

# Skills in England 2007 Volume 2: Research Report

September 2007

Of interest to everyone involved in improving  
skills and learning opportunities across England



<b>TABLE OF CONTENTS</b>	<b>Page</b>
<b>Acknowledgements</b>	viii
<b>Foreword</b>	ix
<b>CHAPTER 1: INTRODUCTION</b>	<b>1</b>
<b>The Skills Challenge in 2007</b>	1
<b>Developments in Skills Strategy</b>	4
<b>The Economy and Labour Market</b>	5
<b>The Way Forward</b>	6
<b>CHAPTER 2: THE DEMAND FOR SKILLS</b>	<b>9</b>
<b>Overview and Summary</b>	9
<b>Introduction</b>	12
<b>Main Drivers of Skill Demand</b>	14
<b>Skills and Performance</b>	17
<i>Skills, product market strategy and performance</i>	17
<i>Making the most of investments in human capital</i>	26
<i>The role of management</i>	29
<i>Geographical considerations: city-regions</i>	30
<b>Recent Trends in Employment and the Demand for Skills</b>	32
<i>An overview of key changes in the demand for skills</i>	32
<i>Detailed industry and regional trends</i>	36
<i>Occupational trends</i>	39
<i>Polarisation in the labour market</i>	40
<i>Skills within sectors</i>	45
<i>Regional and local trends</i>	52
<b>Other Aspects of Changing Skill Needs</b>	54
<i>Qualification</i>	54
<i>Key and generic skills</i>	61
<b>Other Aspects of Changing Labour Market Structure</b>	63
<i>The importance of temporary and agency work</i>	63
<i>Self-employment</i>	67
<b>Estimates of Future Skill Needs</b>	69
<i>Evidence from Working Futures</i>	69
<i>Prospects for areas covered by Sector Skills Councils (SSCs)</i>	73
<i>Summary of SSC prospects</i>	94
<i>Overview of prospects for all SSCs based on Working Futures</i>	94
<i>Broader perspectives</i>	100
<b>Conclusion</b>	107
<b>Annex A: Future Prospects in Greater Detail – Selected results from Working Futures</b>	109
<b>Annex B: SSCs by Standard Industrial Classification</b>	141

<b>CHAPTER 3: THE SUPPLY OF SKILLS</b>	142
<b>Overview and Summary</b>	142
<b>Introduction</b>	144
<b>Labour Supply</b>	145
<i>Demographic change</i>	145
<i>Migration and labour supply</i>	148
<i>Estimated numbers of migrant workers</i>	148
<i>Profile of migrant workers</i>	150
<i>New EU members and migration programmes</i>	151
<i>Employers' attitudes to migrant labour</i>	153
<i>Implications of migrant labour</i>	154
<b>Skills Supply</b>	157
<i>Qualifications held by the workforce</i>	157
<b>Participation in Post-16 Education</b>	163
<i>Participation in further education</i>	163
<i>Participation of 16-19 year olds</i>	164
<i>Work-based learning for young people</i>	165
<i>Participation in higher education</i>	168
<i>Adult participation in learning</i>	169
<b>Workplace Training</b>	170
<b>Training Expenditure</b>	174
<b>International Comparisons</b>	178
<b>Future Trends in Skills</b>	185
<b>Policy Developments</b>	186
<i>Welfare to Work and labour supply</i>	186
<i>The Freud Report</i>	189
<i>The skills strategy</i>	189
<i>Recent developments in skills policy</i>	191
<b>Conclusion</b>	195
<b>CHAPTER 4: MISMATCHES IN SUPPLY AND DEMAND</b>	196
<b>Overview and Summary</b>	196
<b>Introduction</b>	199
<b>How to Measure Mismatches</b>	199
<b>Who Earns Most?</b>	200
<b>Returns to Education, Training and Skills</b>	204
<i>Economic theory</i>	204
<i>Methods of estimating rates of return to education</i>	205
<i>Returns to individuals</i>	207
<i>Returns to employers</i>	211
<i>Other benefits of education</i>	214
<i>International evidence on rates of return</i>	215
<b>Over-qualification</b>	218
<b>Employers' Recruitment Problems: NESS and other sources</b>	222
<b>Definitions used in National Employers Skill Surveys</b>	224

<b>Summary of Findings from the National Employers Skills Surveys</b>	224
<i>Recruitment problems in detail</i>	226
<i>Occupational characteristics of recruitment problems</i>	228
<i>Recruitment problems and size of establishment</i>	229
<i>Recruitment problems by industrial sector</i>	230
<i>Regional and local patterns of recruitment problems</i>	233
<i>Satisfaction with young recruits (16-24 year olds)</i>	234
<i>Causes of recruitment problems and their consequences</i>	236
<i>Extent of skill gaps</i>	237
<i>Characteristics of skill gaps</i>	239
<i>Occupational characteristics of skill gaps</i>	239
<i>Skill gaps by size of establishment</i>	241
<i>Skill gaps in relation to industrial sector</i>	242
<i>Local and regional patterns of skill gaps</i>	245
<i>Causes and implications of skill gaps</i>	246
<i>Latent skill gaps</i>	248
<b>Conclusion</b>	249
<b>CHAPTER 5: SKILLS, NON-EMPLOYMENT AND SOCIAL EXCLUSION</b>	251
<b>Overview and summary</b>	251
<b>Introduction</b>	252
<b>Low Skill and Disadvantage</b>	254
<i>The low-skilled population</i>	257
<i>Low skill and employment rates</i>	260
<i>Low skill and non-employment</i>	263
<i>Low skill and multiple disadvantage</i>	267
<i>The low-skill employment gap</i>	269
<i>Low skill and sustainable employment</i>	270
<b>Promoting Social Inclusion Through Improving Skills</b>	272
<i>The return to acquiring skills and qualification</i>	272
<i>Skills policy and the low skilled</i>	274
<i>Initiatives to raise skills</i>	275
<i>Aligning employment and skills policies</i>	276
<b>Prospects for the Low Skilled and Social Exclusion</b>	279
<b>Glossary</b>	281
<b>Bibliography</b>	287

## **TABLES**

### **CHAPTER 2:**

2.1: Changing broad sectoral employment patterns by region	34
2.2: Changing industrial employment patterns by region, 1996–2006	37
2.3: Occupational structure within broad sectors, 1996–2006	47
2.4: Occupational structure within industries, 1996–2006	48
2.5: Occupational change within the regions, 1996–2006	53
2.6: Qualifications held by those in employment, 1996 and 2006	55
2.7: Qualification level by occupation, 1996 and 2006	56
2.8: Projections of employment by Sector Skills Council sector	99
A.1: Projected occupational change, Standard Occupation Classification sub-major group, 2006–2014	113
A.2: Projected changes in occupational structure by SSDA Sector Matrix Industries, 2006–2014	117
A.3: Replacement demand by Standard Occupation Classification sub-major group, 2006–2014	118
A.4: Replacement demand by sector and occupation, 2006–2014	120
A.5: Implications for qualifications	121
A.6: Projected change in demand for qualifications, 2006–2014	122
A.7: Levels of projected employment by broad sector and region, 2006–2014	125
A.8: Industry shares of projected employment by broad sector and region, 2006–2014	126
A.9: Changes in projected employment by broad sector and region, 2006–2014	127
A.10: Levels of projected employment by industry and region, 2006–2014	128
A.11: Industry shares of projected employment by industry and region, 2006–2014	129
A.12: Changes in projected employment by industry and region, 2006–2014	130
A.13: Levels of projected employment by Standard Occupational Classification major group and region, 2006–2014	132
A.14: Industry shares of projected employment by Standard Occupational Classification major group and region, 2006–2014	133
A.15: Changes in projected employment by Standard Occupational Classification major group and region, 2006–2014	134
A.16: Levels of projected employment by Standard Occupational Classification sub-major group and region, 2006–2014	135
A.17: Industry shares of projected employment by Standard Occupational Classification sub-major group and region, 2006–2014	136
A.18: Changes in projected employment by Standard Occupational Classification sub-major group and region, 2006–2014	137
A.19: Projected changes in occupational structure by region, 2004–2014	138
A.20: Replacement demand by occupation and region, 2006–2014	140

**CHAPTER 3:**

3.1: Educational attainment of economically active population, England 2006	159
3.2: Qualifications of the workforce, England 2006	161
3.3: Participation by age and level in further education	163
3.4: Participation rates in post-compulsory education and training, 2004-05	165
3.5: Work-based learning for young people	167
3.6: Apprenticeship outcomes	167
3.7: Higher education initial participation rate, 1999–2005	168
3.8: Proportion who had received training in the previous 13 weeks	172
3.9: Training days	173
3.10: Training expenditure	174
3.11: Training cost components	175
3.12: Training expenditure by size	176
3.13: Total training expenditure and per capita spend by SSC	177
3.14: Highest level of educational attainment, 2004	180

**CHAPTER 4:**

4.1: Highest and lowest paid occupations, 2006	201
4.2: Difference in real annual earnings of 1995 and 1999 graduates in full-time employment 3 ½ to 4 years after graduation, by gender	209
4.3: Trends in relative earnings: adult population (1997–2004)	217
4.4: Qualifications Demand and Supply, 1986–2006	220
4.5: Overall incidence of skill deficiencies in England, 2003–2005	225
4.6: Summary of skill-shortage vacancies by occupation	229
4.7: Summary of skill-shortage vacancies by size of establishment	230
4.8: Number and density of skill-shortage vacancies by SSC sector	232
4.9: Vacancies and hard-to-fill vacancies as a proportion of employment by region	234
4.10: Skill gaps 1999–2005	238
4.11: Skills lacking overall by occupation	240
4.12: Incidence, number and density of skill gaps by size of establishment	242
4.13: Incidence and number of skill gaps by industrial sector	243
4.14: Sectors with a disproportionately high or low proportion of occupational skill gaps compared with employment	244
4.15: Incidence and number of skill gaps by region	245

## FIGURES

### CHAPTER 2:

2.1: Employment trends by broad sector, 1986–2006	35
2.2: Structure of employment by broad sector, 1986–2006	35
2.3: Occupational profiles, 1986–2006	42
2.4: Changing occupational structure, 1996–2006	43
2.5: Occupational change by Standard Occupational Classification sub-major group, 1996–2006	44
2.6: Proportion of employment of managerial, professional and associate professionals by sector, 1996 and 2006	50
2.7: Proportion of employment of managerial, professional and associate professionals by industry, 1996 and 2006	51
2.8: Qualifications of individuals in employment, 1996 and 2006	57
2.9: Percentage of employees with no qualifications by occupation, 1996 and 2006	58
2.10: Percentage of employees qualified to NQF Level 3 and above by occupation, 1996 and 2006	58
2.11: Temporary employment as a percentage of all employees, 1992 – 2006	65
2.12: Historical and projected changes in employment by SSC sector, 1996–2006 and 2006–2014 (000s)	97
2.13: Historical and projected rates of change in employment by SSC sector, 1996–2006 and 2006–2014 (%)	98
2.14: Occupational trends across Europe (EU 25) to 2020	105
2.15: Replacement needs and total requirements across Europe (EU 25) to 2020 (000s)	106
A.1: Changes in employment by industry, 1986–2006	111
A.2: Rates of employment growth by industry, 1986–2006	112
A.3: Net requirements and expansion demand by Standard Occupation Classification 2000 sub-major group, 2006–2014	119
A.4: Changes in employment by region	124

### CHAPTER 3:

3.1: England's demographic and employment profile 2006	147
3.2: An ageing population and workforce, England 2006–2014	147
3.3: An ageing labour force, England 2006–2014	148
3.4: Inflows of foreign workers to the UK, 1992–2004	149
3.5: Highest qualification by economically active population 1996, 2001 and 2006	158
3.6: Percentage of employees qualified by region, 2006	162
3.7: Participation of all 16 to 19 year olds in full-time education, 1994–2006	164
3.8: Adult participation in learning, 2004-05	169
3.9: Participation in training over previous 13 weeks	170
3.10: Educational attainment of the adult population: average years in the education system, 2004	179
3.11: Public expenditure on active and passive labour market measures	185
3.12: Long-term projections of numbers of qualified people	186
3.13: International employment and unemployment rates, 2006	187
3.14: Long-run trend in employment and unemployment rates	188



<b>CHAPTER 4:</b>	
4.1: Median earnings 2004–2006	201
4.2: Percentage change in median gross annual pay, 2004–2006	202
4.3: Private internal rates of return (RoR) for an individual obtaining a university-level degree (ISCED 5/6) from an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4) (2003)	215
4.4: Vacancies 2001 – 2007	223
4.5: Skills lacking in connection with skill-shortage vacancies	227
4.6: Overall distribution vacancies by occupation	228
4.7: Summary of skill-shortage vacancies by SSC sector	233
4.8: The distribution of skill gaps by occupation	241
4.9: Main causes of skill gaps	247
<b>CHAPTER 5:</b>	
5.1: Distribution of qualifications amongst the English working age population	258
5.2: Proportion of 20-24 year olds with no or low qualifications, 2000–2005	260
5.3: Employment rates by level of qualification, England, 2001–2006	261
5.4: Employment rates by level of qualification and gender, England, 2006	262
5.5: ILO unemployment rates by level of qualification, England, 2006	263
5.6: Inactivity rates by level of qualification, England, 2006	264
5.7: Inactivity rates by level of qualification, England, 2001–2006	265
5.8: Reasons for inactivity by level of qualification, England, 2006	266
5.9: Employment rates for disadvantaged groups by qualification level	268
5.10: Employment rate ‘gap’ for the low skilled, England 2001–2006	270

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## FOREWORD

I am pleased to be introducing our fifth *Skills in England*. This is the annual skills assessment, carried out by the Learning and Skills Council on behalf of ourselves and our key partners. It is designed to complement the key government publications in the skills arena, including the Leitch Review of Skills and the Freud Report.

*Skills in England 2007* emphasises that, while globalisation provides many economic opportunities, understanding the phenomenon is increasingly crucial in order to appreciate any potential threats to low-skilled jobs and to those people with such jobs. With increasing international competition, not least from the rapidly developing economies in Asia, it is important that, to remain competitive, England produces high value-added goods for the world economy. To achieve this, employers need a highly skilled workforce. Many employers need to raise their game to capture high-value markets – to achieve this, skills need to be placed at the heart of an organisation's business plan. The report highlights that, collectively, we must continue to find ways to increase the demand for skills from employers and ensure that everyone, whether an employer or an individual, is able to access the learning opportunities that are suitable for them.

The benefits of economic growth have not been distributed evenly across society. Like many other countries, England has a large number of people who have effectively been excluded from participation in some parts of modern life. Although not the only factor linked to social exclusion, a lack of skills is a key determinant and, in fact, the gap between the employment rates of the unqualified and those with qualifications has widened during the 21st century. This underlines the importance of addressing the skills needs of the socially excluded. Succeeding in this is key to helping all citizens become active members of society.

The LSC is dedicated to improving the skills of people in England. Through our network of skills brokers, the Train to Gain service has already engaged with over 50,000 employers. Those trained as a result of this programme will contribute towards an increase in the number of people with Level 2 and Level 3 qualifications, lead to higher productivity for employers and lay the foundations to allow England to contribute extensively in a more value-added economy. An aim the LSC shares with all our key partners.



Mark Haysom  
Chief Executive, Learning and Skills Council

# Chapter 1: Introduction

## The Skills Challenge in 2007

- 1.1 The publication in late 2006 of *Prosperity for All in the Global Economy – World Class Skills* (hereafter, the Leitch Review) outlined how England's further education system (FE) must adapt to meet both the social and economic needs of the country over the medium term. Writ large throughout the Review are measures and reforms to foster both national competitiveness in an increasingly open world economy and social inclusion.
- The Leitch Review has set out the vision for the FE system.*
- 1.2 Policies to raise both international competitiveness and social inclusion make considerable demands on the FE system. In terms of competitiveness it requires the system to raise the demand for skills, especially for higher level skills, and ensure that the supply side is able to meet both current and future demand. To increase social inclusion, the emphasis is on improving the basic skills that allow people to obtain a job and then supply the support that will permit them to progress in the labour market. These are formidable challenges for the FE system, not least because they are longstanding problems with which policy makers have been grappling over much of the last 150 years.
- The key challenges are increasing both competitiveness and social inclusion.*
- 1.3 During the 1970s and 1980s the labour market experienced major structural adjustment with a shift in employment from the manufacturing to service sectors. Arguably at that time labour market institutions were slow to adapt to the changes taking place. Since then the emphasis on creating a flexible labour market has depended, at least in part, upon an FE system that is able to anticipate and adapt to changing patterns of demand. Inherent to this is ability to provide portable skills and ongoing access to learning by people of any age. Individuals are able to readily move between industries and occupations only if they have the transferable skills that allow them to do so.
- Forecasting competitiveness and social inclusion is dependent upon an FE system that can anticipate and adapt to changing patterns of demand.*
- 1.4 Today the labour market is experiencing a further wave of structural adjustment stemming from increased international competition in goods and services. Rapid technological change has increased the potential to make use of global supply chains and networks to take advantage of relatively low labour costs in some parts of the world. Only a few years ago, for instance, telephone call centres provided new employment
- The pattern of demand for skills is likely to rapidly change in the future due to globalisation.*

- opportunities in many parts of England, but today these are more likely to be located in other parts of the world.
- 1.5 From a skills perspective, changes in the global economy are difficult to tackle but, as noted elsewhere, the reward for doing so is great (Campbell, M 2006 “Building prosperity: a skills agenda for the UK”). There is widespread consensus that the country needs to raise its game: not only does the demand for higher level skills – NQF Level 3 and above – need to be stimulated, but these skills need to be effectively deployed. *The gains to be had from globalisation are immense.*
- 1.6 To date there is evidence of success. Productivity, however measured, compared to the country’s major competitors has improved over recent years, and the country ranks highly in the World Economic Forum’s competitiveness index for 2006/07 (HM Treasury, 2007; World Economic Forum 2006). But there is recognition that the pace of progress in other countries is rapid, so the policy emphasis has to be upon trying to stay ahead of competitors. *Productivity links have been improving but need to be raised even higher.*
- 1.7 Raising the country’s relative international productivity level is not wholly about raising skill levels but ultimately the capacity to operate in high value-added sectors of the world economy requires management to have the strategic vision to identify and enter those markets, and a workforce capable of turning that vision into reality. So skills are a vital part of the mix. *Skills are an essential ingredient in raising productivity levels.*
- 1.8 Comparative international evidence reveals a mixed picture of skills in England. Some of the positives are:
- that people spend a relatively long time in the education system;
  - the relatively high enrolment rates amongst older people.
- Some of the negatives are:
- the proportion of 16 and 17 year olds staying on in post-compulsory education is low compared to many OECD countries;
  - the labour market penalties attached to low educational attainment are relatively high (OECD, 2006).

These issues are explored in detail in subsequent chapters but illustrate the nature and complexity of international comparisons.

- 1.9 The other major challenge for the FE system is to provide socially excluded people with the skills that will allow them to make the transition into social inclusion. Available evidence indicates that low educational attainment is associated with a higher risk of being economically inactive, unemployed, in low-paid work, as well as a barrier to accessing further education and training. Where people with low skills find work there are often limited opportunities for them to progress.
- 1.10 The *Welfare to Work* policy emphasises the importance of employment as a means of fostering social inclusion. Social security policy, compared to other countries, places more emphasis upon getting people into work. This is reflected in relatively high employment rates, but it also results in more marginal workers participating in the labour market, which has implications for relative productivity rates and the occupational structure. It also has implications for how skills policy can tackle the issue of low skills especially amongst those in work.
- 1.11 There have been several initiatives to improve the employability of the socially excluded, mainly through the provision of basic skills. Details are provided in Chapter 5. The emphasis now, as spelt out in the Leitch Review, is upon providing in-work support to people so that they are able to progress in their employment. This is particularly important in relation to socially excluded people where they experience difficulties holding down a job. Train to Gain, the new initiative that will provide subsidised training to employees via their employer, is important in this regard. Chapter 3 provides more details about Train to Gain.
- 1.12 As in previous years, *Skills in England* is able to indicate that much has been achieved but much remains to be done. The skill challenge is to ensure that:
- through the development of a highly skilled workforce, increased globalisation is an opportunity rather than a threat;
  - employers raise their game and their level of demand for skills by entering higher value markets;
  - the deployment of skills in the workplace is improved;
- Social inclusion is dependent upon skills.*
- Providing in-work skills development is increasingly recognised as a means to foster social inclusion.*

- productivity levels match those of other developed economies both in aggregate and at sectoral and regional levels;
- skills supply meets the need of the economy now and in the future to meet the productivity challenge;
- the economic value of vocational qualifications is improved;
- there is an effective skills guidance service available to employers and individuals;
- none are left behind so that social exclusion is fended off through the provision of skills.

These issues have been addressed in recent policy and are explored in detail in this year's *Skills in England*.

## Developments in Skills Strategy

- 1.13 How will the challenges outlined above be addressed by policy? The *Skills Strategy* (HM Treasury/DfES, 2005) sets out the Government's objectives for FE. Over the last year the agenda has focused on:

- improving productivity through the increased provision and deployment of skills;
- increasing the effectiveness of post-compulsory education and training delivery;
- emphasising the role of guidance to employers and individuals (notably adults);
- increasing employment rates in part through the provision of skills to foster social inclusion.

*Government policy, especially the Leitch Review, is driving substantial change in the demand for, and supply of, skills.*

- 1.14 The current agenda is very much driven by the Leitch Review, which addressed the country's future skill needs in the context of what is needed to compete in a global economy. Supplementary to Leitch have been:

- *Foster Report* (Foster, 2005) and subsequent White Paper, on the mission and structure of further education (FE) (DfES, 2005); and
- *Freud Report* on increasing labour force participation rates to tackle social exclusion.

- 1.15 In summary, these reports have tackled:
- **the demand side:** identification of the skills that employers need to deploy to be competitive;
  - **the supply side:** how labour and skill supply can be stimulated even further, in part by increasing employer engagement;
  - **delivery mechanisms:** how the FE sector can be made more effective.

1.16 On balance, policy is more supply than demand orientated because it is relatively easier to change the former than the latter. Now, however, there is an emphasis on employer engagement in the FE system being conditional on employer commitment to raise skill levels. There remains a large number of employers who remain sceptical about the contribution further investment in skills might make to their enterprise. These are, in many instances, the archetypical *low-skill equilibrium* workplaces: often their existing market is dependent upon local demand, they face little competition currently, and they are for the time being performing adequately. Hence they have little incentive to either raise business performance or invest in the skills of their workforce. But these organisations will not be immune to developments in the world economy forever; technological advances, for example, may suddenly undermine their position.

*More emphasis is being given to the demand side in policy.*

*There remain employers who are sceptical of the benefits to be obtained from investing in human capital.*

1.17 Accordingly there is potentially a large number of employers, and consequently employees, who are not being engaged by skills policy. This, and the implications of other policy developments, are explored in detail in this year's *Skills in England*.

