in particular, have the potential to be a source of future jobs growth. There is plenty of evidence to suggest that London, and the UK more widely, has a comparative advantage in financial services and it is one that will need to be fully exploited if the economy is to return to full employment. As well as financial services being a potential source of jobs directly – and indirectly through sourcing services from other industries such as legal services, catering, cleaning and so on – the credit crunch has also revealed the extent to which all jobs, in all sectors, depend on having a healthy, trusted, banking sector. Therefore the future strength of this sector is a necessary condition for a strong economy overall.

The latest edition of the Global Financial Centres Index, says that London is still the world's number one financial centre (with Edinburgh and Glasgow also in the top 50). The survey argues that 'London and New York ... remain the only two truly global [financial] centres' (Global Financial Centres Index 5, March 2009). It also suggests that the gap between London and New York and other centres has widened during the financial crisis, as investors pursue a flight to safety.

A recent review of the financial industry (Mayor of London 2008) identified four strengths that have underpinned London's leadership:

1. A supportive tax, legal and regulatory context
2. The capital's attractiveness as a location for leading corporations and financial institutions
3. Effective systems and support services, including technology, media and professional services
4. A deep talent pool and welcoming culture.

Although the regulatory framework needs overhauling, as part of an internationally coordinated move to clean up the sector and restore trust, the other conditions that make London, and the UK, a good place to do business in financial services will continue post-recession. With continued investment in skills and infrastructure and by ensuring that regulatory reform is global, UK financial services will recover in time. Moreover, it is worth noting that financial service includes businesses as diverse as retail banking, asset management, insurance, investment banking and shipping. While banking has been particularly impacted by the recession, insurance, shipping and asset management remain strong.

However, despite the potential of the UK financial services sector, its future success is by no means assured. Specific action, especially from within the industry, is needed, coupled with national and global regulation to build a principled capitalism.

The principles of regulatory reform have been outlined by the Chancellor and the Financial Services Authority. Global reform underpinning the domestic approach was set out in the G20 communiqué. Flesh now needs to be put on those bones. Several priorities should be pursued with vigour.

First, transparency must be increased. Minutes of the remuneration committees of banks should be published so we can evaluate pay and bonus structures and the FSA must give greater challenge to pay structures that could drive dysfunctional behaviour – for example, encouraging short-term risk-taking rather than long-term value creation – risking the systemic health of the economy. In addition, shareholder votes should be more than just indicative and company Annual General Meetings should become more than just box-ticking exercises, so that investors can play an active role in managing the institutions they own in the interests of shareholders.

Banks must also have Boards that are more representative of the communities they serve to enable greater challenge of the usual way of doing business. Board members picked from a small pool of City-types are not likely to challenge each other in the way that more independent members with different perspectives and experiences might.

Second, the shadow banking system must be brought in to the network of regulation. Hedge funds and other non-banks that perform the same functions as banks should be regulated as such. If bank regulation is strengthened it would be madness to allow the shadow banking sector to continue with business as usual.

Third, and as advocated by Adair Turner and Paul Tucker, the regulation of banks must be focused on making them more resilient to shocks, for example, by reforming liquidity rules and capital adequacy requirements. In the good times, banks should be required to build up a cushion of capital upon which they can draw down during the tough times (before coming to the Government for rescuing). However, from this crisis it has been clear that capital is necessary but not sufficient. The beginning of the UK crisis was a liquidity problem at Northern Rock which resulted in a run on the bank. To address this problem, banks should put aside a certain amount of liquid capital so they do not face liquidity shortfalls which can lead to bigger problems, in terms of confidence and solvency.

Fourth, banks and hedge funds have created increasingly complex products – upping their leverage and reducing transparency. Although such products, particularly Collateralised Debt Obligations (CDOs), were supposed to reduce and spread risks, they ultimately contributed to the downfall of the system. The FSA, investors and shareholders should encourage the simplicity of products, which are understood by traders and their regulators. If regulators do not understand the products, banks should not be able to sell them. And regulators must be more robust in standing up to senior management and boards of banks to say when they have got it wrong. Similarly, retail deposits should not be invested in overly-risky financial products that are unsuitable for small retail savers.

Lastly, credit rating agencies should be reformed – those paying for their services should be investors rather than the issuers of debt. The current system creates conflicts of interest that are damaging to information available to market participants and ultimately to the decisions of investors.