## The Economy and Labour Market

1.18 So far, the discussion has been about the challenges facing skills policy and a summary of recent policy developments. To further prepare the reader for the chapters on demand, supply, and mismatches, it is worth considering the economic context against which change has been taking place. The economy has been strong over the recent past. There has been the longest unbroken expansion in the UK economy. Growth in the economy is around 2.75 per cent. The economy has been boosted by relatively strong business investment and recovery in the Euro area has stimulated exports.

*The economy has been strong over the recent past. Conditions are good for investments to be made in human capital.*



- 1.19 UK productivity has increased substantially over the past 40 years. When measured as output per job, productivity is found to have increased by an average of 17.5 per cent each decade between 1966 and 2006. There is also evidence that the productivity gap with competitors such as France and Germany is closing, and that productivity growth has kept pace with the USA which has experienced strong growth. The Budget Report 2007 mentions that the productivity growth is all the more remarkable because it has occurred simultaneously with employment growth. Because new workers may take time to settle into their new jobs, productivity usually slows as a consequence of employment growth.
- Productivity growth is strong. But there is no room for complacency as all other countries are trying to raise their productivity levels.*
- 1.20 In 2006, there were 26 million economically active people in England and 24 million people in employment. The number of unemployed people in England increased over the year. Compared to the EU, unemployment rates are low, and employment rates high. In 2006, the average unemployment rate in England was 5.6 per cent compared to 7.9 per cent across the European Union, 8.4 per cent in Germany and 9.4 per cent in France. At the same time the employment rate in England was 74.8 per cent, compared to 64.3 per cent in the European Union, 67.2 per cent in Germany and 63.0 per cent in France.
- 1.21 In an economy still experiencing growth, and with unemployment standing at a historically low level, there is an economic necessity to boost labour supply, either through policies that encourage labour market participation from groups that might otherwise be inclined to exit or not enter the labour market, or through immigration.
- Economic growth coupled with demographic trends raises concerns about future labour shortages.*

## The Way Forward

- 1.22 Skills matter for a number of reasons which are important to the economy as well as individuals and society at large. In the face of an expanding open global economy with import penetration from, for instance, the Asian economies, England's economy must compete on the quality of goods and services rather than solely on price. Sections of the economy (for example, services) that rely mainly on domestic demand remain able to compete more on price, but competition from foreign imports is increasingly posing a threat to parts of this market. The national economy needs to compete on the specification of
- Skills are the key to the future prosperity of employers, individuals and State.*

both products and services, as well as the quality of production and delivery to the consumer. Skills remain a key element in achieving this.

- 1.23 All the evidence demonstrates that investments in skills pay: for the employer, the individual and the State. Ample evidence of this appears in the main body of the report. But much of the discussion is about raising the level of demand for intermediate and higher level skills. A further challenge is about ensuring that those at risk of social exclusion have access to the means that will allow them to participate and progress in the labour market. This year's report provides much evidence on the benefits conferred upon the socially excluded by programmes that steer them into work through a process of guidance and training.
- All available evidence demonstrates that investments in skills pay off.*
- 1.24 Increasing levels of competition in the world market create an opportunity for producers of goods and services in this country. But there are risks, especially for those individuals who do not possess the skills that will allow them to sustain employment. Provision of portable skills, and the means to raise and update those skills in anticipation of or response to changing patterns of demand, is the single most important means by which individuals can be self sufficient in the labour market.
- 1.25 Given that the Leitch Review has driven so much of the skills debate over the past year, it is worth reporting its succinct encapsulation of the skills challenge:
- "In the new global economy, people's economic security will not depend on trying to protect particular jobs, holding back the tide of change. It is not enough to rely on the traditional model of protecting people from change. Instead, the best form of welfare will be to ensure people can find their next job, staying in the labour market. The best way to do this is to ensure that people have a basic platform of skills that allows flexibility and can update their skills as the economy changes. For people to progress in the modern labour market, they must be able to update their skills to adapt to change. Updating skills and retraining will increase in importance as many of us have longer working lives. World class skills are inexorably tied to world class employment."* (paragraph 12, p.9)
- The best form of welfare for individuals is possession of skills that will allow them to obtain a job and stay in the labour market.*

1.26 There is a range of national models that might realise Leitch's aims. Attention has been drawn to the concept of 'flexicurity' (CEC, 2007; Madsen *et al.*, 2006). Here the emphasis is upon a flexible labour market with relatively low levels of employment protection, so that employers can readily 'hire and fire', but relatively high levels of social security available to those who lose their jobs coupled to the provision of vocational education and training to allow them to access jobs especially in new, growing sectors of the economy. The system has worked well in Denmark and the Netherlands, the two countries with which flexicurity is most associated, in that it has allowed structural adjustment to take place without high levels of unemployment arising. It is a moot point whether the flexicurity model is transferable to England. The significance is that there is a range of national models that aim to raise national economic performance through the interaction of welfare and skills policies, from which elements of good practice might be derived and transferred.

*There is a range of national models from which good elements of practice might be derived in designing a system that will realise Leitch's vision.*

# Chapter 2: The Demand for Skills

## Overview and Summary

- 2.1 This chapter focuses upon the demand for skills, especially from employers. The demand for skills is driven by a large range of inter-related factors, many of which lie outside the control of those in the labour market. The demand for skills is derived from the demand for goods and services, which is in turn influenced by a complex mix of economic and other factors. *This chapter looks at the demand for skills.*
- 2.2 Since the last edition of *Skills In England (2005)* was published, a number of skills-related policy studies and initiatives have emerged. In particular, the Leitch Review, published in December 2006, emphasised very strongly the need for demand-led approaches to enhancing the skills of the workforce in England.
- 2.3 The chapter focuses upon developments in the economy and the labour market affecting the demand for skills. Recent trends in employment structure are highlighted, focusing on the main trends for the various industry sectors and occupations. These suggest that the demand for skills will continue to grow. *There are many drivers of the demand for skills.*
- 2.4 The demand for skills depends on the choices being made by employers about product strategies and how work is organised. There is some evidence that these choices are not always made in a sustainable manner. As a consequence there may be a case for intervention in order to raise the demand for skills. This is highlighted as a priority for policy in documents such as the Leitch Review. *The demand for skills is particularly dependent upon employers' product market strategies.*
- 2.5 In addition to the above drivers, changes in legislation and social attitudes are major factors influencing the demand for goods and services, and hence the demand for skills. Regulatory compliance is a complex process, in some industries requiring people to be skilled in managing the process of meeting the appropriate standards while making the workforce aware of relevant regulations. Concern for the environment and fears of global climate change are shaping policy and people's attitudes towards such issues, as exemplified in the *Stern Report*. The ageing population also means that demand for goods, services and skills becomes skewed towards those

that reflect the needs of older people. These factors will have an impact on the demand for existing commodities and on the emergence of new goods and services.

- 2.6 Understanding the drivers of demand is therefore an important element in designing and implementing policy for skill development. It is worth reviewing relevant economic theory on the determinants of skill demand. Skills are valuable for the economy as a whole because of their potential to improve total factor productivity and drive innovation, thus enhancing competitiveness. Although the links between skills, productivity and general economic performance are complex, there is a growing consensus that skills are an important part of the story.
- 2.7 It is clear that to improve productivity and economic performance, it is necessary not only to have a skilled workforce but also to have the management capability to effectively organise and deploy those skills. The need for suitably qualified management is highlighted as a particular skill gap.
- 2.8 Changes in the qualifications of the employed workforce are also assessed. The average level of formal qualifications held has risen sharply in recent years, with large increases in the numbers qualified at National Qualifications Framework (NQF) Levels 4 and 5, and a big reduction in the number of people with no formal qualifications. Chapter 3 examines the considerable increase in the numbers of people acquiring qualifications. At the same time, skill requirements within most occupations are increasing.
- 2.9 Other aspects of skill requirements are also changing. Many surveys of employers in recent years suggest that employers increasingly value various key and generic skills. The latest *Skills at Work Survey* has highlighted this issue.
- 2.10 The prime focus in this volume is on developments at national level (England), although there is an overview of broad regional features. Many of the patterns observed are common to all regions, although there are significant differences linked to their underlying economic structure. A more detailed discussion of the implications of spatial variations is provided in Volume 4, *Regional and Local Evidence*.

*Understanding the drivers of skill demand is important for policy purposes.*

- 2.11 Given the inevitable time-lags between initiating training schemes and the eventual output of new skills, it is necessary to take a view about future needs. The main employment projections undertaken on behalf of the SSDA and its partners, including the LSC (*Working Futures, 2004-2014*), have not been updated since the previous *Skills In England* report. Nevertheless, these remain the most detailed and comprehensive assessment of future needs currently available. They are summarised here, with more detailed results presented in *Annex A*. Projections of future employment change by occupation and industry are presented, using 2006 as the base year. The majority of this information is essentially unchanged from what was presented in *Skills in England 2005*, but the key messages and variations are highlighted and discussed here.
- 2.12 A number of new assessments of future skill needs have been published over the past year. In particular, the Sector Skills Councils (SSCs) are obliged to undertake a *Sector Skills Agreement (SSA)*, which involves production of a *Skills Needs Assessment (SNA)*. In many cases these are detailed documents. They are briefly reviewed and summarised here, with details provided of where to find more information.
- 2.13 The chapter also includes an international perspective. This includes a review of evidence on links between skills and economic performance, as well as evidence related to the increasing internationalisation of many labour markets, especially for the very highly skilled and qualified.
- 2.14 The main conclusion that emerges from this review of the evidence is that there will be a continuation of the recent significant increases in the overall demand for skills. They will remain a key factor in determining future economic performance for individuals, employers and the economy as a whole.
- 2.15 Practical policy intervention remains focused on the supply side. This reflects the fact that government has much more leverage here than it does on influencing demand from employers. Following the Leitch Review, the need for demand-focused initiatives remains a priority for the skills agenda.
- 2.16 Whilst many government initiatives are supply-side oriented, there are a number of institutional arrangements to ensure that the employer voice is heard. The Skills for Business network of the SSCs is supported and directed by the Sector Skills Development Agency (SSDA). The aim of the Skills for Business network and the SSCs is to articulate the needs of employers and to coordinate between
- As well as a historical perspective on the changing demand for skills, projections of future demand are included.*
- An international perspective is provided too.*

employers, stakeholders and government to improve the demand for and the supply of skills.

## Introduction

- 2.17 The United Kingdom, and consequently England, is one of the prominent players in the global knowledge economy, as revealed through a number of economic and education indicators. According to GDP per capita, and growth of this indicator, the UK ranks among the top ten countries in the world. The UK has also witnessed strong productivity growth in the last 10 years, but there is no room for complacency.
- The UK is in the top ten of countries by per capita GDP.*
- 2.18 A central aim of government economic policy remains raising the rate of productivity over the economic cycle and narrowing the productivity gap compared with competitors such as the USA, France, and Germany (HM Treasury/DTI, 2004). This requires action in a number of areas, including improving the skills of the employed workforce. The demand for skills may require stimulation. Employers are not always aware of the skills that are required in order to succeed in a competitive market in the longer term. Skills need to be deployed effectively if the potential benefits of employing skilled people are to be realised. The need to raise the demand for skills also encompasses the deployment and effective use of those skills.
- Government policy is focused on raising productivity even further.*
- 2.19 The Leitch Review, published in December 2006, strongly urges that the UK raise achievement at all levels of skills. Of the many key drivers of productivity, government can exercise most control over skills. The review suggests that up to one-fifth of the productivity gap between the UK and France and Germany could be eliminated through improvements in skills. The *Budget 2007 Report* emphasises that workforce skills are key to the country's capacity to respond to new challenges arising from the changing global economic environment. A more highly-skilled workforce is seen as being more flexible, responsive, and productive. Both the Leitch Review and the *Budget Report* support demand-led approaches to skills development in the UK.
- Much current thinking supports a more demand-led system as a means of increasing productivity...*
- 2.20 Not everyone agrees with this diagnosis. Some, such as Keep, Mayhew and Payne (2006), are more sceptical about the role that skills can play and argue that they should not be seen as a panacea. Many other things need to be in place to ensure a continuation of improved economic performance.
- ...but this view is not shared by all.*

2.21 The most recent *Skills at Work Survey* suggests that growth in supply has been outweighing demand for a number of years. According to Felstead *et al.* (2007), the results of the 2006 *Skills at Work Survey* shows that there has been rapid growth in the supply of workers holding qualifications at all levels, but there has been slower growth in the number of jobs that historically require these qualifications. The issue of the balance of supply and demand is discussed further in Chapter 4.

*Other factors need to be in place if skills are to raise productivity levels.*

2.22 This chapter focuses upon the demand for skills, examining the following:

- the main drivers of skill demand;
- the links between skills and performance (including reviewing various measures of productivity, and international comparisons);
- the increasing significance of city-regions;
- the links between the deployment of skills in the workplace and management skills and organisational performance;
- the role of training in company performance and the characteristics of high-performance workplaces;
- recent historical trends in employment and the demand for skills, including key changes in the demand for skills, detailed industry and regional trends, occupational trends, polarisation in the labour market, skills within sectors, and regional and local trends;
- other aspects of changing skill needs, including changes in qualifications and key and generic skills;
- other aspects of changing labour market structure, including the continuing importance of temporary and agency work, as well as trends in self-employment;
- prospects for the next eight to ten years based on a summary of the *Working Futures* projections, together with an assessment of recent research by SSCs and other bodies.

2.23 The chapter is complemented by a separate Annex (p109) which sets out in more detail the prospects for employment across various different dimensions as developed in *Working Futures, 2004-2014*. This includes:

- prospects for sectoral change in greater detail;
- detailed occupational prospects;



- prospects by detailed occupation within sectors;
- replacement demand by detailed occupation and sector;
- implications for the demand for qualifications;
- regional variation in future skill needs (including sectoral and occupational prospects by region).

2.24 Because current government policy is focused upon improving productivity, competitiveness, and economic performance more generally, it is appropriate to concentrate upon skill demand from employers. It is also important to consider other aspects of the 'demand for skills', including demands from individuals. This involves a somewhat different perspective, which relates to the decisions of individuals to invest in education and skills, the returns to that investment and the implications for social inclusion. These matters are dealt with in subsequent chapters.

## Main Drivers of Skill Demand

2.25 Employer demand for skills is derived from demands for the **output** of goods and services they produce. This in turn is driven by a complex mix of **drivers**, including:

- competitive forces, including alternative sources of supply outside the country;
- innovation and changing methods of provision of products and services, including technological advance and sub-contracting;
- rising real incomes and changing tastes.

*There are many drivers of skill demand.*

2.26 The other key factor is **productivity**. Improvements in efficiency mean that the same levels of output can be delivered with less labour input (fewer jobs). The net impact on employment (the number of jobs) depends on the balance between these two opposing factors. Productivity is also a key influence on many of the drivers listed above. The Treasury and the former Department of Trade and Industry (DTI) have identified five key drivers of productivity, of which skills is one.

*Skills can help to drive up productivity...*

### Box 2.1: Key Drivers of Productivity

- Investment
- Innovation
- Enterprise
- Competition
- Skills

- 2.27 DTI (2006) argues that there is no single measure of how well the UK economy is responding to the challenge of globalisation. The DTI productivity and competitiveness indicators include a broad range of measures of the fundamental drivers of productivity growth. For the UK to realise its full potential, it is argued that even greater investment is needed, not just in capital (buildings and machinery), but in people (skills, new ideas, and enterprise). DTI argue that it is only through nurturing the right skills and innovation that a high value-added, enterprising economy can be achieved. There is no room for complacency. While the UK has maintained the world-class performance of its research base in the face of increasing competition from abroad, facilitated by increases in the science budget in recent years, levels of innovation are lower than those achieved by many competitors, as measured by conventional indicators such as R&D spending. *..but levels of investment in people need to be raised.*
- 2.28 There is much evidence that the role of ICT is pervasive, affecting both the pattern of production of goods and services, and how these are produced and where. Identifying the impact of ICT has proved problematic. While some evidence points to the dramatic gains that have been achieved in the US, evidence for the UK and Europe is sketchier. Bloom *et al.* (2007) found that US multinationals operating in the UK have higher productivity than non-US multinationals in the UK. They attribute this productivity gap primarily to the more effective use of IT by US multinationals, and conclude that US firms are organised in such a way as to allow them to use new technologies more efficiently. *ICT can help improve productivity, but only if it is effectively used.*
- 2.29 The latest *Skills at Work Survey* by Felstead *et al.* (2007) finds that there has been a continuous expansion in the use of computers and automated equipment at work. Since 1986, the number of jobs involving use of advanced technology has steadily increased. While this increase has slowed in the last five years, in this period the proportion of jobs in which computing is an 'essential' aspect has increased to 47 per cent. The use of computerised equipment varies across industry and occupation. The importance of internet use has also increased sharply from 2001 to 2006. *The evidence suggests that it is used less effectively in the UK than in other countries.*
- 2.30 This remains a hot topic for research. Work such as that by Draca *et al.* (2006) summarises the evidence on links between overall levels of

productivity and ICT. It focuses on the so-called 'Solow Paradox', about the apparent absence of an observable impact of ICT on productivity and suggests that if it ever did hold true, it no longer does so. Accumulating evidence from growth accounting and other econometric work suggests a key role for ICT in explaining recent productivity growth. In fact, the empirical estimates suggest a much larger impact of ICT on productivity than might be expected. Possible explanations for these results are assessed, including the notion of complementary organisational capital.

- 2.31 Crespi *et al.* (2007) examine the impact of ICT investment and organisational change on productivity growth using UK firm-level data. Investment in ICT and organisational changes are found to interact in their effect on productivity growth. UK-owned firms are least likely, compared to US- and other foreign-owned firms, to implement organisational change. This is a failing of management. Crespi *et al.* also find a slowdown in total factor productivity for firms which are not introducing organisational change and/or are in the early stages of ICT investment, a finding that corresponds to the macro evidence.
- Employers are not implementing complementary organisational changes at the same time as ICT. Hence they fail to capture the full benefits of ICT.*
- 2.32 Clayton (2005) highlights the pervasive aspects of ICT which have been very much broader in their impact across the economy than is the case with more traditional engineering technologies, which are often restricted to particular sectors. This implies that relatively small differences in the (average) effectiveness of the use of ICT across an economy can have a marked effect on overall national productivity. He presents compelling econometric evidence of the significant contribution of effective deployment of ICT to productivity growth.
- Even small differences in the effective use of ICT can have marked effects in aggregate.*
- 2.33 CEPIS (2007) also emphasises the rapidly changing situation in ICT which makes tracking, assessing and responding to e-skills a considerable challenge. "The seemingly relentless emergence of new tools, approaches and techniques prevent easy or valid identification and structuring of requirements. The 'waves of change' feed through to the derivative processes, in a way that needs to be understood in relation to skills/competence frameworks, and the specification of training needs that arise from it." (CEPIS, 2007, p 23)

2.34 A related phenomenon, although not one solely restricted to the ICT sector, relates to 'off-shoring'. Movement of operations abroad to take advantage of lower labour costs is nothing new. But ICT in particular has facilitated it in a much larger range of sectors and occupations than hitherto. This raises concerns amongst some occupations about their futures. These changes in geo-sourcing patterns need to take into account movements of products, services, and labour in both directions. Some EU Member States have been beneficiaries, while for others this represents a threat to some domestic activities, with concerns about loss of jobs. Even in these cases there may be considerable economic benefits from increased global competitiveness of organisations and reduced costs and prices within the EU that off-shoring can bring. A number of studies have examined these issues in detail, many focusing in particular on the ICT sector. These include Sato (2005), the OECD (2006), Ovum (2006), and BCS (2004 and 2006). These studies include assessments of overall economic impact in the UK, as well as implications for particular occupations.

*ICT allows more jobs to be carried out elsewhere to take advantage of lower labour costs and thereby improve competitiveness.*

## Skills and Performance

### Skills, product market strategy and performance

2.35 The quality and quantity of skilled labour in the economy heavily impacts on economic performance and productivity growth. The former DTI and HM Treasury (2006) suggest that skills raise labour productivity and total factor productivity through:

- enabling workers to undertake more complex work, to work more effectively and to produce higher value products;
- making investment in innovation and technology more profitable (when combined with skilled labour);
- greater adaptability, since skilled workers are better at adapting and responding to changing work environments and at implementing new technology and processes as required by rapidly changing global markets;
- spill-over effects: workers often learn from highly-skilled co-workers and this can spill over to make wider society benefits.

*Skills can raise total factor productivity.*

- 2.36 Research on the complex relationship between skills and general levels of performance has concentrated on:
- the definition of productivity;
  - its relationship to skills;
  - the effective deployment of skills;
  - high-performance workplaces.
- 2.37 Various measures of productivity are in use. Box 2.2 sets out a brief summary of the main indicators used. All compare some measure of the outputs of goods and services with the inputs used to produce them.

## Box 2.2: Measures of Productivity

### **Total factor productivity:**

The most comprehensive measure of productivity is total factor productivity (TFP), which takes into account all the factors of production used to produce output, including capital as well as labour.

Capital services (contribution of capital assets – for example, machinery and raw materials – in the production process) are especially difficult to measure, so this indicator is less widely used than some alternatives.

Measures also differ according to whether they use a measure of gross output such as total value of sales (which includes the value of all intermediate inputs) or a value-added concept such as Gross Domestic Product (total value of goods and services produced by a country).

In most cases the emphasis is on 'real output' taking into account inflation. Output is therefore measured in so called 'constant prices'.

**GDP per capita** (employed) is a commonly used indicator. This is because it is the easiest measure to construct, requiring just an estimate of employment as well as the output measure (GDP).

**GDP per hour worked** recognises that GDP per capita measures fail to take into account an important aspect of the intensity of labour input. An economy achieving the same output but by using fewer hours of work is clearly more productive.

**GDP per head** (of population) is a variation based on the total population rather than just those in employment.

Comparisons of measures using population as opposed to employment in the denominator also provide further insights into the intensity of labour input. A country which obtains the same GDP per head (of population) as its competitors, but by deploying fewer people in employment, is more efficient and allows more time for leisure and other non-formal economic activities (assuming the same average hours per worker).

On the other hand such an economy may also be associated with a more inequitable distribution of income than one in which a larger proportion of the population shares the benefits by being in employment and earning a wage.