These reforms will work best if they are coordinated internationally, and if they are backed up by institutional reform to stop any back-sliding as the horrors of this recession are forgotten. If these reforms take shape it will put the industry on a sounder footing for future growth, making it more resilient to shocks and more trusted by investors and customers.

A sector that has had particular trouble accessing finance has been green technology. Opportunities exist here for financial services to diversity into a niche, but growing field. Despite government renewables targets, the renewable energy sector has been hit particularly hard by the lack of credit (coupled with a drop in the price of energy). Shell and BP have both cut back their investment in wind and solar technology, Iberdrola Renewables announced it is cutting investment in the UK by 40 per cent and Vestas is to close the only wind turbine manufacturing plant in Britain.

It is clear that Government targets for increasing renewable energy are not a strong enough signal. Stronger price signals will be needed to leverage finance into this important sector, which, in turn, will generate jobs. Raising the price and tax on carbon, introducing minimum prices for green technologies and providing sustained low rates of interest on loans for programmes that improve energy efficiency should all be used. Similar schemes in other countries appear to work, for example Germany provides low-interest loans for older properties to reach new-build energy efficiency targets and guarantees four times the market price for anyone generating their own energy by using solar panels and wind turbines. There is considerable scope for City jobs to be created in 'carbon finance' using existing expertise in finance to diversify into a new business opportunity (Hines 2009).

A new financial system that is more robust to the economic cycle, less likely to cause systemic problems and more able and willing to lend to businesses of the future is an essential ingredient in building the new economy.

6. Conclusions and recommendations

We have set out in this paper the scale of the challenge that the UK economy faces in the next few years in creating jobs and rebalancing to become more sustainable.

Employment growth in the 2000s was built on a narrow concentration of industries – specifically government, retail, construction and finance. This added to the vulnerability of the economy and potentially makes restoring growth harder. It is clear that job creation in the recovery is going to have to come in different sectors – as the Government and households try to rebuild their balance sheets and pay down debt.

It is possible that 1.25 million jobs will be lost during the recession. History suggests it could take eight years – that is, until 2016 – to get back to peak employment. Given the social and economic costs of unemployment, we would like this adjustment to happen sooner but the nature of this recession – an asset price bubble and credit crunch – seems to make it unlikely that this will happen. Left to its own devices, the market may not create a strong, sustainable economy operating at full employment and we think there is a role for government in helping to build an economy that is stronger and better balanced.

The two extremes of a completely hands-off government and one that tries to pick winners are not realistic options. The existence of extensive market failures in providing skills training, investment in research, finance for new and innovative businesses and investment in big-ticket projects suggests an important role for government. This is especially relevant in the sectors that have the potential to grow in the future. The knowledge-based, creative, high-tech manufacturing and green industries, for example, all require heavy investment in skills, innovation and capital infrastructure.

Although we welcome the new ‘industrial activism’ called for at BERR, we believe government should go further than currently envisaged. The enhanced role of government in fostering a new economy does not end when the recession does, as we think BERR initiatives suggest. We see a longer term role for government activism in economic policy and building institutions in crucial areas: innovation, skills, small business growth, regional policy, a supportive financial services sector and investment in sectors with high sunk-costs. Combined with a commitment to environmental sustainability in all areas, this activism will help build a more balanced and resilient economy.

We do not offer a definitive list of policies but we do offer a new approach to institutionalising government involvement in enterprise, jobs, business finance and skills. This approach focuses on the need for thinking about the economy in a more strategic way – at a micro as well as a macro level – openly targeting sectors and skills where we have a comparative advantage. It identifies market failures and directly steps in to tackle them over the long term.

However, although we provide concrete policy proposals below our approach is not meant to be a piecemeal one. This is not a pick-and-mix set of policy recommendations. Investment in training, R&D and infrastructure are mutually re-enforcing and complementary and investing in one without the others will not generate the benefits that can be realised from a joined-up, holistic approach.

Unless Government pursues such a strategy, we fear that the economic recovery will both take longer and be built on less solid foundation than if it does act. Doing nothing would also risk recreating the imbalances that have made the effect of the global recession so serious.

Policy recommendations

We do not claim to offer a comprehensive set of policy proposals in this paper. Rather, we set out a way for government to consider its involvement in the economy. However, we do make a number of recommendations for government action based on the challenge of creating 1.5 million new jobs in sectors in which the UK has a comparative advantage, while also recognising market failures and coordination problems that mean that such a re-balancing will not happen by chance.