- 2.38 Previous *Skills In England* reports have highlighted the large volume of evidence linking education and skills with productivity performance. This research also highlights the importance of the links between skill performance and product strategy. This chapter summarises the previous evidence as well as highlighting some the findings from the latest research on skills and on productivity. While much of the discussion in this research relates to the private and commercial sectors, many of the conclusions apply equally to the public and not-for-profit sectors.
- 2.39 The matched plant studies of the National Institute of Economic and Social Research (NIESR), extending over two or more decades, have provided consistent evidence that, on average, UK producers tend to produce lower quality goods and to be less productive. In addition, they suggest that skills gaps are an important contributory factor to these differences in productivity performance, and account for as much as a fifth of the productivity gap between the UK and Germany. *UK producers have tended to produce relatively low value products.*
- 2.40 More recent evidence confirms a link between skill demand and product market strategy (Mason, 2004). A high value-added product strategy is associated with higher skill levels in the workforce. It is also positively related to the extent of foreign competition and sales growth. Companies that are dependent upon domestic demand are less likely to have adopted high-end, value-added product market strategies. Competition can therefore be a valuable stimulant as well as a threat. But there remain large parts of the economy that will always be primarily dependent upon domestic demand. Mason (2005) finds that there is a high degree of path dependence. It is difficult for companies to change direction from low- to high-end strategies, because the strategies adopted are largely shaped by past choices. *Moving into higher value markets is dependent upon higher- level skills.*
- 2.41 Mason's evidence also supports earlier findings from the Low Skills Equilibrium study conducted on behalf of DTI (Wilson and Hogarth, 2003). This revealed the difficulty of persuading companies which were pursuing a low-skill, low-value business strategy of the need to move up-market at a time when they were currently still making a profit. *Persuading employers to shift into higher value markets is not straightforward...*

- 2.42 Evidence presented in the Pre-budget Statement in 2002 suggested that raising the ratio of high-skilled to low-skilled employment was associated with a significant boost to productivity in a controlled sample of manufacturing plants. *... and consequently it is not straightforward to make the case to employers for investing in high-level skills.*
- 2.43 Jagger *et al.* (2005) compared Britain's productivity and skill demand across both industrial sectors and countries. The results reveal that Britain has organisations where productivity is amongst the highest in the world, although many of these are sectors where productivity is relatively low.
- 2.44 The explanations for the observed differences between British productivity in a given sector and that in competitor countries are often complex. They include:
- differences in the education of the workforce – higher productivity is associated with more people employed being qualified to higher or intermediate levels;
  - differences in occupational structure – industries employing a greater proportion of professional occupations or more ICT occupations, have higher productivity.
- 2.45 Jagger *et al.*'s results also suggest that sectoral differences are more important than national differences when looking at productivity. The implication is that the relatively poor aggregate performance of national productivity over recent years may be a consequence of too great a concentration in the economy as a whole on low-productivity activities. *Overall, the evidence suggests too much production in low-value activities.*
- 2.46 Recent studies, such as those by Fang (2006), confirm that education contributes to economic growth, both directly, through increasing the productivity of workers, and also through facilitating a better match between workers and jobs.
- 2.47 Galindo-Rueda and Haskel (2005) use linked data from the Annual Business Inquiry (ABI), Employers Skill Survey (ESS) and Census Population area-data and find that firms in areas with higher percentages of the local population or workforce with qualifications at Level 4 or higher have greater productivity. Firms with higher proportions of educated, male, full-time employees are more productive and pay higher wages. These findings



are consistent with the existence of area-based human capital externalities.

- 2.48 Collier *et al.* (2005) argue that employers' training decisions are influenced by their perceptions of the returns to training, which are often very uncertain. They attempt to model the association between training, profitability and establishment survival. They find a significant link between training and the likelihood of medium-term commercial survival. In particular, increased training of non-manual workers in large establishments is associated with a greater chance of survival. More disaggregated analysis reveals that the association differs across occupational groups and sizes of establishment. In smaller establishments, increased training for craft and technical workers is associated with better chances of survival, while for professional workers the opposite effect is found. This analysis has now been extended in a report produced for the SSDA. In this research, Collier *et al.* (2007) find that there is a higher incidence of closure amongst those workplaces that are classified as 'non-training' (1 in 4 closed) versus 'training' workplaces (1 in 9 closed). They conclude that human capital accumulation has a significant and positive effect on business performance and survival.
- Where employers invest in human capital it is associated with improved performance and even workplace survival.*
- 2.49 Dickerson (2005) explores differences in productivity across regions within England and concludes that inter-regional differences in output per person in employment are attributable to productivity differences that are fairly consistent across sectors. This finding suggests that an investigation of the factors that contribute to inter-regional productivity should focus on differences at the regional level – for instance differences in infrastructure and other spatial factors, such as physical and human capital – including skills and the occupational distribution of employment within sectors. It also supports the use of regional and sectoral policy aimed at uniform productivity increases in poorly-performing countries and regions. It is thus important that initiatives such as Sector Skills Agreements retain a country and regional focus to their sector Skills Needs Assessments and their sectoral strategies to improve skills and productivity.
- It also needs to be borne in mind that there is a complex interplay of regional and sectoral factors driving productivity.*
- 2.50 Plumridge *et al.* (2006) conducted a country-level business performance analysis, focusing on policy asymmetries within Great Britain, adopting a

production function approach. Their starting point is the Treasury's key 'drivers' of business performance and productivity differentials, which include skills, investment and competition. Their empirical investigation into the effects of these drivers on business-level productivity per employee across England, Scotland and Wales explores whether spatial differences in the influence of these drivers exist. The results suggest that, after taking account of sector-specific effects, productivity differentials do exist between businesses across Great Britain and that policy instruments can enhance productivity. The results indicate that these key drivers are equally applicable across countries within Great Britain. There is, however, evidence to suggest that scale effects for labour and capital do differ across England, Wales and Scotland.

2.51 The SSDA (2006b) has undertaken its own examination of sectoral productivity differences between the UK and other countries. It investigated the varying contribution of skills to productivity by sector. It is argued that this 'sectoral approach' represents an important new direction in this area of research. The findings show that skills have contrasting impacts on productivity in different sectors, with complex, sector-specific patterns emerging. There is no 'one-size-fits-all' skills solution. Further work has been commissioned by SSDA, and the SSCs themselves are also moving in this direction, as discussed, in much greater detail, below.

*Sectoral differences in the relationship between skills and performance are sufficiently different that there is no 'one-size-fits-all' approach.*

2.52 In a report for the SSDA, Ashton, Raddon and Sung (2006) provide a comparative of international policy approaches to skills, focusing on sectoral specifics with the aim of helping to guide policy recommendations for the UK. They adopt a case study approach which involves project review and evaluating sectoral approaches in a number of (mainly OECD) countries. These case studies cover both formal sectoral systems and broader national training systems that have aspects of a sectoral approach. In the case studies, they examine the different ways of engaging employers in raising their demand for skills, including:

- financing methods;
- sectoral system features;
- important issues for future developments;

- stakeholder roles;
- the relationship between sectoral bodies and vocational training and education providers.

- 2.53 The former Department for Education and Skills (DfES) and the Department for Work and Pensions (DWP) (DfES/DWP, 2007) have constructed *A Shared Evidence Base* on the role of skills in the labour market, including their impact on productivity. The focus is on those with low skills, including how to improve their employability. It emphasises that the UK has a relatively long tail of low-qualified and low-skilled adults who are increasingly inactive in the labour market. It is argued that to increase productivity, maximise output and improve social equity it is necessary to improve qualifications and skills levels of the low qualified and low skilled in order to increase employment rates. They argue that employment-focused programmes have generally had more impact on initial employment chances for the low skilled and are more cost effective than education-focused programmes; but the jobs low-skilled people move into are typically low paid and provide few prospects for further progression. Training can help move some of the low-skilled group into work. But there is a need to build on the best aspects of past programmes, including developing strong links with employers; developing a clear work focus; use of employer placements; and focusing on support which is tailored to meet individual needs. The best improvements in earnings and productivity occur when qualifications are gained in the workplace. At present those with low levels of skill are the least likely to receive training from their employers.
- There is a need to raise the skills of the low qualified and low skilled to improve employment rates.*
- 2.54 Skills are not a panacea. Keep, Mayhew and Payne (2006) suggest that skills are only one factor that should be developed to achieve productivity gains. There is a need for proper infrastructure, plus appropriate organisation and management to fully exploit the potential contribution of skilled labour. Mason (2005) also reveals that while access to high-level skills may be a necessary condition for moving product strategies up-market, it is not sufficient on its own. Capital as well as skill is often a constraint on the ability to move up-market.
- Skills are not a panacea. Other changes are necessary in order get the most out of skilled labour.*
- 2.55 Many companies are content to ‘muddle along’. Persuading such employers to increase their demand for higher-level skills is therefore often

difficult. In part it is dependent upon demonstrating a business case for doing so. While at an aggregate level, the evidence is compelling – better performing organisations have higher skilled staff – Mason demonstrates the complexity of the relationship between skills and performance, and the difficulty in identifying the policy levers that will help to stimulate employer demand for skills.

- 2.56 Moreover, it is not just about increasing the numbers of highly-skilled workers. This would simply require an emphasis on the supply side. The key problems are: ensuring that these skills are used optimally; demonstrating to employers that they may need to adopt new product strategies to ensure long-term survival; and that these require different skills than may have been appropriate in the past. Evidence from the 2006 *Skills at Work Survey* shows positive changes in the use of skills in the workplace compared to earlier periods. The proportion of jobs ‘using’ Level 3 qualifications increased from 16 per cent in 1986 to 19 per cent in 2006 while the proportion of jobs which did not ‘use’ any qualifications fell from 40 per cent to 31 per cent in this 20-year period. The *Skills at Work Survey* findings indicate that skills use has been continually rising, with increases in both the proportion of workers given long training time for their current type of work, and the proportion saying that their job requires continual learning. From 2001 to 2006, qualification entry requirements and learning time to do jobs have in fact both changed by very little, perhaps reflecting a deceleration in the pace of upskilling. Although demonstrating a significant increase in demand for skills at work over the last 20 years, the *Skills at Work Survey* findings also suggest that there is much ground to be covered in further increasing demand.

*Overall, the use of skills in the workplace is increasing. But there are relatively few policy levers to raise the demand for skills from employers...*

- 2.57 Binks (2006) argues that public procurement can be used as a lever to drive skills and innovation. The public sector is the biggest single purchaser in the UK economy, spending £125 billion a year on private sector goods and services. There is increasing recognition that public sector procurement can have an impact on skills and innovation in contractor companies. Binks uses 15 case studies to explore a wide variety of ways that public procurement can impact on skills and innovation. He also examines the legislative and guidance frameworks for using procurement to raise

*...though public procurement is one such lever.*

demand for skills and innovation. The study also considers the lessons that the public sector can learn from private sector purchasing, providing examples from other European countries on how private and public sector procurement has had an impact on skills and innovation.

2.58 At the heart of successful economies lies investment in education, research and innovation – the ‘knowledge triangle’. It is commonly accepted that there is a positive relationship between R&D investment, innovation and economic growth. Those countries that invest in research and innovation have higher levels of productivity in the long run and higher rates of economic growth (OECD 2001). Such conditions allow for the creation of more jobs and higher incomes.

2.59 The importance of innovation and the role of the higher education (HE) institutions/universities in generating economic growth have been addressed in the Lambert Review (2003). It identified R&D and knowledge and technology transfer as key areas in which employers and universities need to interact if the UK is to remain competitive (Lambert, 2003). In general, it found university–industry collaboration to be hindered in a number of ways:

*The higher education sector, by engaging with employers, can also drive up employers’ demand for skills.*

- protracted negotiations about intellectual property ownership and value; it was felt that some businesses had unrealistic expectations and even expected to benefit for free from intellectual property;
- many businesses were not prepared to bear the full economic costs of research and other activities, seeing higher education as a public good;
- HE funding tended to be short term and uncertain, with the result that higher education institutions were often unwilling to make long-term strategic commitments to business.

### **Making the most of investments in human capital**

2.60 Reynolds *et al.* (2006) argue that there is a causal relationship between training interventions and performance. People and skills are regarded as central to the production process and crucial to any attempts to improve performance.

- 2.61 Tamkin (2005) developed a user guide for the 4A model which is designed to help employers maximise the returns from investments in training and development. (This framework was discussed in greater detail in *Skills in England 2005*.) The model examines the relationship between human resource activities and organisational performance. The 4As are: access (effective resourcing of roles in the organisation), ability (the skills of the workforce), attitude (workplace attributes such as engagement, motivation and morale) and application (the opportunities available to ensure that skills and motivation are effectively applied). While the 4A model helps to address the issue, disentangling the complex relationship between company performance and investment in skills is difficult. A starting point is to examine how investments in human resource development link to organisational performance. The ability to develop an organisational plan, and the ability of management and the workforce to realise that vision, are both dependent upon skill. The ultimate goal is to measure the impact of training investments on profitability or market value. This proves elusive, because profitability can be a fluid concept, and because the relative size of investments in training can be small. Research relating to the Employers Skill Survey 1999 (ESS1999) showed that the strongest link between measures of workforce quality and performance related to the measures companies had set themselves. In practice, many companies tend to have a series of key performance indicators (KPIs) that they use to manage and measure their businesses. This study demonstrates that the best performers were characterised by high-wage, high-skill workforces.
- Persuading employers to invest in skills is dependent upon the business case for doing so. This requires consideration of how the outputs of training can be turned into performance outputs.*
- 2.62 Assessing employers' views about the need for skills and training usually involves some form of survey. At national level, the *National Employer Skills Surveys* (discussed in more detail in Chapter 4) provide useful insights, as does the work being undertaken by the SSCs and the SSDA. Other organisations such as the National Audit Office (NAO) have also surveyed employers, focusing on their views about improving skills for employment.

- 2.63 The NAO (2005) highlights four key messages from employers. Employers want:
- simple ways of getting advice on the best skills training for their staff;
  - training that meets their business needs;
  - incentives to train their staff more;
  - to influence skills training without getting weighed down by bureaucracy.
- 2.64 KPMG's (2002) *Competitive Alternatives* report suggests that the availability of skilled labour was a key factor in making inward investment decisions. There is indirect evidence of the wider benefits of skills to the bottom line, including benefits to shareholders. Bassi *et al.* (2004) tracked the share performance of different companies and found a 50 per cent higher rate of return for those companies which have made and reported high investments in employee skills compared to the norm.
- 2.65 The returns from skills investment needs to be appreciated in the context of wider business and human resource practices. Employers need to examine how investment in skills results in changes in the quality of an individual's job and whether this impacts upon attitudes to work. Herzberg *et al.* (1959) distinguish between hygiene factors (those elements of work, such as pay and physical working conditions, which are necessary just to avoid employee dissatisfaction) and motivation factors which are capable of raising worker productivity. A range of policies needs to be in place to ensure that the capability of the workforce is translated into organisational capability and makes a positive impact on company performance.
- 2.66 Previous *Skills in England* reports also discussed the work of Bosworth, Kling and others who have provided important insights into the benefits of employer-provided training. Kling (1995) and Bosworth (2005) emphasise the effects of three specific working practices: training; compensation linked to worker or firm performance; and employee involvement in decision-making. The evidence supports a positive contribution of all three factors to firm performance. Kling highlights that these factors are mutually reinforcing and that there are synergies between all three.

*Employers need to consider how employees can be motivated so that the skills they possess are used in the most effective manner in the workplace.*

- 2.67 The CIPD lists 18 activities associated with high-performance workplaces (HPWs) (Guest *et al.*, 2000). These activities included the use of psychometric tests for recruitment, the use of regular appraisal, work improvement teams and a variety of other activities. Recent research on HPWs (Sung and Ashton, 2005) classifies them as using:
- human resource management practices to foster involvements in human capital and skill formation;
  - high employee involvement practices to encourage trust and commitment within the organisation;
  - reward and commitment practices that increase an individual employee's stake in the success of the enterprise.

*Effective organisations engage their workforce in decision making.*

- 2.68 Skills alone are not a sufficient condition to bring about improved organisational performance. Employers need to develop the competence of their workforce but they also need to implement practices that allow for effective deployment of employee skills to ensure that the organisation attains the full benefits of training and development.

### **The role of management**

- 2.69 There is evidence that the quality of managers is a key limiting factor in deploying skilled labour effectively in England. A number of studies show that UK managers tend to be less well qualified and receive less training than managers in other European countries and elsewhere (Bosworth 1999, Keep and Westwood 2002; Mabey and Ramirez 2004). Tamkin *et al.* (2006) find that compared to a number of other countries, firms in the UK place the least importance on vocational qualifications as a characteristic of a good manager. It is suggested that UK employers view management education as a filter when recruiting and then place more weight on job experience.

*The quality of management limits the effective deployment of available skills.*

- 2.70 According to Tamkin *et al.* (2006) data on qualifications show that some of the more poorly performing sectors such as hotels and restaurants and retailing have relatively high proportions of managers with no qualifications, while there are few managers with no qualifications in better-performing sectors.

*Poorly performing workplaces are characterised by poorly qualified managers.*



2.71 Tamkin and Denvir (2006) examine how to strengthen the UK evidence base on management and leadership capability. They argue that recent evidence confirms that the UK under-performs with respect to management and leadership skills compared to its main international competitors. This implies that an improvement in this area could help to reduce the UK's productivity gap with the US, France and Germany. They identify the lack of a measurable framework and gaps in the available evidence as one of the key areas that make it difficult to pinpoint the strengths and weaknesses in the UK's management leadership base. The report they produced (commissioned by the Department of Trade and Industry) assesses the evidence base on management and leadership. It makes recommendations as to how it could be improved, with a view to designing and shaping policy to improve UK productivity through better management and leadership.

*As a whole, the country lags behind competitors in management and leadership skills.*

2.72 There is a range of other skills necessary to achieve the goal of England increasing its productivity and becoming more competitive. Surveys such as the National Employers Skill Surveys (NESS) capture many of these skills but there is a wider set of less readily identifiable skills. These include human resource management to create workplace environments that foster creativity and allow the full potential capability of the workforce to be utilised.

### **Geographical considerations: city-regions**

2.73 The link between skills and performance is also important in a regional context. The policy agenda is now very much concerned with city-regions and City Strategies. The concept of the city-region has a long history in location theory and geographical analysis. Essentially, city-regions comprise a central urban core, together with the associated commuting hinterland: that is, they are defined in functional terms as the area over which economic markets (notably labour markets) operate.

*Regional skills policy now has a city-region dimension.*

2.74 Implementation of policy in fields of economic development, skills, planning, transport, physical infrastructure and so on, tends to cut across existing administrative boundaries. Advocates of city-regions contend that the efficiency of sub-regional planning would be improved by aligning investment and planning decisions with functional entities, so

emphasising institutional arrangements at city and regional scales.

- 2.75 Cities have been identified as having the potential to play an important role in driving economic development (HM Treasury, DTI and ODPM, 2006) because they contain the majority of the population and an even greater share of jobs. Through agglomeration economies they provide significant benefits to knowledge intensive manufacturing and service industries that are important to regional and national growth in the global economy. In playing a central role in driving regional and local economic growth, so they are important in addressing regional and sub-regional disparities and tackling deprivation.
- Given current policy, skills will be increasingly viewed in the context of city-regions.*
- 2.76 Growing interest in city-regions should also be seen in the context of debates on 'learning regions' (for example, Morgan, 1997). These highlight that a growing internationalisation of production and the mobility of global capital flows, coupled with the declining regulatory capacity of the nation state, have led to a greater emphasis on economic activity at a regional level, with large cities as the major economic drivers within regions. This shift in territorial development dynamics has been identified in the regional economic development literature as entailing a resurgence of the region through the integration of production at a regional level, the decentralisation of large corporations into clusters of smaller business units and the greater role of smaller businesses as subcontractors and suppliers. The regionalisation of the economy has also been associated with a regionalisation of the institutions regulating economic activity (for example, Regional Development Agencies, the development of a regional tier of the Learning and Skills Council, etc.).
- 2.77 There is a growing literature on research on city-regions (for example, Marvin *et al.*, 2006; Robson *et al.*, 2006). The research argues that the city-region has a greater economic and cultural resonance than administrative regions (which are too large to capture important functional linkages of everyday life) and local authority districts (invariably too small for strategic decision-making in economic development terms). The *State of the English Cities* report (Parkinson *et al.*, 2006) suggested that spatial differences in economic growth are linked to the ability of government, cities and city-regions to understand the key factors at play in creating disparities and in having the ability to act both
- The capacity of individual city-regions to acquire the physical and intellectual capital, and associated infrastructure, to operate in a global economy, will increasingly determine regional economic prospects.*

regionally and locally to address them.

- 2.78 There are no 'official' operational definitions of city-regions in terms of their precise geographical extent, although in some parts of England the concept of city-regions is being put into practice at sub-regional level by cross-local working across groups of local authorities. Some of the DWP City Strategy Pathfinders are operating at city-region scale (see Chapter 5).

## Recent Trends in Employment and the Demand for Skills

### An overview of key changes in the demand for skills

- 2.79 The buoyant economy over the past decade resulted in strong growth in the overall level of employment, which has increased the total demand for skills. This has been accompanied by structural change, in terms of both sectors and occupations, which has also increased the demand for skills. These structural changes reflect many interrelated factors, including technological change, changes in the patterns of world trade (globalisation), increasing specialisation and changing patterns of demand for goods and services produced and distributed in this country. *The economy has been buoyant and has increased the demand for skills.*
- 2.80 *Table 2.1 and Figures 2.1 and 2.2 present key features of changes in employment by sector. Sectoral and other structural changes have favoured computing and related, other business services, professional services, miscellaneous services and construction. The manufacturing and primary sectors have continued to experience job losses. Business and miscellaneous services accounted for more than half of net employment growth in England between 1996 and 2006.*
- 2.81 Even in sectors where employment has been declining, there is a need to replace the workers retiring from the labour force or leaving for other reasons. This 'replacement demand' is typically much greater than any sectoral shifts, and thus serves to heighten demand in the expanding sectors and moderate the impact of decreases in employment in the declining sectors. *Replacement demands are high even in sectors that are in decline.*

- 2.82 Sectoral changes have resulted in changing occupational structures of employment; and technological and organisational changes have altered the occupational structures within sectors. Skill-biased technological change has led to a rapid growth in the absolute numbers and shares of managerial, professional and associate professional occupations. These occupations accounted for 43 per cent of employment in 2006, compared with 37 per cent in 1996. Employment in personal service and sales occupations has also grown, but to a lesser extent. Employment for skilled trades, operatives and elementary occupations fell from 35 per cent to 29 per cent of total employment over the same period.
- There has been a strong growth in the number of people employed in higher-level occupations.*
- 2.83 There have been significant regional disparities in these developments, largely reflecting existing economic structure. Much of the growth in employment has occurred in the South of England. In total, employment in England increased by more than 2.5 million between 1996 and 2006, of which 677,000 was in London and a further 467,000 in the rest of the South East (see *Table 2.1*). In part, the overall increase reflects the recovery from the recession of the early 1990s; but, even so, it represents an exceptional period of growth for many parts of the country.
- Much of the observed employment growth has taken place in the South East.*
- 2.84 Total employment levels are now at an all-time high. At the same time, unemployment levels are lower than at any time since 1973. Much of the employment increase has been for part-time jobs. Nevertheless, such large increases clearly represent a significant growth in the demand for labour, and hence for skills, over the period.

**Table 2.1: Changing broad sectoral employment patterns by region**

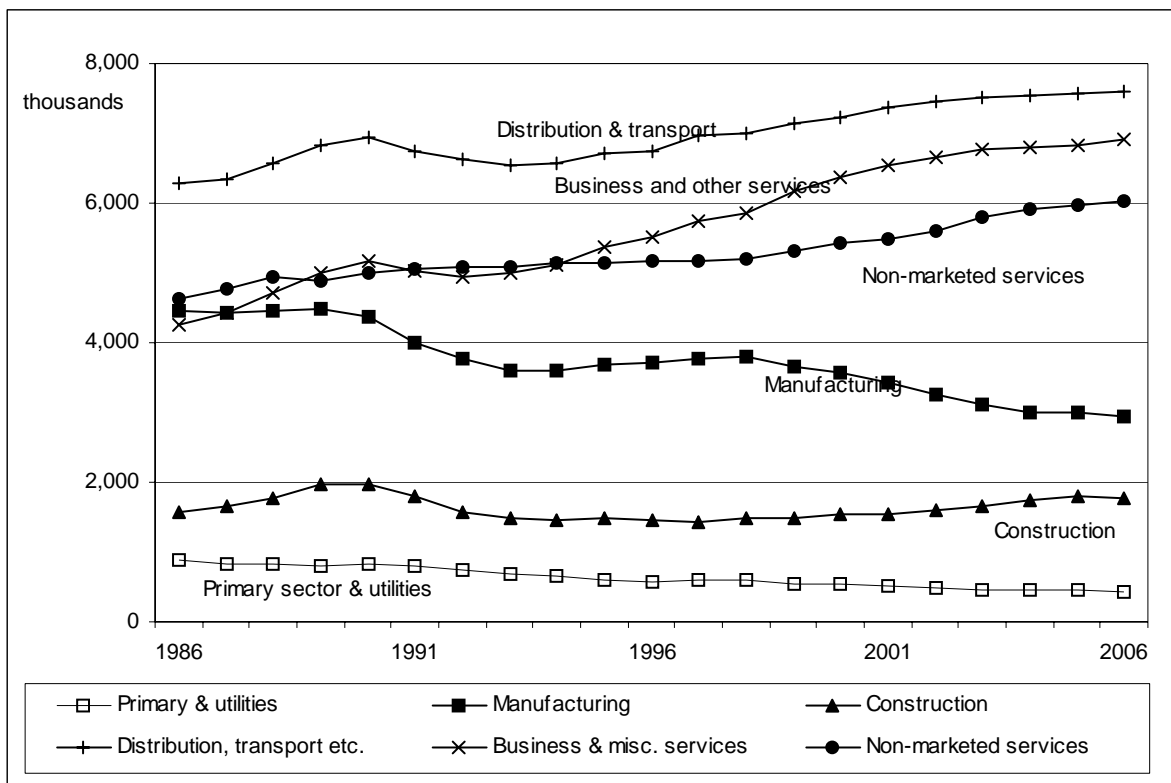
<b>1986-2006</b>														thousands	
	Primary and utilities		Manufacturing		Construction		Distribution, transport etc.		Business & miscellaneous		Non-marketed services		All industries		
	1986-	1996-	1986-	1996-	1986-	1996-	1986-	1996-	1986-	1996-	1986-	1996-	1986-	1996-	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	
London	-24	-9	-188	-65	-40	87	-127	222	301	290	-118	151	-197	677	
South East	-29	-4	-128	-75	-17	51	146	144	270	266	105	85	346	467	
East of England	-22	-16	-86	-65	-9	55	99	106	149	186	48	86	178	351	
South West	-15	-31	-24	-62	-19	33	71	100	122	131	135	87	270	258	
West Midlands	-20	-17	-75	-160	-5	14	118	35	124	84	66	128	208	85	
East Midlands	-59	-20	-53	-100	6	25	66	50	87	69	71	87	118	110	
Yorks & the Humber	-51	-18	-34	-88	9	18	71	44	90	131	93	80	177	167	
North West	-43	-21	-138	-102	-30	26	21	129	92	201	127	114	31	346	
North East	-35	0	-17	-55	-8	5	0	18	19	51	35	44	-6	63	
England	-297	-136	-743	-772	-113	314	465	847	1,252	1,407	561	862	1,125	2,523	

<b>1996-2014</b>														
	Primary and utilities		Manufacturing		Construction		Distribution, transport etc.		Business & miscellaneous		Non-marketed services		All industries	
	1996-	2006-	1996-	2006-	1996-	2006-	1996-	2006-	1996-	2006-	1996-	2006-	1996-	2006-
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
London	-9	-3	-65	-28	87	-2	222	60	290	175	151	28	677	229
South East	-4	-7	-75	-26	51	0	144	92	266	127	85	54	467	239
East of England	-16	-12	-65	-27	55	-6	106	60	186	78	86	26	351	118
South West	-31	-7	-62	-34	33	5	100	48	131	58	87	29	258	98
West Midlands	-17	-10	-160	-41	14	-21	35	38	84	74	128	36	85	76
East Midlands	-20	-4	-100	-31	25	-6	50	31	69	41	87	25	110	56
Yorks & the Humber	-18	-7	-88	-22	18	-25	44	33	131	67	80	18	167	63
North West	-21	-3	-102	-42	26	-10	129	25	201	78	114	26	346	74
North East	0	-2	-55	-14	5	-2	18	18	51	18	44	0	63	18
England	-136	-56	-772	-265	314	-67	847	403	1,407	715	862	241	2,523	971

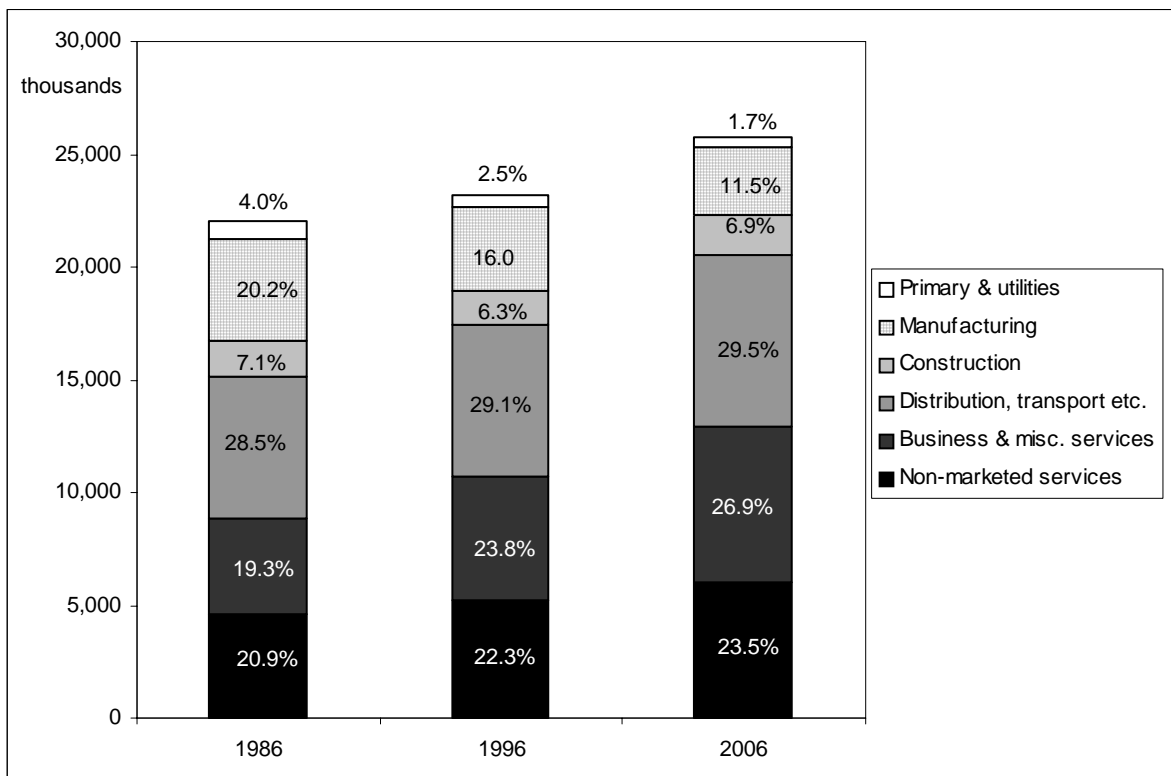
**Source:** IER estimates, based on *Working Futures 2004-2014*, (Wilson *et al.*, 2006).

**Figure 2.1: Employment trends by broad sector, 1986–2006**



Source: IER estimates, based on *Working Futures 2004-2014*, (Wilson et al., 2006).

**Figure 2.2: Structure of employment by broad sector, 1986–2006**



Source: IER estimates, based on *Working Futures 2004-2014*, (Wilson et al., 2006).

## Detailed industry and regional trends

- 2.85 Many traditional areas of employment have experienced dramatic job losses. This has had a direct impact on the demand for a range of skills. Large falls in employment have taken place in the primary and utilities sector (136,000 fewer jobs in 2006 than 1996). Agriculture and mining have borne the brunt of these changes although, more recently, the utilities have also seen sharp job losses, especially following privatisation. The decline in employment has been even greater in manufacturing (772,000 jobs lost over this period). A combination of pressures from international competition and the continuing process of specialisation and sub-contracting has resulted in severe contraction for many parts of the sector.
- Employment has fallen in agriculture, mining, utilities and manufacturing.*
- 2.86 Job losses in the primary and manufacturing sectors have been more than offset by growth in other areas. A significant part of the growth has reflected the process of specialisation in manufacturing. Many functions previously carried out within manufacturing companies are now undertaken by specialist service companies. Such functions include research, design and development, as well as finance, marketing, cleaning, security and catering. Rising real incomes have also resulted in people spending more of their income on leisure and entertainment, as well as on health care and education. This has all been facilitated by technological developments, especially in the areas of information technology, communications and transport, which have resulted in many new products and services while revolutionising many processes.
- 2.87 As a consequence of these various factors, the sectoral pattern of job growth has seen large increases in employment over the period 1996 to 2006 for business services (1.118 million jobs), distribution and transport (847,000) and non-marketed services (862,000), including health and education. *Table 2.2* provides a more detailed analysis. With the exception of professional services, the rate of employment growth in business services from 1996 to 2006 is less than the growth rate from 1986 to 1996. It also highlights the deceleration in the rate of job loss in most primary and manufacturing industries from 1996 to 2006 as compared with the previous decade (with the
- There have been increases in employment in business services, distribution and transport, and non-marketed services.*

exceptions of agriculture and textiles and clothing).

2.88 With the setting up of the Skills for Business network, comprising the SSDA and the various SSCs, the focus of attention is now moving away from industry categories based on the Standard Industrial Classification (SIC) towards a greater emphasis on the *footprints* of the SSCs. The latest *Working Futures, 2004-2014* projections, as well as NESS, are now using these categories as standard. Much of the sectoral analysis later in this chapter focuses upon the SSC-based sectors. The SSC footprints have been translated into a best-fit definition that is still an aggregation of SIC codes. These are used below and defined in *Annex A*. Information on the SIC-based categories adopted by the SSDA in its Sector Skills Matrix is also provided in *Annex A*, along with the more conventional broad SIC-based industry sectors.

**Table 2.2: Changing industrial employment patterns by region, 1996–2006**

	London		South East		East of England		South West		West Midlands	
	000s	%	000s	%	000s	%	000s	%	000s	%
Agriculture	-2	-27.3	-7	-9.9	-14	-23.9	-24	-28.8	-16	-29.3
Mining & quarrying, Utilities - of which:	-7	-43.6	4	15.3	-3	-16.2	-6	-28.6	-1	-5.4
Mining and quarrying	-3	-59.1	-1	-21.3	-2	-39.9	-2	-30.8	-1	-43.2
Electricity, gas & water	-4	-35.7	5	24.4	-1	-5.7	-4	-27.5	1	5.2
Food, drink & tobacco	4	13.5	-6	-18.8	-6	-13.2	-5	-11.3	-3	-9.2
Textiles & clothing	-13	-45.6	-7	-57.8	-7	-44.8	-10	-56.7	-21	-67.0
Wood, paper; Printing & publishing - of which:	-2	-1.5	-11	-12.7	-9	-13.7	-8	-16.5	-9	-20.3
Wood and paper products	-6	-15.5	-5	-7.5	-5	-8.0	-5	-11.3	-4	-3.9
Publishing and printing	5	15.4	-5	-10.0	-4	-9.9	-3	-8.1	-5	-3.5
Chemicals & non-metallic mineral products	-15	-37.2	2	2.4	-10	-17.5	-9	-19.2	-33	-33.2
Metals & metal goods	-11	-37.3	-8	-16.1	-6	-15.1	-9	-23.8	-43	-30.6
Engineering	-18	-37.8	-31	-20.8	-38	-34.4	-22	-25.2	-35	-30.0
Transport equipment	-7	-40.0	-14	-32.8	6	22.1	-1	-3.3	-14	-17.1
Manufacturing nes & recycling	-2	-10.4	1	2.7	5	26.1	2	14.0	-2	-6.4
Construction	87	46.2	51	19.3	55	29.9	33	23.2	14	9.0
Sale & maintenance of motor vehicles	-7	-10.9	-5	-4.9	-1	-1.9	5	7.9	-4	-5.4
Wholesale distribution	22	13.6	24	12.3	3	3.0	2	2.4	-8	-5.6
Other retail distribution	57	17.4	50	12.5	59	22.4	55	23.2	20	8.2
Hotels & Catering	114	53.3	44	18.6	29	20.5	26	15.1	8	6.1
Transport	30	13.8	21	13.6	5	4.3	7	9.6	14	16.8
Communications	6	6.9	10	15.6	11	25.6	6	14.9	4	9.9
Banking & insurance	12	3.8	7	5.1	16	21.9	9	11.1	1	1.4
Professional services	20	16.3	13	12.0	16	23.8	22	49.1	14	31.4
Computing & related	46	67.8	55	68.8	26	77.7	16	70.1	20	87.7
Other business services	163	25.0	133	31.1	86	37.6	56	28.8	26	10.6
Public administration	12	5.4	-4	-2.1	22	23.8	12	9.3	5	4.4
Education	68	30.3	26	8.5	21	11.8	42	23.4	61	33.8
Health & social work	71	20.5	62	16.7	42	18.7	33	13.4	63	28.1
Miscellaneous services	48	16.5	58	27.1	42	31.1	27	21.3	23	19.6
<b>Total</b>	<b>677</b>	<b>17.5</b>	<b>467</b>	<b>12.3</b>	<b>351</b>	<b>14.5</b>	<b>258</b>	<b>11.3</b>	<b>85</b>	<b>3.4</b>

**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

Continued...



**Table 2.2: Changing industrial employment patterns by region, 1996–2006  
(continued)**

	East Midlands		Yorkshire & the Humber		North West		North East		England	
	000s	%	000s	%	000s	%	000s	%	000s	%
Agriculture	-9	-22.6	-12	-27.1	-12	-32.2	-1	-9.2	-98	-23.8
Mining & quarrying, Utilities - of which:	-11	-47.2	-6	-30.4	-9	-48.9	1	10.2	-38	-23.1
Mining and quarrying	-6	-57.7	-2	-26.1	-1	-20.7	-1	-24.2	-19	-38.0
Electricity, gas & water	-5	-39.5	-4	-33.5	-9	-53.9	2	37.6	-19	-16.4
Food, drink & tobacco	9	19.3	-11	-16.3	-6	-8.9	0	-0.5	-26	-6.7
Textiles & clothing	-64	-69.2	-32	-60.0	-38	-56.7	-14	-72.6	-207	-61.0
Wood, paper; Printing & publishing - of which:	-1	-1.2	-4	-6.5	-11	-16.4	-2	-10.2	-55	-10.2
Wood and paper products	1	1.8	-3	-4.1	-12	-10.4	-1	-3.0	-41	-6.7
Publishing and printing	-2	-3.2	-1	-1.2	1	2.4	-1	-2.2	-15	-2.8
Chemicals & non-metallic mineral products	-7	-11.4	-7	-10.6	-15	-13.1	-9	-23.4	-104	-17.2
Metals & metal goods	-13	-25.2	-19	-24.5	-12	-19.9	-10	-29.4	-133	-25.1
Engineering	-24	-32.2	-16	-23.6	-24	-26.5	-19	-41.1	-226	-28.7
Transport equipment	-1	-4.6	-2	-9.5	1	1.4	-2	-11.3	-35	-10.3
Manufacturing nes & recycling	1	4.8	4	14.8	3	13.0	1	15.5	14	7.5
Construction	25	20.4	18	10.9	26	14.8	5	8.0	314	21.5
Sale & maintenance of motor vehicles	-5	-9.4	-8	-12.4	-15	-18.5	0	0.4	-40	-6.9
Wholesale distribution	-3	-3.1	-1	-0.5	8	5.4	0	-0.3	48	4.4
Other retail distribution	24	12.9	39	16.6	49	15.3	11	9.8	363	15.7
Hotels & Catering	1	0.9	-9	-5.6	49	27.5	2	3.8	266	18.9
Transport	31	54.4	20	20.4	32	24.6	-3	-8.7	155	16.3
Communications	2	6.1	1	3.5	6	12.2	9	62.9	54	13.5
Banking & insurance	5	12.8	13	17.6	14	14.5	4	16.1	82	8.7
Professional services	2	6.3	19	59.2	23	45.4	6	33.8	136	25.8
Computing & related	13	80.6	16	103.5	32	139.0	8	152.4	230	80.9
Other business services	27	17.1	55	28.8	100	36.3	23	29.7	670	27.3
Public administration	-1	-0.7	4	3.3	29	19.0	8	11.1	88	7.7
Education	51	38.5	31	17.4	42	17.0	16	18.0	359	20.8
Health & social work	37	18.8	45	19.7	43	12.3	19	15.7	415	18.0
Miscellaneous services	21	23.0	28	23.4	33	19.8	10	18.2	290	22.0
Total	110	5.8	167	7.2	346	11.4	63	6.0	2,523	10.9

**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

## Occupational trends

- 2.89 The share and number of people employed in managerial, professional and associate professional occupations, as well as some sales and service occupations, have increased significantly over the past two decades. These increases have been offset by declines for many lower-level manual and non-manual occupations (see *Figures 2.3 and 2.4*).
- 2.90 These developments are the results of a combination of changing sectoral employment patterns, which have tended to favour service-orientated managerial and professional jobs at the expense of more traditional blue-collar industries. Shifts of occupational structure within industries, which have favoured the same groups, reinforce the trend. In recent years, transformation within industries has been the main factor, driven by technological change and related changes to the way that work is organised. These changes have resulted in greater demand for management skills, communication skills and technical skills. The number of administrative and secretarial jobs has also declined slowly over the last decade in response to increasingly sophisticated IT which has reduced the demand for many lower skilled jobs.
- 2.91 The employment share of managerial, professional and associate professional occupations has increased substantially from 37 per cent to 43 per cent over the last decade, an increase of nearly 2.4 million jobs. In contrast, the share of skilled trades and process, plant and machine operative jobs fell from 22 per cent to 19 per cent, with the loss of around 312,000 jobs (see *Figure 2.4*).
- 2.92 A summary of recent employment change based on the 25 Standard Occupational Classification (SOC) sub-major occupational groups is presented in *Figure 2.5*. Of the 2.4 million additional managerial, professional, and associate professional jobs, around 828,000 have been for corporate managers.
- 2.93 Job numbers have declined dramatically amongst many manual occupations (both skilled and unskilled) although some job losses have also occurred for less skilled white-collar workers in administrative, secretarial and related occupations. In 1996, 35 per cent of all jobs were to be found amongst SOC categories 5, 8 and 9 (skilled trades;
- Employment growth has favoured service-oriented managerial and professional jobs.*
- The number of managerial, professional and associate professional jobs has increased by 2.4m in a decade.*
- The number of manual jobs has decreased dramatically.*

process, plant and machine operators; drivers; and elementary occupations). By 2006 the proportion of employment accounted for by these jobs had fallen to 29 per cent.