Our key recommendations are as follows:

- An Ideas Bank should be created, leveraging private sector, specifically venture, capital money to help businesses grow and provide jobs for the future.
- Government procurement rules should be simplified so small businesses can access this large potential market.
- The intellectual property framework needs to be improved to encourage scientists and innovators to spin-out existing ideas from research laboratories to the shop floor.
- A long-term carbon price should be set and the cost of environmental polluting should be increased to encourage investment in new, green technologies.
- Government could do more to increase the demand for the STEM subjects (Science, Technology, Engineering and Maths) by giving greater subsidies and funding to those studying such subjects. They could also improve supply by investing more in the human and physical capital to teach such courses – in schools, further education colleges and universities.
- A reinvigorated approach to life-long learning and training could be fostered through a national system of transferable credits for all university, FE and work-place training courses and by not penalising FE colleges for running shorter, modular courses.
- The student loan scheme should be extended to adults on part-time courses and funding barriers removed to those studying for a second qualification.
- Training should form part of the collective bargaining process, bolstering the power of union learning-representatives to demand training.
- Government funding for Skills Accounts and Train to Gain should be extended to fund Level 3, not just Level 2, qualifications.
- Business involvement in the syllabus and accreditation of courses to improve their relevance and status should be a matter of priority, for example through the Sector Skills Councils or business organisations such as the CBI.
- Funding and access to loans for apprenticeships equivalent to those available in the higher education sector must be introduced to show the value attached to such qualifications and improve the take-up of apprenticeships.
- A national qualification for apprenticeships, recognised across the education system, is required as part of a commitment to lifelong learning topped up through a person's career and portable across sectors and firms.
- Government should leverage venture capital to support university spin-outs and new businesses, earmarking some of the University Challenge Fund money for pre-business, seed development.

- Innovation vouchers are an exciting addition to policies to enhance business-university links. The vouchers should work both ways so universities can 'buy in' expertise from the business sector.
- Government should use RDAs, planning rules and investment in science and technology to encourage 'clusters', especially in the green economy, recognising the importance of coordinated support.
- Government should support RDAs and give them more power to coordinate economic activity at a regional and city-regional level.
- A national 'infrastructure bank' should be created, modelled along the lines of the European Investment Bank, but with initial deposits from central and local government.
- More power should be given to cities and city-regions to fund and deliver infrastructure projects, for example allowing them to issue bonds and directly electing mayors to give city-regions more political muscle.
- Government should commit to spending a greater share of GDP on infrastructure investment.
- All regions should play to their strengths and not just follow the latest fashion, thereby helping to build a sectorally and regionally balanced economy.
- Regulatory reform of financial services is required at a national and global level to rebuild trust.
- A carbon-finance sector will grow in the years to come. The UK's strengths in financial services could be leveraged to support this emerging industry with its need for long-term investment finance in new technologies.

It is important to note that the six areas for action discussed in this paper should not be seen as a pick and mix list of policy ideas. Action in one area is not likely to generate improvement unless action is taken in the other areas, too. For example, it is not sufficient to invest in improving skill levels without also increasing the demand for skilled workers (by increasing entrepreneurship, innovation, improving the science base, encouraging high-tech production and so on). Finegold and Soskice (1988) demonstrated how an economy can achieve a low or a high-skill equilibrium depending on the complementary investment in technology and skills, and that low investment in one will encourage low investment in the other. The links across the different policy suggestions made in this paper are therefore just as important as the individual policies themselves.

Appendix 1: Financial services jobs in the UK and London (thousands)¹

Appendix 1: Financial services jobs in the UK and London (thousands) ¹		
Sector	UK	London
Retail and private banking	378	106
Insurance	325	50
Asset management	51	37
Private equity and venture capital	9	7
Corporate and investment banking	173	150
Exchanges	1	1
Accountancy ²	220	64
Legal ²	97	48
Consultancy ²	99	49
Total	1,353	512

Notes: (1) Estimates as at September 2008. (2) Jobs supported by financial services clients.
Source: Mayor of London 2008

Appendix 2: Breakdown of UK GDP by sector for years 2007 and 2020

Sector	% of total	
	2007	2020
Agriculture, forestry & fishing	3	3
Mining, energy & water supply	2	2
Manufacturing	13	16
Construction	6	6
Distribution, hotels & restaurants	14	14
Transport & communications	7	7
Financial services	8	5
Business services	24	29
Education, health & public admin.	18	12
Other services	5	6

Source: Capital Economics 2009

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