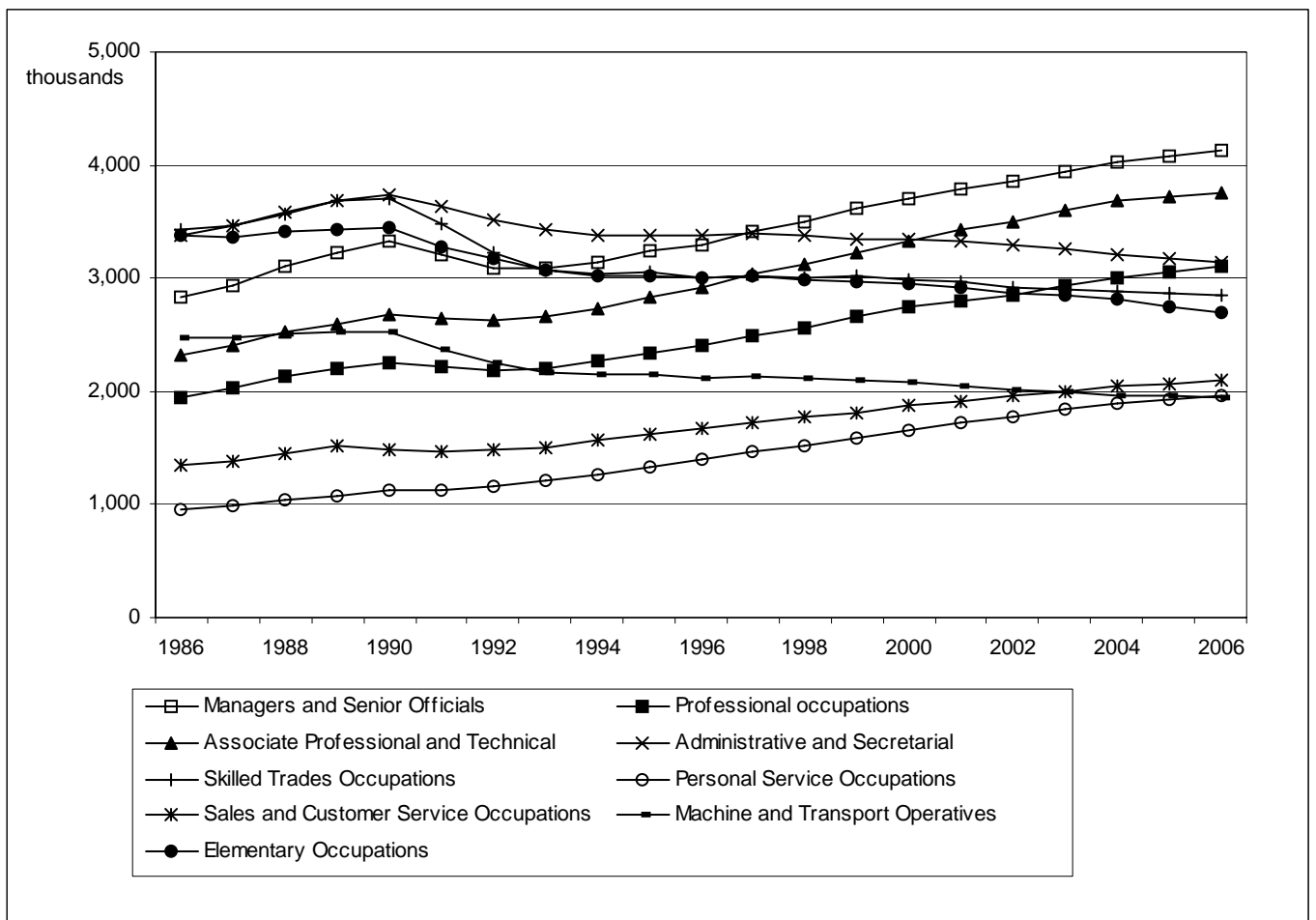
- 2.94 Despite such job losses, many of these occupations still account for a substantial proportion of the workforce. Replacement demand, as a result of labour turnover in these occupations, continues to be a key element of overall labour demand. This poses a problem for many employers, as recruitment of new workers into such jobs is often difficult. The past history of job losses tends to discourage many potential new entrants, as do relatively poor pay and working conditions, in a context of rising aspirations among many young people following their participation in HE. *Replacement demand is significant even for occupations where employment is falling.*
- 2.95 There are some important distinctions in occupational employment structure between men and women. Occupational structure is segregated by gender, with women concentrated in a relatively small number of occupations and many occupations dominated by men. As a result, women have benefited from the recent changes in the structure of employment by sector and occupation, since the main growth areas have been in those sectors and occupations that have tended to employ large proportions of women. By contrast, men have tended to suffer disproportionately from the loss of jobs in many manufacturing and primary sector jobs (and related occupations). These patterns are explored in more detail in the *Working Futures, 2004-2014* reports (Wilson *et al.*, 2006). *Employment growth has favoured those jobs typically taken by women.*

### **Polarisation in the labour market**

- 2.96 Overall changes in the occupational structure of employment suggest that the skill intensity of much work is increasing. Some now argue that there is an increasing polarisation of jobs occurring in the UK and more generally across the developed world. There is certainly a significant tendency towards the strongest growth for jobs requiring either very high or rather low skill requirements. Employment is rising in many high-level occupations but it is also growing amongst a number of lower-skilled occupations. *There is evidence of polarisation in the distribution of skills.*
- 2.97 The reasons for polarisation are complex and reflect the process of structural change which is being driven by technology and competitive pressures. Researchers such as Goos and Manning (2003) *This is reflected in a strong growth for jobs requiring either high or low*

- argue that occupational structure is becoming more polarised because technological change is biased in favour of high-skilled rather than low-skilled jobs. New machinery and equipment can more readily substitute for low-skilled jobs than for high-skilled ones (in which tasks are less easily automated). *skills.*
- 2.98 It is important not to exaggerate these trends. There will still be a large number of jobs at middle level (typically requiring National Qualifications Framework [NQF] qualifications at Level 3), with strong replacement requirements as the present workforce ages. *Figure 2.4* provides evidence of polarisation: a growth in demand for high-level occupations but also for those jobs requiring much more modest levels of skills, including growth in the numbers employed in sales and personal service occupations. Elementary occupations at the bottom of the spectrum have seen some of the largest declines. These trends are expected to continue. Nevertheless it is important to recognise that there will still be a large number of jobs at the middle and lower levels. As Keep and Mayhew (2005) state: “The data on employment trends are open to a range of interpretations, most of which do not support the simple story of an end to low skill work”. *There is a continued growth in the number of low-skilled jobs as well as in the higher-skilled ones.*
- 2.99 Geography is another key dimension of polarisation. There are significant geographical disparities within England. London and the South East continue to exhibit higher proportions of employment in higher-level occupations compared to the Northern and Midlands regions. There are even more significant differences within regions, associated with sectoral structures but also with a strong geographical element. *Polarisation is evidenced in the geographical distribution of skills based around a North-South divide.*
- 2.100 Another aspect of polarisation is the shift toward less permanent forms of working, including temporary contracts, self-employment and part-time working. These trends are discussed in more detail below.
- 2.101 Such polarisation can exacerbate problems of social exclusion, which remains one of the key threats facing the economy and labour market. The problem of social exclusion is discussed in detail in Chapter 5.

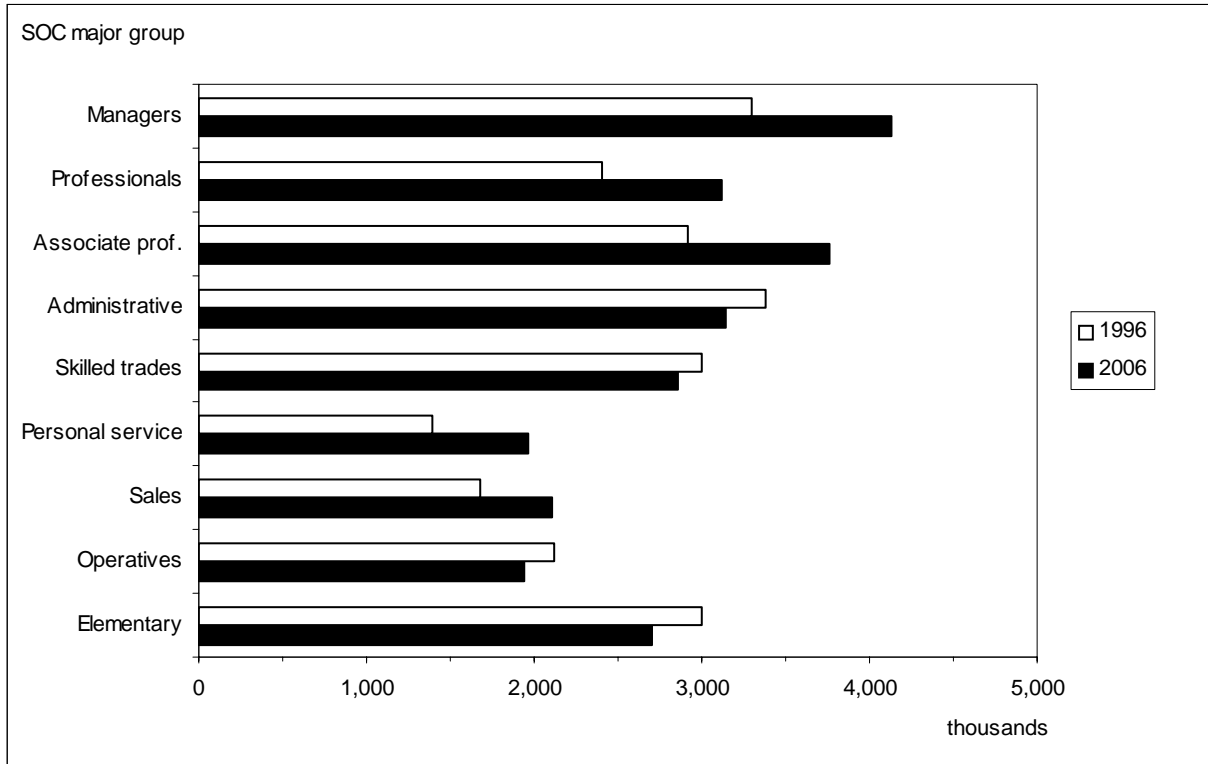
**Figure 2.3: Occupational profiles, 1986–2006**



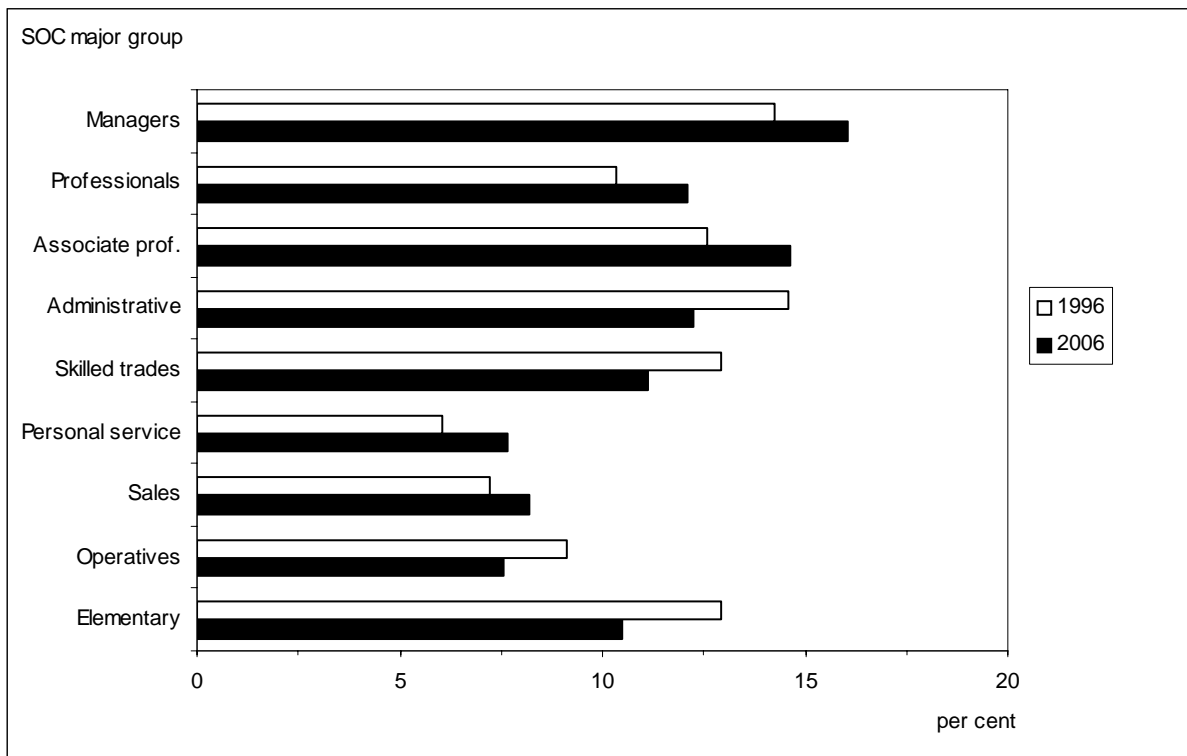
Source: IER estimates, based on *Working Futures 2004–2014*, (Wilson et al., 2006).

**Figure 2.4: Changing occupational structure, 1996–2006**

**Numbers in employment:**

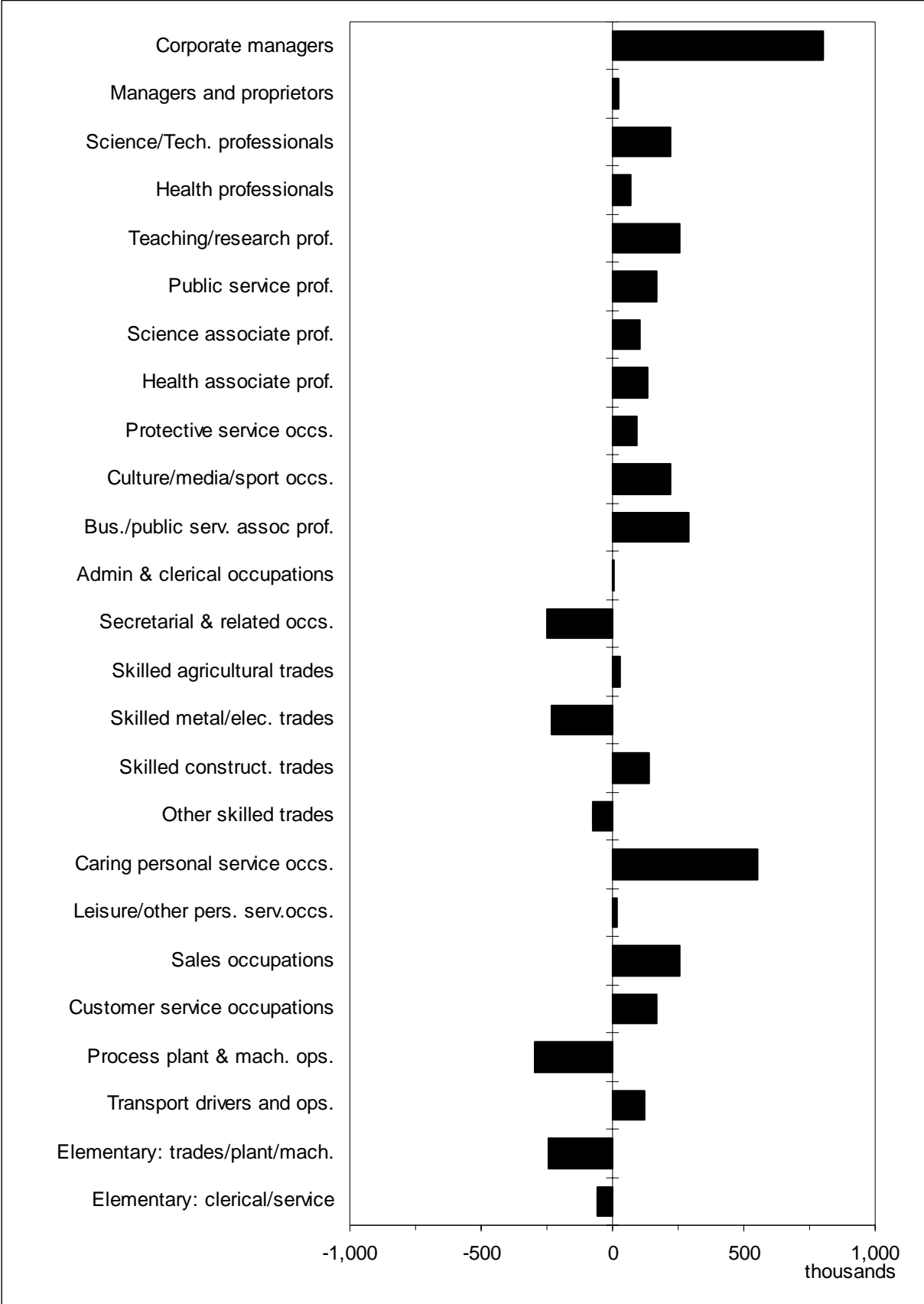


**Shares of total employment:**



**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Figure 2.5: Occupational change by Standard Occupational Classification sub-major group, 1996–2006**



Source: IER estimates, based on *Working Futures 2004–2014*, (Wilson et al., 2006).

## Skills within sectors

- 2.102 There have been substantial shifts in occupational structure within most sectors as shown in *Table 2.3*. The shaded cells highlight those occupations for which the proportion of employment in the sector has declined. All sectors, except primary and utilities, have seen an increase in the proportion of those employed in managerial, professional and associate professional occupations between 1996 and 2006 (see *Figure 2.6*). The increase in the share of managers was fastest in manufacturing and construction, while the share of associate professionals increased most rapidly in business services. The share of professionals increased fastest in non-marketed services and business services.
- 2.103 In contrast, all sectors witnessed a fall in the share employed in administrative and related occupations; transport and machine operatives; and elementary occupations between 1996 and 2006 (see *Table 2.3*). There was a decrease in the share employed in skilled trades in all sectors except primary and utilities, which actually witnessed an increase from 35.6 per cent to 38 per cent. The loss of administrative and secretarial jobs has been fastest in business services. The decline in the employment share of operatives was fastest in manufacturing and slowest in business services and construction.
- 2.104 Looking at more detailed sectors, the rising share of managerial, professional and associate professional jobs between 1996 and 2006 is apparent in almost every industry, as illustrated in *Figure 2.7*. A more detailed analysis of changes in the occupational structure of employment within industries is shown in *Table 2.4*. This reveals that in some service sector industries, the percentage of managers and senior officials fell – for example, in distribution related to motors and in wholesale distribution not elsewhere specified (*nes*). The share of professionals grew across nearly all industries (most rapidly in other business services), but declined in computing and related services, professional services, distribution relating to motors, and wholesale distribution *nes*. There was growth in the share of associate professionals in all sectors including agriculture. Growth in associate professionals was fastest in miscellaneous services.

*The increase in people employed in higher-level occupations is evident across almost all sectors.*



2.105 The share of skilled trades occupations decreased in all sectors except agriculture, textiles and clothing, manufacturing *nes* and recycling, and retail distribution *nes*. The greatest increase in the share of skilled trade occupations took place in agriculture. The percentage in customer service occupations declined in food drink and tobacco, publishing and printing, and retail distribution *nes*. It increased in all other industries with the largest gains in distribution relating to motors, and wholesale distribution *nes*. The decline in the share of process, plant and machine operatives was greatest in textiles and clothing, and the decline in employment share for elementary occupations was greatest in hotels and catering, miscellaneous services, education and agriculture.

**Table 2.3: Occupational structure within broad sectors, 1996–2006**  
 % employed in each occupation

	Primary sector & utilities		Manufacturing		Construction		Distribution & transport		Business & other services		Non-marketed services		All industries	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
1. Managers and Senior Officials	10.6	9.9	12.2	15.0	10.7	13.5	18.0	19.5	17.0	18.5	9.2	10.6	14.2	16.1
2. Professional occupations	3.6	3.8	6.0	6.8	4.8	5.6	2.5	2.9	12.0	14.2	24.2	26.4	10.3	12.1
3. Associate Professional and Technical	3.9	4.5	9.5	11.9	4.7	5.8	6.7	7.9	17.0	19.9	20.9	21.7	12.6	14.6
4. Administrative and Secretarial	6.4	6.0	9.4	8.4	7.9	6.6	10.7	9.6	25.2	19.4	14.9	11.3	14.6	12.2
5. Skilled Trades Occupations	35.6	38.0	23.2	21.6	50.6	47.8	12.2	10.5	4.6	4.3	2.2	1.8	12.9	11.1
6. Personal Service Occupations	4.4	6.3	1.4	1.6	0.4	0.5	2.9	3.7	6.8	7.9	14.4	17.5	6.0	7.7
7. Sales and Customer Service Occupat	1.6	2.4	2.5	3.0	1.0	1.3	18.9	20.6	3.8	4.6	1.4	1.6	7.2	8.2
8. Machine and Transport Operatives	10.1	8.6	24.0	21.4	10.9	10.7	9.9	9.2	4.0	3.8	2.3	2.0	9.1	7.6
9. Elementary Occupations	23.6	20.5	11.7	10.3	9.1	8.2	18.1	16.1	9.6	7.3	10.5	7.1	12.9	10.5
All occupations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100	100.0	100.0	100
Managerial, professional & associate professional	18.2	18.2	27.7	33.7	20.2	24.9	27.3	30.3	46.0	52.7	54.2	58.6	37.2	42.8

**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Note:** Shaded cells indicate occupations where the proportion of employment in the sector has declined between 1996 and 2006.

**Table 2.4: Occupational structure within industries, 1996–2006**

	percentage of occupation in each industry									
	Managers and Senior Officials		Professional occupations		Associate Professional and Technical		Administrative and Secretarial		Skilled Trades Occupations	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
Agriculture etc	10.6	8.9	1.0	0.9	1.9	2.1	2.5	2.8	40.0	43.9
Mining, quarrying & utilities - of w hich:	10.8	12.5	10.3	11.0	9.2	10.4	16.3	14.1	24.7	23.2
Mining and quarrying	12.5	13.4	8.1	7.3	8.8	10.1	8.4	10.1	24.5	24.0
Electricity, gas & w ater	9.7	12.0	10.9	12.2	8.9	10.6	19.8	15.7	25.4	23.0
Food, drink & tobacco	10.1	14.4	3.3	4.4	7.3	9.1	10.7	7.7	15.8	15.1
Textiles & clothing	10.7	18.1	2.0	3.5	6.1	9.5	8.4	6.1	13.2	15.3
Wood, paper & publishing - of w hich:	13.2	17.5	3.4	4.2	14.2	19.5	14.5	9.8	21.2	18.6
Wood and paper products	13.6	15.7	3.2	3.4	10.4	12.0	9.8	9.3	31.0	29.0
Publishing and printing	12.7	17.8	3.5	4.5	15.2	22.3	16.7	10.6	16.9	14.1
Chemicals & non-metal minerals	12.6	14.2	7.0	7.7	10.1	11.5	9.3	9.1	16.7	15.0
Metal & metal goods	12.4	14.3	5.7	6.2	7.0	8.4	5.4	6.9	33.4	29.5
Engineering	14.4	16.5	9.9	10.9	11.5	13.2	10.1	9.2	24.6	22.1
Transport equipment	9.1	10.3	8.1	9.1	8.1	9.4	5.3	7.6	33.5	28.3
Manufacturing nes & recycling	11.7	14.7	2.8	3.4	6.3	7.6	10.2	7.5	30.3	34.3
Construction	10.7	13.5	4.8	5.6	4.7	5.8	7.9	6.6	50.6	47.8
Distribution relating to motors	26.3	21.3	3.2	2.9	8.6	8.2	4.5	5.1	18.2	13.4
Wholesale distribution nes	25.1	21.2	3.1	3.0	8.6	8.6	6.0	6.3	16.9	12.5
Retailing distribution nes	13.2	17.4	1.9	2.7	6.7	8.6	13.9	9.6	7.1	7.9
Hotels and catering	25.5	29.2	1.1	1.4	4.1	5.6	7.3	6.0	10.9	10.6
Transport and storage	10.3	12.2	4.3	4.6	7.9	9.2	13.6	16.1	13.4	10.2
Post & telecommunications	7.0	8.1	4.6	4.7	6.1	6.8	18.4	20.6	21.9	17.0
Banking & insurance	14.2	15.2	7.3	8.3	12.0	12.9	48.3	43.5	3.0	2.8
Professional services	20.5	20.5	16.8	16.7	19.8	21.0	18.7	15.2	5.3	4.4
Computing & related services	21.5	19.6	22.2	19.5	20.3	20.0	15.3	20.0	6.5	4.9
Other business services	16.5	19.4	13.1	16.1	17.2	20.7	26.5	17.8	4.6	4.6
Public admin and defence	11.9	14.1	9.9	10.7	19.5	22.0	31.5	26.6	4.1	3.2
Education	4.7	5.9	50.5	53.0	11.9	13.2	8.1	5.9	1.3	1.2
Health & social w ork	11.2	12.6	11.7	13.1	28.2	28.0	11.9	8.4	1.9	1.7
Miscellaneous services	17.4	17.7	9.4	11.6	18.4	22.5	11.1	8.7	5.0	4.6
All industries	14.2	16.1	10.3	12.1	12.6	14.6	14.6	12.2	12.9	11.1
000s	3,302	4,129	2,401	3,114	2,919	3,761	3,384	3,143	2,998	2,858

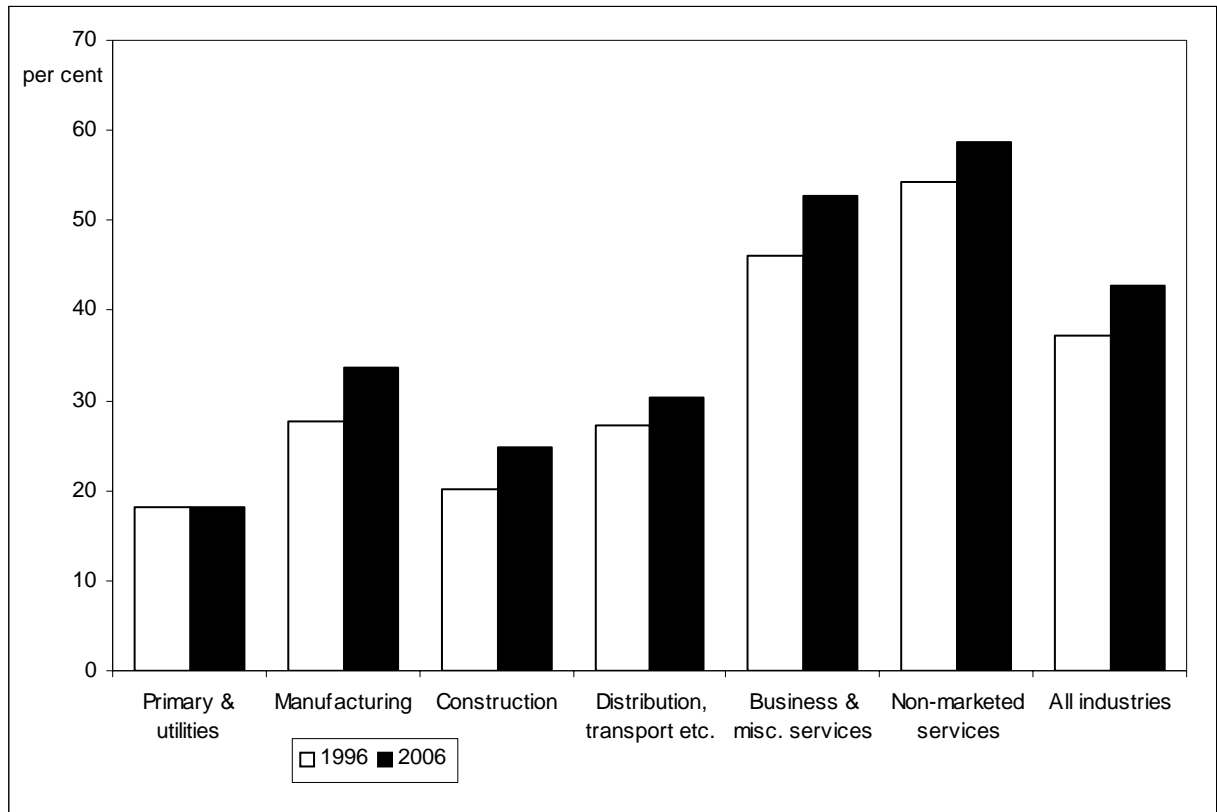
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**Table 2.4: Occupational structure within industries, 1996–2006  
(continued)**

	percentage of occupation in each industry									
	Personal Service Occupations		Sales and Customer Service		Process, Plant and Machine Operatives		Elementary Occupations		All occupations (100%) 000's	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
Agriculture etc	5.5	8.0	0.7	0.9	8.5	7.0	29.3	25.5	412	314
Mining, quarrying & utilities - of w hich:	1.5	1.9	3.7	6.1	14.2	12.8	9.4	8.0	163	126
Mining and quarrying	1.2	2.1	1.3	2.1	22.1	19.6	13.1	11.3	50	31
Electricity, gas & w ater	1.7	1.9	4.8	7.2	10.7	10.5	8.0	6.9	135	96
Food, drink & tobacco	0.7	0.7	7.8	6.5	26.4	27.0	17.9	15.1	383	357
Textiles & clothing	2.3	2.5	1.9	2.2	42.7	30.7	12.6	12.0	339	132
Wood, paper & publishing - of w hich:	2.3	2.4	3.6	3.5	17.3	16.4	10.4	8.1	545	489
Wood and paper products	1.4	1.8	2.2	2.9	19.0	18.1	9.3	7.8	190	149
Publishing and printing	2.6	2.7	4.0	3.9	17.2	15.5	11.2	8.5	348	341
Chemicals & non-metal minerals	1.6	2.2	2.0	2.8	26.5	25.2	14.1	12.4	606	501
Metal & metal goods	0.9	1.0	1.1	1.8	22.8	21.6	11.3	10.3	529	396
Engineering	1.1	1.5	1.8	2.5	18.3	16.6	8.4	7.3	788	561
Transport equipment	0.8	1.2	0.9	1.7	22.9	21.7	11.1	10.8	343	308
Manufacturing nes & recycling	0.9	1.0	2.0	2.2	25.0	20.7	10.7	8.4	191	205
Construction	0.4	0.5	1.0	1.3	10.9	10.7	9.1	8.2	1,459	1,773
Distribution relating to motors	2.7	3.5	14.9	27.0	10.7	8.7	10.8	9.9	581	541
Wholesale distribution nes	3.1	4.4	16.6	26.3	10.0	8.2	10.7	9.6	1,085	1,133
Retailing distribution nes	2.4	2.9	39.3	36.0	4.8	5.6	10.8	9.4	2,317	2,680
Hotels and catering	4.0	4.3	4.7	5.3	1.5	2.0	41.0	35.6	1,408	1,674
Transport and storage	3.1	4.6	2.0	3.5	29.5	26.3	15.9	13.3	954	1,110
Post & telecommunications	2.1	3.1	3.6	6.1	20.8	19.3	15.5	14.4	403	458
Banking & insurance	1.3	1.4	6.7	8.7	1.9	1.8	5.4	5.3	938	1,020
Professional services	5.8	9.1	2.7	3.7	3.7	3.4	6.7	6.0	527	662
Computing & related services	1.7	2.7	2.5	4.5	4.3	3.5	5.7	5.2	284	514
Other business services	6.3	7.0	3.7	4.3	3.6	3.6	8.6	6.6	2,453	3,123
Public admin and defence	3.7	5.2	1.8	2.5	3.9	3.2	13.7	12.4	1,141	1,229
Education	9.1	10.6	1.0	1.1	2.0	2.0	11.5	7.2	1,724	2,083
Health & social w ork	23.6	28.2	1.5	1.7	1.8	1.5	8.3	4.7	2,313	2,728
Miscellaneous services	12.9	15.1	2.8	3.0	6.3	5.6	16.6	11.3	1,315	1,604
All industries	6.0	7.7	7.2	8.2	9.1	7.6	12.9	10.5	100.0	100.0
000s	1,399	1,970	1,678	2,103	2,117	1,946	3,003	2,699	23,200	25,723

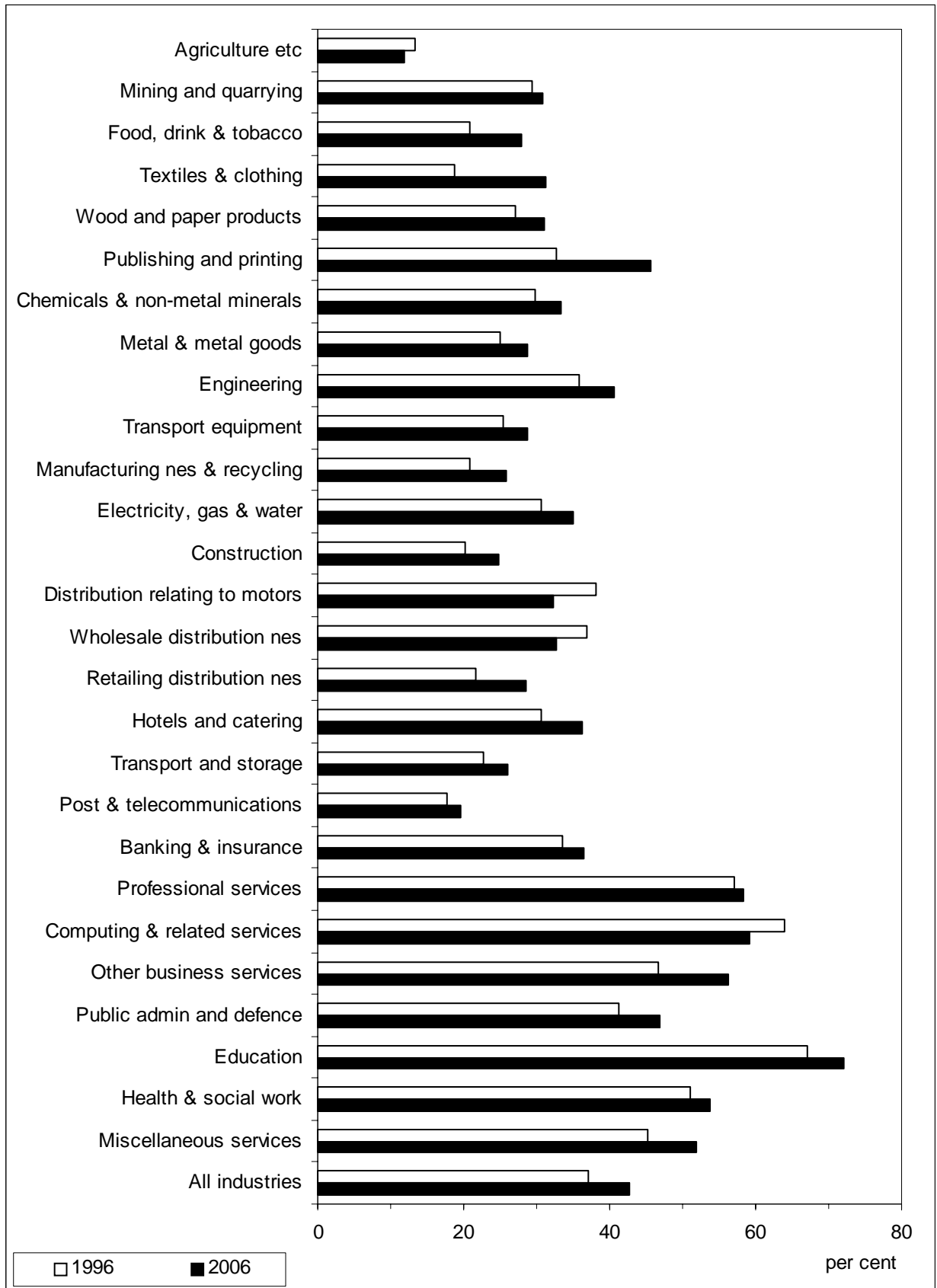
**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Figure 2.6: Proportion of employment of managerial, professional and associate professionals by sector, 1996 and 2006**



**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Figure 2.7: Proportion of employment of managerial, professional and associate professionals by industry, 1996 and 2006**



Source: IER estimates, based on *Working Futures 2004–2014*, (Wilson et al., 2006).

## Regional and local trends

- 2.106 The patterns of sectoral change described above are repeated across most regions of England, as shown in *Tables 2.1* and *2.2*. Some regions have been disproportionately affected because of their specialisation in both the primary and manufacturing sectors. As shown in *Table 2.3*, the Midlands and the Northern regions, together accounted for almost two-thirds of the job losses in manufacturing. The West Midlands, East Midlands, and North West each lost 100,000 or more manufacturing jobs between 1996 and 2006. There were losses of 88,000 and 55,000 jobs in Yorkshire and the Humber and the North East, respectively, over the same period. All regions lost manufacturing jobs, but the extent of job loss was least in the Southern regions, which to a much greater extent specialise in service sector industries. The increase in the number of business and miscellaneous services jobs over this period was greatest in London, the South East, the East of England, and the North West. The growth in non-marketed services was fastest in London, the North West and the West Midlands.
- The sectoral distribution of employment has a regional dimension.*
- 2.107 Total employment growth has been much stronger in Southern and Eastern regions of England, followed by the North West. This is reflected in *Table 2.5*, which shows the main changes in occupational employment by region. The shaded cells indicate those occupations where total employment has fallen over the decade since 1996. All regions experienced net employment gains between 1996 and 2006, but nearly 70 per cent of the growth in employment occurred in the four Southern regions (London, South East, South West and East of England).
- The North and Midlands have lost most from the decline in manufacturing employment.*
- 2.108 To an extent, these changes reflect the regional variations in sectoral employment trends illustrated in *Table 2.1*. These have had significant implications for occupational trends at the regional level. Recognising that there are important differences in terms of sectoral structure, similar patterns emerge for all regions in terms of the patterns of growth and decline for particular occupations.
- 2.109 Further information on regional and local patterns is presented in Volume 4 of *Skills in England*, as well as in the *Working Futures 2004–2014: Spatial Report* (Green *et al.*, 2006).

**Table 2.5: Occupational change within the regions, 1996–2006.**

thousands

	London	South East	East of England	South West	West Midlands	East Midlands	Yorks & the Humber	North West	North East	England
Managers	219	159	110	70	44	54	57	89	26	828
Professionals	196	90	64	68	61	57	57	96	24	713
Associate prof.	249	134	90	67	72	48	59	93	29	842
Administrative	-107	-53	1	-20	-23	-26	-8	4	-7	-241
Skilled trades	16	-2	-3	-5	-57	-34	-23	-22	-11	-140
Personal service	67	99	65	63	69	53	54	81	21	571
Sales	71	75	46	56	26	29	42	62	18	425
Operatives	-21	-11	-7	-12	-46	-28	-15	-20	-12	-172
Elementary	-12	-24	-15	-28	-61	-44	-57	-36	-26	-303
All	677	467	351	258	85	110	167	346	63	2,523

**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Note:** Shaded cells indicate occupations where the number in employment has declined.



## Other Aspects of Changing Skill Needs

### Qualification

- 2.110 Occupation is just one aspect of skill. Qualifications are also an important indicator of changes in skill demand and supply. The numbers and proportions of those in the employed workforce holding formal qualifications have risen sharply in recent years. In part this is simply a reflection of supply, as discussed in Chapter 3. Increasing numbers of young people, in particular, have been acquiring qualifications at NQF Levels 4 and 5 and these have tended to increase their chances of finding employment. Some have argued that this has resulted in over-qualification, with many graduates, in particular, taking on jobs that do not require a degree. This issue is discussed in Chapters 3 and 4. The focus here is on describing the changing patterns of those in employment.
- The number of people in the workforce with formal qualifications has grown markedly over recent years.*
- 2.111 One factor helping to drive up the number of jobs for graduates has been shifts in occupational employment structure in favour of occupations such as managers, professionals and associate professionals. These occupations employ large proportions of graduates and other qualified people. Between 1996 and 2006, total employment in these higher-level occupational categories grew by around 2.4 million.
- There has been a strong growth in the demand for graduates.*
- 2.112 The numbers qualified at intermediate and lower levels have also risen, but a substantial (albeit declining) proportion still has no formal qualifications (see *Tables 2.6 and 2.7 and Figure 2.8*). In 1996, over 82 per cent of the employed workforce had formal qualifications of some kind; by 2006 this had risen to more than 90 per cent, with almost 60 per cent of the employed workforce qualified to at least NQF Level 3. Just less than 10 per cent of the workforce still has no formal qualifications. Despite the recent fall in this proportion, almost 30 per cent of those in employment are still qualified below NQF Level 2.
- More than 90 per cent of the workforce in employment now has qualifications.*
- 2.113 There has also been a significant improvement in the number of vocational qualifications held by those in employment. Many new qualifications have been introduced and the flow of those obtaining A-levels and other NQF Level 3 qualifications has risen steadily.

**Table 2.6: Qualifications held by those in employment, 1996 and 2006**

Qualifications	000s		%	
	1996	2006	1996	2006
No Qualification	3,782	2,284	17.7	9.7
NQF 1 , GCSE (below grade C)	3,508	3,440	16.4	14.6
NQF 1 , GNVQ foundation	3	12	0.0	0.1
NQF 1 , BTEC 1st certificate etc	841	832	3.9	3.5
NQF 1 total	4,352	4,284	20.3	18.1
NQF 2 , GCSE(grades A-C)	2,482	2,881	11.6	12.2
NQF 2 , GNVQ intermediate	26	110	0.1	0.5
NQF 2 , BTEC 1st diploma etc	2,094	2,178	9.8	9.2
NQF 2 total	4,602	5,169	21.5	21.9
NQF 3 , A level & equivalent	1,094	1,580	5.1	6.7
NQF 3 , GNVQ advanced	20	164	0.1	0.7
NQF 3 , ONC BTEC national etc	2,386	2,796	11.1	11.8
NQF 3 total	3,500	4,540	16.3	19.2
NQF 4 , First degree & equivalent	2,377	3,528	11.1	14.9
NQF 4 , HE below degree level	383	450	1.8	1.9
NQF 4 , HNC BTEC & RSA higher etc	852	1,042	4.0	4.4
NQF 4 , Nursing and teaching	763	633	3.6	2.7
NQF 4 total	4,375	5,653	20.4	23.9
NQF 5 , Higher degree	802	1,689	3.7	7.1
Total	21,414	23,619	100.0	100.0

**Source:** IER estimates based on the *Labour Force Survey*, Spring 1996 and 2006.

**Notes:** Highest NQF qualification held for all those in employment. The figures are sensitive to the treatment of certain responses to LFS questions. 'Don't knows' are included here with those reporting no qualifications. Some low-level qualifications that do not attain NQF 1 status are also included in the 'no qualification' category. In total these differences boost the 'no qualifications' category by almost 1 percentage point.

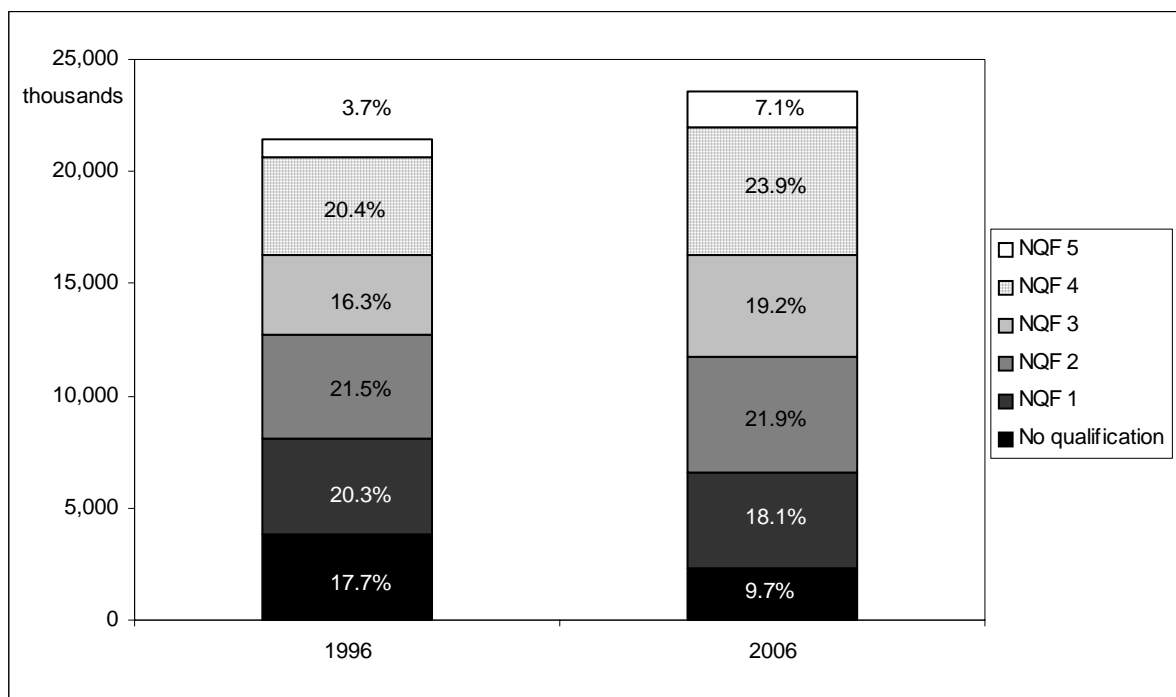
**Table 2.7: Qualification level by occupation, 1996 and 2006**

	NQF 5		NQF 4		NQF 3		NQF 2		NQF 1		No qualification		Total	
	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006	1996	2006
1 Managers and Senior Officials	134 4.7	342 9.2	803 28.1	1,236 33.3	529 18.5	730 19.7	594 20.8	688 18.6	464 16.2	502 13.5	332 11.6	210 5.7	2,856 100.0	3,707 100.0
2 Professional occupations	462 19.2	938 30.0	1,393 57.9	1,572 50.3	193 8.0	264 8.4	190 7.9	188 6.0	120 5.0	134 4.3	47 2.0	31 1.0	2,407 100.0	3,127 100.0
3 Associate Professional and Technical	108 4.1	268 7.9	1,040 39.3	1,505 44.1	398 15.1	585 17.1	480 18.1	583 17.1	383 14.5	389 11.4	235 8.9	85 2.5	2,644 100.0	3,415 100.0
4 Administrative and Secretarial	35 1.2	71 2.5	406 13.3	484 16.8	451 14.8	531 18.4	812 26.6	859 29.7	920 30.1	745 25.8	430 14.1	201 6.9	3,055 100.0	2,891 100.0
5 Skilled Trades Occupations	21 0.7	19 0.8	222 7.7	226 9.1	835 29.1	878 35.2	778 27.1	627 25.2	457 15.9	426 17.1	555 19.4	316 12.7	2,868 100.0	2,491 100.0
6 Personal Service Occupations	19 1.5	23 1.3	162 12.6	292 15.7	199 15.4	458 24.7	313 24.2	565 30.5	327 25.3	354 19.1	271 21.0	161 8.7	1,290 100.0	1,853 100.0
7 Sales and Customer Service Occupations	12 0.4	10 0.5	187 6.6	163 9.0	450 15.9	371 20.4	701 24.8	568 31.3	754 26.7	447 24.6	720 25.5	259 14.2	2,824 100.0	1,817 100.0
8 Process, Plant and Machine Operatives	3 0.4	9 0.5	36 5.3	76 4.4	95 14.0	332 19.0	149 22.0	475 27.1	194 28.6	546 31.1	201 29.6	314 17.9	677 100.0	1,753 100.0
9 Elementary Occupations	8 0.3	10 0.4	140 4.7	120 4.5	363 12.2	405 15.2	642 21.5	643 24.2	792 26.6	767 28.8	1,036 34.7	717 26.9	2,980 100.0	2,661 100.0
Total	802 3.7	1,691 7.1	4,389 20.3	5,673 23.9	3,514 16.3	4,553 19.2	4,658 21.6	5,196 21.9	4,410 20.4	4,309 18.2	3,826 17.7	2,292 9.7	21,600 100.0	23,715 100.0

**Source:** *Labour Force Survey*, Spring 1996 and 2006.

**Note:** See *Table 2.6*. Those with no known occupation are excluded here.

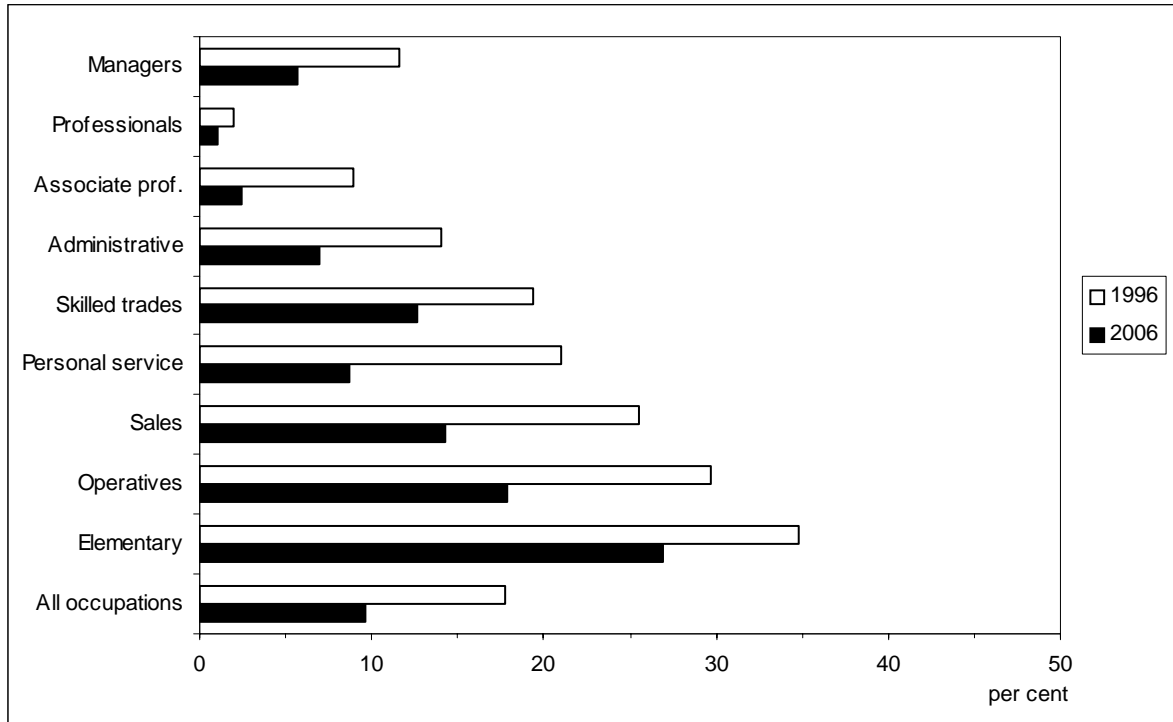
**Figure 2.8: Qualifications of individuals in employment, 1996 and 2006**



**Source:** *Labour Force Survey*, Spring 1996 and 2006.

**Note:** See *Table 2.6*.

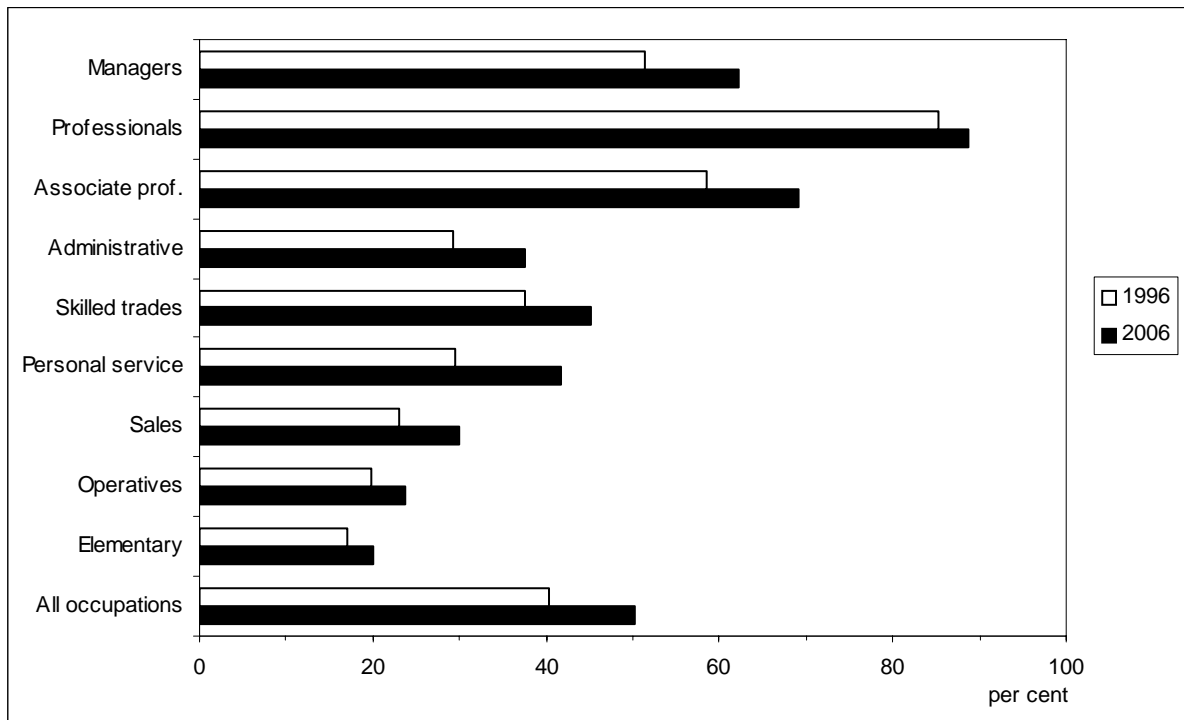
**Figure 2.9: Percentage of employees with no qualifications by occupation, 1996 and 2006**



Source: Labour Force Survey, Spring 1996 and 2006.

Note: See Table 2.6.

**Figure 2.10: Percentage of employees qualified to NQF Level 3 and above by occupation, 1996 and 2006**



Source: Labour Force Survey, Spring 1995 and 2006.

Note: See Table 2.6.

- 2.114 The overall proportion of the employed workforce with NQF Level 2 as their highest-level qualification actually fell slightly between 1996 and 2006, while the corresponding figure for those with NQF Level 3 as their highest qualification only rose modestly. Of course the overall numbers of people holding qualifications at NQF Level 2 and 3 have risen substantially – it is just that many of these go on to acquire even higher qualifications.
- 2.115 All occupational groups are becoming better qualified as measured, for example, by the proportion of employees with no formal qualifications or the proportion qualified to NQF Level 3 and above (see *Figures 2.9 and 2.10*). Personal service occupations exhibited the greatest improvements in terms of the largest increase in the proportion holding NQF Level 3 or higher and the largest decrease in the share with no qualifications. *All occupational groups are now becoming more qualified.*
- 2.116 For higher-level qualifications, the fastest increases have been amongst professional occupations (NQF Level 5), managers (NQF Levels 4 and 5) and amongst associate professionals (NQF Level 4). There has also been a general increase for NQF Levels 3 and 4 across many occupations, including administrative and secretarial and sales occupations. The percentage in professional occupations with NQF Level 4 actually decreased from 1996 to 2006, but this was more than offset by a growth in the proportion with higher degrees (NQF Level 5).
- 2.117 Higher-level qualifications (NQF Levels 4 and 5) are heavily concentrated amongst particular occupational categories (most notably professional occupations). The proportions qualified at this level have also risen in other occupations (especially amongst associate professional groups). For example teachers, and more recently nurses, have seen moves towards an all-graduate profession. As noted earlier, some have argued that this represents qualifications inflation. The more general consensus is that it reflects real changes in the requirements of the jobs. This issue is discussed in more detail in Chapter 4. *An increasing number of occupations are becoming graduate ones.*
- 2.118 Qualifications at NQF Level 3 remain significant amongst managers, skilled trades, personal service, and sales and customer service occupations. In all of these, around 20 per cent or more of the employed workforce is currently qualified at that

level. For skilled trades it is even higher at around 35 per cent.

2.119 Lower-level qualifications are spread much more evenly across all occupations. The proportions holding no formal qualifications have fallen sharply in all occupations, as shown in *Figure 2.8*. It is notable, however, that there are still significant numbers of people in high-level occupations who hold few formal qualifications. For example, more than 30 per cent of managers are still only qualified to NQF Level 1 or Level 2. This is largely due to an age-cohort effect where older people are less likely to have qualifications.

2.120 According to the latest *Skills at Work Survey*, between 1986 and 2006 the difference between the supply of graduates and the number of jobs requiring graduates for entry rose from less than 300,000 to 1.1 million. This change can largely be attributed to the supply of graduates outpacing the growth of jobs where jobholders perceive degrees to be required for entry. Differences between a person's attained qualification level and the level required to get a job do not necessarily indicate that the skills of a person are too high or too low for the particular job. Required qualifications are only one measure of the skills needed for a job. Some qualifications may help a person obtain a job even if they are not formally required. For instance, some of the expansion of graduates may have been absorbed into the labour market without a rise in the under-utilisation of skills, as new graduates are likely to possess skills not necessarily captured in the employers' qualification requirements. Around 24 per cent, of those people who had jobs which did not require qualifications, had received either a total of more than a year's cumulative training, or were in jobs requiring more than one year of learning time to do well.

*There has been concern about the over-supply of graduates, but this may be misplaced.*

## Key and generic skills

- 2.121 In recent years there has been an increasing emphasis on the importance of key and generic skills. When questioned, employers continue to place considerable emphasis upon skills such as communication, IT, team working, problem-solving and reasoning, rather than formal qualifications. Many of the Skills Needs Assessments conducted by SSCs and others also suggest significant changes. Employers often stress the importance of verbal and communication skills for managers, numerical skills for clerical and secretarial occupations and customer-handling skills for sales occupations. This is reflected in a similar interest at international level, with the US investing considerably in its O\*NET system and the OECD commissioning a new international study of demands for key and generic skills based on the approaches developed by Francis Green and others in the UK.
- Employers highly value generic skills such as communication and problem-solving skills.*
- 2.122 The recent UK *Skills at Work Survey* (Felstead *et al.*, 2007) sheds new light on these issues. Measures of generic skills have been included in the *Skills Survey* since 1997. The survey findings on generic skills complement declining employment in occupations associated with manual tasks, but also demonstrate changing skill requirements within occupations. From 1997 to 2001, of the various generic skills, the use of computing skills increased most. The importance of physical skills did not change in that four-year period. The results of the 2006 *Skills at Work Survey* indicate that checking and horizontal communication skills are used in over 70 per cent of all jobs. Aesthetic and emotional skills are used in 52 and 65 per cent, respectively, of all jobs while influence skills, number skills and physical skills are used in between 20 and 30 per cent of all jobs. From 1997 to 2006, there has been increased importance placed on all generic skills except physical skills.
- The importance attached to generic skills by employers is increasing.*



2.123 The prevalence of the use of generic skills varies somewhat between occupations and industries, as well as by gender. Though neither men nor women dominate in terms of all skills, there are some marked differences between the sexes. Women exceed men in the use of emotional skills, somewhat less so in the use of horizontal communication skills. Men exhibit more technical know-how and more emphasis on physical, number and problem-solving skills than women. With respect to cross-industry variation in the use of generic skills, the 2006 *Skills Survey* shows that emotional and aesthetic skills are put to use most in the service industries while influence, planning and literacy skills are especially prevalent in 'Education'. Problem-solving skills and technical know-how are most important in 'Construction' and 'Manufacturing'. A number of other industry-specific uses of generic skills are presented in Felstead *et al.* (2007).

*The prevalence of the use of generic skills varies somewhat between occupations and industries, as well as by gender.*

2.124 Earlier *Skills Surveys* (for example Felstead *et al.*, 2002) have highlighted that key skills such as problem solving, team working and computing are increasing significantly in many occupations. Changes in autonomy (closeness of supervision) and the training and learning times needed to obtain and effectively discharge a job are also projected to increase in importance, as are most other key and generic skills (Wilson, 2001). This includes verbal and other types of communication skills, numerical skills, planning skills and IT skills. Manual skills are projected to be of decreasing importance. Verbal and communication skill requirements are expected to increase most for managers (both within the workplace and when dealing with customers or clients). Numerical skills are projected to increase in importance among administrative, clerical and secretarial occupations. The need for planning skills is projected to rise among sales occupations. Education courses and training programmes need to reflect the increasing value placed upon such skills by employers.

## Other Aspects of Changing Labour Market Structure

### The importance of temporary and agency work

- 2.125 Shifts away from the idea of a permanent job contract for life towards less rigid work patterns have been a feature of recent changes in the labour market. There is a large literature describing the importance of temporary working patterns both in the UK and globally. This suggests a situation of considerable flux, with clear patterns still not emerging, but there are some common themes across time and between countries and between sectors. Generally there appears to be an increasing reliance on such work forms, with individuals being asked to take on an increasing share of the risks associated with employment. This is related to an increasing reliance on self-employment in many sectors.
- Shifts away from the idea of a permanent job contract for life towards less rigid work patterns have been a feature of recent changes in the labour market.*
- 2.126 Globalisation and uncertainty are key drivers of the move towards use of such forms of employment, which some see as crucial to maintaining flexibility and competitive edge. Many researchers see, increasingly, intermediaries as providers of services as opposed to personnel (that is, providing 'solutions' rather than people). This connects with distinctions between self-employed (SE) and employee (EE) status, and the different risks and rewards associated with each.
- Temporary and self-employment are now important dimensions to the structure of employment.*
- 2.127 There was considerable growth in the use of temporary working at the end of the last decade but this has shown some signs of slowing, although patterns vary considerably across countries. The growth has been driven by market forces but moderated by regulation, which in some cases has grown tighter although the more general trend is towards a balance between regulation and the positive acceptance of the benefits of additional flexibility. Koene *et al.* (2004) develop a general explanatory framework which combines economic explanations (such as transaction cost economies and matching efficiency), with a variety of dynamic socio-cultural factors, including changes in norms, attitudes and practices. Both elements are essential to explain the longer-term growth trends in such work patterns.

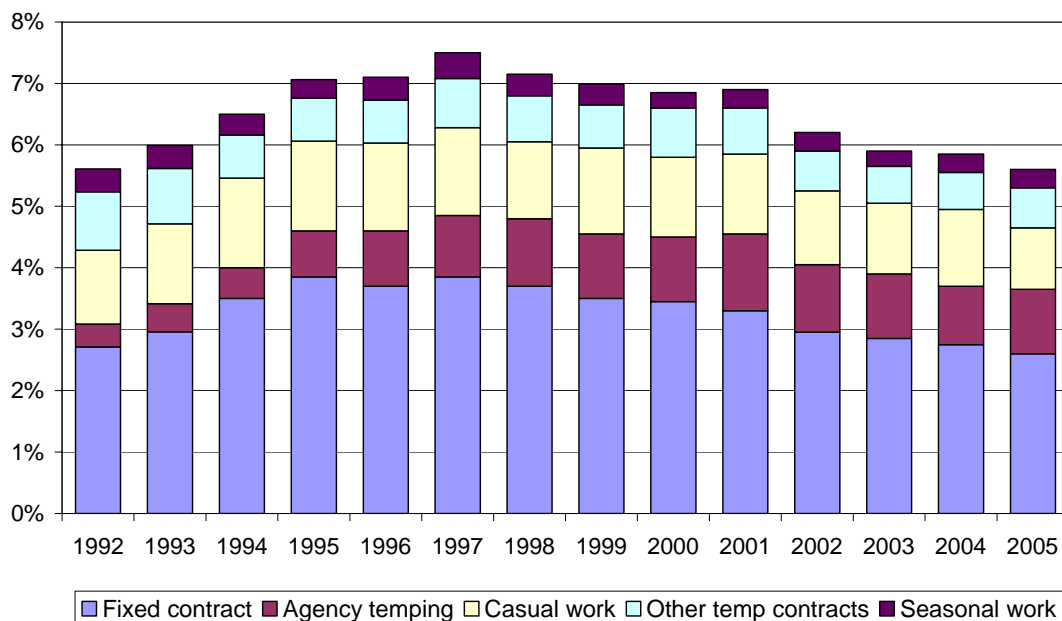
- 2.128 Although much of the early emphasis in the use of agencies and intermediaries was on middle- and lower-skilled occupations, such as secretarial and clerical occupations, many companies have moved into specialist niches associated with high-level skills including IT, and involving high-level professional and managerial occupations.
- 2.129 In the UK 'atypical' workers, including most workers on a temporary agency work contract, are not regarded as employees. They do not have the rights associated with EE status and often take on many of the risks and costs associated with being SE. Unions have advocated equalising rights with permanent employees. Many individuals involved seem more concerned about establishing equal treatment with the SE group.
- 2.130 The overall scale of temporary working appears to have moderated in the last few years, but according to DTI and SBS statistics there has been a continued rise in some types of working, especially among businesses with no employees – that is, 'one man band'-type organisations – operating in high-level occupations and niche market areas.
- 2.131 The growing importance of this form of working is perceived as part of the process of globalisation. Expansion into new occupational and geographical markets worldwide, driven by competitive pressures, is seen as essential to continued success, and a key element in labour market liberalisation. More recently, the large increase in inward migration to the UK has been linked to the use of temporary and informal work patterns.
- 2.132 In total, around 5.5 per cent of all employees in the UK are currently in temporary work. LFS data suggest that this figure peaked at approximately 7.5 per cent in 1997 but has decreased in recent years. *Figure 2.11* illustrates the percentage of temporary employment as a percentage of all employees in the UK from 1991 to 2005. A steady decline in the proportion of temporary workers has been observable since 2001. This could be affected by the increase in migrants – many of whom may not be fully recorded in official figures – taking up temporary and agency work.
- In total, around 5.5 per cent of all employees in the UK are currently in temporary work.*
- 2.133 The declining proportion of the use of temporary and agency workers provides some evidence of the long period of robust labour market performance in the UK. Temporary workers account for a smaller share

of total employment in the UK than is the case in many other European countries. In 2002, the proportion of temporary workers was 13 per cent of total employment in the European Union. This percentage ranged from 31 per cent in Spain and 22 per cent in Portugal to less than 10 per cent in the UK, as well as in Belgium, Austria and Ireland.

2.134 The most common form of temporary employment is fixed-term or fixed-task contracts. This form accounts for approximately half of all temporary work. In terms of pay there is variation across types of temporary work. Employees in fixed contract jobs on average earn around 4 per cent more than the hourly pay rate for all employees. Temporary workers falling into other categories, such as agency temping, are in general paid below-average wages.

*The most common form of temporary employment is fixed-term or fixed-task contracts.*

**Figure 2.11: Temporary employment as a percentage of all employees, 1992 – 2006**



**Source:** "How have employees fared? Recent UK Trends", DTI Employment Relations Research Series No. 56

2.135 Biggs (2006) reports a reduction in temporary workers in the UK from December 1997 to November 2004 based on LFS data. The data showed a decrease in temporary workers from more than 1.8 million in 1998 to fewer than 1.6 million in 2004. The reduction was most pronounced between the Spring quarters of 1998 and 2003 when the

number of temporary workers decreased by 250,000. Regional differences were also found, with relatively more temporary workers being employed in the North East and South East, as well as in Wales, Scotland and Northern Ireland. Legislation and employers' preferences for permanent workers are credited for the reduction in the demand for temporary workers. Interviews indicated a number of reasons for the decline in use of temporary workers including: the impact of legislation; temporary to permanent practices (whereby temporary workers become permanent); and the greater benefit of permanent rather than temporary workers.

2.136 Although LFS data suggest that temporary agency work has decreased in terms of overall share of employment, in recent years this may not take full account of the increase in migrants undertaking temporary and agency work, a large proportion of which would not be picked up by the LFS.

2.137 Forde and Slater (2006) find that in the UK, employers' use of agency labour is driven mainly by pressures related to labour costs and short-term considerations. Workers' experience of agency employment is marked by dissatisfaction with a number of aspects related to work. This often results in low levels of commitment and high anxiety for workers. Such feelings amongst temporary agency workers can have significant impact on productivity and ultimately result in longer-term costs for employers if agency workers are used extensively. They find little evidence in support of a supposed association between agency work and the emerging knowledge economy.

2.138 In a paper presenting a dynamic labour demand model assessing the impact of employment regulations on permanent and temporary employment, Nunziante and Saffolani (2005) give empirical evidence in support of the hypothesis that fixed-term contracts (temporary) have been effective stepping-stones to permanent jobs during the period 1983 to 1999. Whilst temporary work may lead into permanent employment, temporary workers are often disadvantaged relative to permanent employees in terms of pay, accessibility to training and employment prospects. Temporary work may have a negative impact on employability in the longer term.

*Temporary workers are often disadvantaged relative to permanent employees in terms of pay, accessibility to training and employment prospects.*

## Self-employment

- 2.139 Following a period of quite rapid growth, since the mid 1990s there has been no clear trend in self-employment. Almost 13.5 per cent of all workers in the UK were self-employed in 1996. This figure was 11.8 per cent in 2001 and, at present, approximately 12 per cent of workers in the UK are self-employed. In the three months to September 2006, there were nearly 3.8 million people in self-employment in the UK. More than 70 per cent of self-employed workers are men and self-employment is also slightly more common in rural rather than urban areas.
- Approximately 12 per cent of workers in the UK are self-employed.*
- 2.140 Self-employment has been regarded by some as an indicator of dynamism. Others have suggested it is often a response to taxation. Parker and Robson (2004) find for 12 OECD countries that rates of self-employment are positively and significantly related to average income tax rates and negatively and significantly related to the benefit replacement rate. The Bank of England has suggested that rises in house prices may have enhanced self-employment due to increasing workers' collateral and thereby reducing their credit constraints.
- Self-employment has been regarded by some as an indicator of dynamism.*
- 2.141 Weir (2003) finds that older cohorts are more likely to be self-employed than those born more recently. Weir's analysis finds a number of differences between the characteristics of self-employed workers and employees. People most frequently move into self-employment after age 30, once they have accumulated sufficient human and financial capital. Self-employed workers are most commonly found in skilled trade occupations and they tend to work longer than employees.
- 2.142 Skills may also be considered a route to increasing self-employment and, in turn, increasing the number of jobs for others which are created by self-employed workers. Cowling (2003) finds that 29 per cent of self-employed individuals in the UK employ other workers, while this figure is 41 per cent in Ireland and 51 per cent in Germany. The EU average number of jobs in a self-employed business is 1 while in the UK self-employed businesses have 0.7 jobs per business on average.

- 2.143 The goal of improving the skills of the entire UK workforce would require that self-employed individuals take responsibility for securing appropriate education or training for themselves. Unless self-employed workers can see a pecuniary benefit or have an inherent drive to acquire more skills, then the self-employed may under-subscribe to training.
- 2.144 In parallel with the research on changes in temporary working patterns there is also a large literature exploring the changing patterns of self-employment and what is driving this worldwide. Some of this work is more concerned with economic development than changes at the leading edge of economic activity.
- 2.145 In the UK self-employment grew rapidly in the last quarter of the 20<sup>th</sup> century. Various explanations were proffered for this, including: the impact of the economic cycle (high unemployment forcing many to try self-employment); pressures to encourage enterprise; and trying to minimise tax liabilities. The latter was especially important in the Construction sector. The tax authorities tightened up rules and regulation regarding SE status at the end of the last decade with the result that there was sharp downward movement in SE numbers and shares. Subsequently a Construction Industry Scheme (CIS) was introduced to deal with the special circumstances of self-employment and taxation in this sector.
- 2.146 Recent trends have seen resurgence in SE numbers and employment shares in some parts of the economy, especially in business and related services. ONS (2004) argue that this has not been tax related but reflects increased dynamism and structural changes in demand. Some researchers have identified a new group of 'dependent' self-employed, who are generally working through an intermediary. Although these individuals may not have the same degree of independence and control as more conventional SE, they still accept many of the other costs and risks associated with SE status. It is also clear that the choice of an SE work style involves many different factors, as indicated above.
- To raise skill levels requires the self-employed to invest in their own education and training.*

## Estimates of Future Skill Needs

- 2.147 Past trends provide useful information for both decision makers and policy makers about the changes taking place in the labour market. But the long lead times involved in much investment in education and training mean that, ideally, information is needed on what will happen in the future. In practice it is not possible to produce precise projections of skill needs (Wilson and Lindley, 2005). It is, however, possible to sketch out likely developments, based on an assumption of a continuation of past patterns of behaviour and performance (and given certain assumptions about developments in external factors such as levels of economic activity in the world economy).
- Projections of future skills demand allow scope for anticipation of skill needs by policy makers.*
- 2.148 This section focuses upon three main sources of evidence:
- i. the material available from *Working Futures, 2004-2014* which covers the whole of the UK in considerable detail;
  - ii. information from the Skills for Business network especially the individual Sector Skills Councils (SSCs);
  - iii. a range of other sources, including some international comparative studies.
- Working Futures provides the most comprehensive projections of future skill demand.*

## Evidence from Working Futures

- 2.149 The most detailed and comprehensive employment projections ever produced in the UK (*Working Futures, 2004-2014*) were reported extensively in *Skills In England 2005*. These have not been updated. Although there have been some changes in the UK and world economic situations since these projections were produced, the broad trends are unlikely to have changed dramatically. The main results are therefore repeated here. The more detailed results are confined, with minimal commentary, to *Annex A*. Readers who are interested to explore these in more depth are referred to *Skills In England 2005* or the main *Working Futures, 2004-2014* reports for further details.



- 2.150 Additional details by sector (SIC-based sector matrix industries and SSCs) and by geographical area (regional and local areas within England) are available in *Skills in England 2006, Volumes 3 and 4* respectively.
- 2.151 The macroeconomic context underlying *Working Futures* was expected to remain one of continued growth, with low inflation. Despite the recent economic slowdown, the latest Cambridge Econometric macroeconomic forecast suggests that overall levels of output of goods and services in the economy are likely to continue to grow at rates similar to the 2.5 per cent a year assumed in *Working Futures* over the period to 2014. Steady employment growth was projected, while unemployment is expected to remain stable. Inflation was expected to remain low, with sterling maintaining a stable value against the euro. A modest acceleration in public expenditure growth in real terms was projected, while the main tax rates were assumed to show little or no change. Things have subsequently tightened up, with a rather less optimistic prospect for growth in public expenditure now anticipated. This is unlikely to alter the path of the economy significantly compared to that mapped out in *Working Futures*.
- 2.152 Further structural change is expected. Output growth in many sectors, such as most primary industries and much of manufacturing, as well as a number of more traditional service sector industries, will be accompanied by continuing job losses. The picture in manufacturing is more varied. The average projected rate of output growth of around 1.5 per cent a year conceals quite rapid growth rates in technology and research and development-related industries, and much weaker performance for more traditional industries such as textiles, clothing and leather and metals. Construction output is also projected to be buoyant, especially in the short to medium term as a result of the successful Olympic bid.
- Working Futures projects steady employment growth to 2014.*
- Primary and manufacturing industries will continue to show employment decline. Growth in construction will be buoyant.*

- 2.153 It is the service sector that has the most optimistic prospects for output growth. The transport and communications sector is one source of this, with communications displaying the strongest growth of any sector apart from computing. Distribution and retailing are also expected to grow faster than the average for all industries and services, as are business and miscellaneous services. The fastest increases are expected in computers and related services and in other business services. Non-marketed services, which include education and health and social work, as well as public administration and defence, are also projected to grow despite the clamp down on government spending in some areas.
- The service sector will continue to show growth.*
- 2.154 The beneficial impact of rising output and activity levels in most sectors will be offset by pressures to cut costs and improve productivity. In many parts of the primary and manufacturing sectors this will result in further job losses (see *Annex A* for details). In most cases the changes in employment projected for 2006 to 2014 are less dramatic than those observed over the previous decade.
- Productivity gains in primary and manufacturing industries will result in further job losses.*
- 2.155 The projected job losses in the primary and manufacturing sectors are expected to be offset by gains in the service sector, where productivity gains are expected to be more modest. The pace of employment growth here is expected to decelerate compared with the past decade. The largest job gains are expected in business and miscellaneous services. The distribution, hotels and transport and communications sectors are also expected to grow rapidly, especially distribution. The additional jobs projected in non-marketed services are expected to be concentrated in education and health services.
- 2.156 These sectoral changes will be a key driver of changing skill needs. Skill requirements will also change within sectors. Together these two factors are projected to result in significant changes in the occupational structure of employment. These changes will require new skills and qualifications from the workforce.
- 2.157 Changes in occupational employment are projected to continue to favour managerial, professional, associate professional and technical, and personal service occupations, all of which are expected to experience significant job growth.

- 2.158 Often these jobs will require high-level formal qualifications: for example, business and public service professionals and associate professionals, teaching, research and science and technology professionals and associate professionals, and corporate managers.
- 2.159 Some of the most rapid growth is expected for caring personal service and customer service occupations, which are not as demanding in terms of levels of formal qualifications required. Other areas of rapid projected growth are for culture, media and sports occupations.
- 2.160 Job losses are expected amongst administrative, clerical and secretarial occupations, skilled metal and electrical trades, process, plant and machine operatives, and elementary occupations, especially those related to clerical and service activities.
- 2.161 It is also important to consider replacement demands. The projections of net changes in occupational employment (so-called expansion or structural demand) tell only a part of the story. There will be many job openings, and important education and training requirements, for many occupations where employment levels are projected to fall. These arise because of the need to 'replace' the existing skills that will be 'lost' as a result of retirements and other aspects of the normal process of labour turnover. The scale of replacement demand is projected to outstrip the scale of expansion demand substantially (by a factor of around eight to one). For the nine major occupational groups the expected patterns of 'expansion' or structural demand and total requirements (the sum of replacement demand and expansion demand) across all sectors are positive. The patterns vary considerably across occupations (as well as sectors), but even where substantial structural job losses are projected, replacement demands are usually more than sufficient to offset this. It is essential, therefore, for employers, education and training providers and public agencies to recognise the different characteristics and requirements of these two different components of future skill needs.
- 2.162 Those employing occupations which are projected to experience rapid growth of both expansion and replacement demand will face particular problems. Employers recruiting these occupational groups will face stiff competition and may need to work with

*It is also important to consider replacement demands. Even where substantial structural job losses are projected, replacement demands are usually more than sufficient to offset this.*

providers, as well as themselves engaging in training and recruitment activities, in order to ensure that their needs are met.

2.163 Somewhat paradoxically, it is in areas where employment is expected to decline that employers may face their greatest challenges. Where employers are laying off workers, meeting replacement demands for those organisations that are continuing in operation can be difficult. The fact that these types of jobs are in decline can discourage new entrants, as well as those displaced from other companies, from taking up such jobs. Meeting such needs can be especially challenging from the points of view both of employers and of education and training providers.

*In sectors where employment is in decline but replacement demand is high, it can prove difficult to recruit people.*

2.164 Changes in the occupational structure are also likely to drive up the demand for formal qualifications. Many of the occupations projected to grow most rapidly are those with high proportions of qualified people typically employed. Those occupations expected to decline tend to have low shares of qualified people.

### Prospects for areas covered by Sector Skills Councils

2.165 The Skills for Business network is composed of 25 Sector Skills Councils (SSCs). The SSCs are independent, employer-led organisations and each covers a specific key sector across the UK. The four key goals of the SSCs are:

*SSCs are charged with developing skills in the sectors they represent.*

- i. to decrease skills gaps and shortages;
- ii. to improve productivity, business and service performance;
- iii. to increase opportunities to boost the skills and productivity of everyone in the sector's workforce;
- iv. to improve learning supply including apprenticeships, higher education and National Occupation Standards (NOS).

2.166 Up to 85 per cent of the workforce in the UK is covered by an SSC, with the Sector Skills Development Agency (SSDA) responsible for providing a minimal level of cover for sectors falling outside those covered by the SSCs. The SSDA also funds, supports, and monitors the SSCs.

2.167 A number of the SSCs were developed from existing organisations which had well-established track records of anticipating changing skill needs. Others represent a new generation, intent on making a difference for the employers they represent.

- 2.168 The SSC Standard sets out the licensing requirements for the SSCs. The Standard reflects the expectations of the SEDA and stakeholders. According to the SSC Standard, the SSCs should be the “authoritative source of UK-wide data, intelligence and future projections around the skills needs of employers and employees”. The SSC Standard is used in conjunction with the Skills for Business Performance Monitoring Scorecard results and individual sector- specific targets to assess SSC performance.
- 2.169 One of the requirements of the SSCs is to produce a Sector Skills Agreement (SSA). These SSAs involve assessment of skills demands and needs in the SSC’s sector and development of deals with the supply side to fill gaps and shortages. SSCs must negotiate the actions and solutions in each SSA with regional partners and the devolved administrations in order to bring appropriate funding and support for workforce development to employers. To gain approval, SSCs must demonstrate active employer support for and engagement with the SSA.
- 2.170 There are five stages in the SSA development process:
- **Stage 1** involves an assessment of each sector to determine short-term, medium-term and long-term skills needs and mapping out of the factors for change in the sector;
  - **Stage 2** requires evaluation of the current training provision in the sector;
  - **Stage 3** entails analysing the main gaps and weakness in workforce development and setting agreed priorities;
  - **Stage 4** involves reviewing the scope for collaborative action with partners and assessing in what approaches employers would likely engage;
  - **Stage 5** is the final stage of the SSA process and involves production of an agreement of how the SSC and employers plan to work with key funding partners to secure the necessary supply of training.
- 2.171 The first stage involved in the creation of an SSA is performance of a skills needs assessment (SNA) to determine the demand for skills in the short, medium and long term. Imbalances in skills need and supply are examined and action plans to overcome

deficiencies are outlined. The creation of SSAs is very much employer centred in assessing the demands in each particular sector.

- 2.172 The SSCs vary in the timing of the beginning of the SSA development process. Four Pathfinder SSCs (ConstructionSkills, e-skills UK, SEMTA and Skillset) began the process before all other SSCs. Six councils were in tranche two (Cogent, Lantra, Skillfast-UK, SkillsActive, Skills for Health and Skills for Logistics) and began developing their SSAs in February 2005. Six further SSCs (Automotive Skills, Asset Skills, Improve Ltd, GoSkills, People 1st and Skills for Justice) began stage two of the SSA process in January 2006. The remaining nine SSCs (Proskills, Energy & Utility Skills, SummitSkills, Skillsmart Retail, Financial Services Skills Council, Government Skills, Lifelong Learning UK, Skills for Care and Development, and Creative & Cultural Skills) were the last to begin developing their SSAs. An up to date timeline of the SSA development process for all SSCs can be found at:

<http://www.ssda.org.uk/ssda/default.aspx?page=2136>.

- 2.173 The process of developing SSAs and performing SNAs has resulted in the SSCs becoming very aware of the relationship between skills demand and supply in their respective sectors and ultimately being more responsive to changes in the balance between these two sides. With employer-centred assessment of skills needs, SSCs are able to effectively prepare for changes in skill gaps and shortages and to make appropriate deals with supply-side players to overcome such deficiencies in skills.

- 2.174 Presented below is an overview for each of the twenty-five SSCs, along with recent findings related to skills needs and supply for each. This information has largely been obtained from the SSCs' respective websites and their SSAs and SNAs. In many cases this includes an estimate of the workforce size based on the SSC's own estimate of their footprint. This may differ from the size estimated in *Working Futures, 2004-2014*. The SSCs have tried to estimate the size of their workforces based on a fuller approximation of their footprints than is available from SIC-based data. This may include occupations across SICs and may incorporate sources other than official statistics. The *Working Futures* estimates are based on a best-fit aggregation of SIC categories and are aimed at providing workforce numbers that add up to 100 per

*The SSCs are now producing regular Skills Needs Assessments.*

*A brief summary of the skills situation in each SSC is provided based on their Skills Needs Assessment, where available, and other evidence.*

cent of employment. The SSC's own estimates may also differ in terms of timing from those reported based on the *Working Futures* data which all relate to 2006. The following information regarding the SSCs is aimed at providing ballpark estimates of how the SSCs view their responsibilities. Their workforce estimates indicate broad orders of magnitude rather than precise estimates. There is not room here to cover all of the work carried out under the auspices of each SSC. Instead a brief overview for each SSC is provided, with links to their websites where interested readers can find further information.

- 2.175 **Lantra** ([www.lantra.co.uk](http://www.lantra.co.uk)) represents the environmental and land-based sector comprising some of 17 distinct industries. This SSC's footprint consists of approximately 160,000 businesses of which more than 90 per cent employ fewer than 10 people. Lantra approximates the number of people working in the sector in England (2006) as 720,000. A recent estimate has attributed almost 6 per cent of the UK's GDP to this sector.
- 2.176 The Sector Skills Agreement (SSA) report for Lantra was launched in January 2007. The SSA cites globalisation of production and markets, rapidly changing consumer tastes and growing focus on high-value products as the main drivers of change in the sector.
- 2.177 All 17 industries in this sector report difficulties in recruitment and retention. Current skills gaps have been identified with regard to management and planning, communications, ICT, and technical, literacy and numeracy skills. While much of the workforce in this sector is highly skilled in technical areas, these skills are unaccredited and currently not recognised. Lantra's SSA outlines the need to recognise these skills and experience, together with qualifications and professional development. According to employers in this sector, students often lack the skills to enter employment and they have expressed concern about the industry relevance of some courses and the inflexibility of course structure.
- 2.178 **Cogent** ([www.cogent-ssc.com](http://www.cogent-ssc.com)) was formed in 2002 and is the trailblazer SSC for chemicals and pharmaceuticals, nuclear, oil and gas extraction, and petroleum and polymers industries. The SSC estimates that its footprint consists of 19,000 employers and 906,000 employees in the UK (based on 2004 figures). Its total gross value-added (GVA) is

estimated as £49 billion.

- 2.179 Based upon Cogent's skills needs assessment (Stage 1 of the SSA) which was published in May 2006, overall employment in the sector has been declining in recent years. This is attributed to the combined impact of increasing automation, investment in capital equipment and lower employment costs in response to the need to reduce overhead costs. As industries in this sector are facing static or shrinking workforce volumes, vacancies are mainly down to replacement demand rather than expansion demand. The oil and gas industry is the exception to this as it is currently experiencing an expansion of workforce demand stimulated by high oil prices.
- 2.180 Where there are vacancies in this sector, approximately 1 in 4 is difficult to fill due to skill shortages. Skill shortages in England are most prevalent among associate and technical workers (38 per cent of skill-shortage vacancies); process plant and machine operatives (18 per cent); and sales and customer service staff (15 per cent). The skills most reported as lacking amongst applicants were technical and practical skills. Deficiencies in problem solving, management, communication, and team-working skills were also reported by 1 in 5 employers with skill-shortage vacancies.
- 2.181 One concern expressed across the sector's employers was about the skills of graduate engineers and scientists. There is a perception that many new graduates lack the softer and core skills required in employment. These skills include team-working, communication and report-writing skills, as well as more specific and technical requirements.
- 2.182 Cogent sector employers report among the highest incidence of skill gaps across all UK sectors. Around 38,000 Cogent sector employees in England are believed to have skill gaps. Around 41 per cent of those with gaps are process, plant and machine operatives. This is disproportionately high when compared to the 32 per cent of the overall workforce who are employed in such roles. Within the Cogent sector, upskilling is vital, not only regarding technical skills but also in terms of core behavioural skills such as communications, customer service, the ability to work in teams and business improvement.
- 2.183 **Proskills** ([www.proskills.co.uk](http://www.proskills.co.uk)) is the SSC for the process and manufacturing sector, which is a major part of the UK economy. According to the SSC, this



sector employs over 350,000 in 21,000 companies (based on 2004/2005 LFS data). The sector has a combined turnover of £29 billion. Of businesses in this sector, 90 per cent are SMEs and the bulk of all businesses are found in England, with about 10 per cent in Scotland, Wales and Northern Ireland.

- 2.184 Proskills has completed the first stage of development of its SSA. The Stage 1 report, the skills needs assessment, highlights that three occupational groups (managers, professionals and technical) are forecast to increase in numbers, with a gradual reduction in the numbers of people in other occupational groups. This is expected to level off over the next 10 years.
- 2.185 Recruitment in the 12 months previous to the Stage 1 report was estimated to be about 5 per cent of the workforce or 6,500 people. Proskills expects the sector to have a net requirement of approximately 80,000 people over the next 10 years. About 30,000 of these will be skilled operatives, 15,000 managers, 15,000 technical staff and the remainder will be in other occupations.
- 2.186 Employers identified hard-to-fill vacancies in the skilled trades and machine operatives. They also cite difficulty with employability skills (attitude to work and learning) when recruiting for all roles.
- 2.187 Some skills gaps for existing staff were reported by 17 per cent of employers. This is similar to the proportion for the whole of the UK. Skills gaps are most prevalent amongst process and plant operatives. The consensus among employers is that they are concerned at the absence of employability skills. For many industries in the Proskills sector, external qualifications are not considered of high importance, although larger companies tend to give more weight to such qualifications and the extractives and mineral processing industry group consider external qualifications to be significant in most cases.
- 2.188 **Improve Ltd** ([www.improveltd.co.uk](http://www.improveltd.co.uk)) is the SSC for Food and Drink Manufacturing. This SSC was licensed in June 2004. The SSC estimates that the industry has an annual turnover of £73 billion (approximately 17 per cent of total UK manufacturing turnover) and, based on 2004 data, employs 500,000, approximately 14 per cent of the entire manufacturing workforce. UK Food and Drink Manufacturing is second in terms of world productivity behind Canada.
- 2.189 Improve Ltd estimates that approximately 10,000 jobs

are being lost annually in the sector, mainly due to automation and off-shoring. A minimum of 56,000 employees is forecast to retire from the sector in the next eight years.

- 2.190 Employers are facing important skills deficiencies in areas such as supervisors and managers, technical roles, machine operators and craft skills. Estimates indicate that the number in managerial and professional occupations in the sector will rise by 50 per cent by 2014: this implies a further 38,000 people to fill these roles. The other projected requirements of main concern are machine operators (40,000) and craft skills (16,000). There is little future requirement for elementary-level workers as technology improvements reduce the need for this sort of role.
- 2.191 A number of key issues were identified in the Stage 1 report produced by Improve Ltd. These included problems in recruiting food scientists and engineers, accessibility to training, limited training planning and lack of national prioritisation of the sector. The SSC has recognised the importance of skills development and acquisition and overcoming skills challenges in order to maintain or improve the sector's high productivity ranking in the global market.
- 2.192 **Skillfast-UK** ([www.skillfast-uk.org](http://www.skillfast-uk.org)) is the SSC for apparel, footwear, textiles and related businesses. According to the SSC, in the UK this sector employs 384,000 people (2003/04 figures) and generates output of almost £10 billion a year. There has been long-term decline of the sector's traditional industries, but this is being offset partially by innovative and growing industries such as branded and designer fashion, a variety of craft activities and technical textiles. The sector is continuing to undergo radical change, driven by globalisation of production and markets, rapidly changing consumer tastes, and an increasing focus on high-value products and processes.
- 2.193 The SSC reports a significant incidence of gaps in technical skills among operators but it is recognised that personnel in higher-level occupations such as technicians and designers also need to improve their skills. Generic gaps have also been identified regarding management and ICT skills.
- 2.194 The Skillfast-UK workforce has the highest proportion of unqualified workers of any of the SSCs. Many workers are highly skilled in technical areas but these skills are not accredited. Employers in this sector have

voiced concern about the skills held by many fashion design graduates and to the industry relevance of some courses. This echoes the sentiment expressed by a number of other SSCs, that external courses and training do not always translate into business improvements for particular sectors.

- 2.195 Skillfast-UK relies on the *Working Futures, 2004-2014* projections in terms of the sector's future skills needs to 2014. Total employment in the sector is expected to decrease by 24 per cent, with job losses heavily concentrated in operative occupations. More than half of total job losses in the manufacturing part of the sector will impact upon unqualified workers. The largest positive recruitment requirements are expected to arise for managers, associate professional and technical, and sales occupations.
- 2.196 **SEMTA** ([www.semta.org.uk](http://www.semta.org.uk)) is the SSC for Science, Engineering and Manufacturing Technologies. According to the SSC, it covers approximately 76,000 companies and 2 million employees (2004 figures) in the UK. The SSC estimates that this sector contributes about 9 per cent of annual UK GDP and approximately one-third of total UK exports. The SSC was licensed in April 2003 and has completed its SSAs for Aerospace, Automotive and Electronics as well as the Marine industry. SSAs for Bioscience, Metals, Electrical and Mechanical industries are currently being undertaken.
- 2.197 Employment is expected to decrease in the electronics and automotive manufacturing industries. Increases in employment are expected in some areas of the aerospace and marine industries. In response to the employment dynamics in each area, the individual sectors within SEMTA have identified their own specific skills needs.
- 2.198 In the electronics industry, employers have identified the key skill requirements for the future as management and leadership skills, professional-level skills and intermediate and technical skills. The automotive manufacturing industry has identified workforce skills development issues related to B-IT (Business-Improvement Techniques) and Lean techniques, team leader training, Level 3, 4 and 5 occupational skills, and top and senior organisational management. Skill requirements outlined by employers in the aerospace industry include: increasing the percentage of graduates from 30 to 50 per cent, increasing higher-level skills, and increasing licensed engineers in maintenance, repair and

overhaul. The marine sector anticipates increased demand for skills owing to a series of major orders from the Ministry of Defence, as well as growth in the yacht-building sector. Skills needs in the marine sector include: management skills, training in 'Lean' and 'Six Sigma' techniques, and specific skills at Level 3 and above.

- 2.199 **Energy & Utility Skills** ([www.euskills.co.uk](http://www.euskills.co.uk)) is the SSC responsible for the electricity, gas, waste management and water industries. This SSC was licensed in December 2003 and began development of its SSA in January 2006. According to the SSC's own research, it covers a workforce of 538,700 people, while estimates based strictly on SIC definitions of the sector underestimate the coverage at 374,000 workers. The size of the workforce in the sector has fallen by one-quarter over the last 20 years, mainly due to down-sizing following privatisation as well as deregulation. Secretarial, skill-technical and low-skilled jobs have shown the largest declines. Employment in waste management has risen over the same period, largely due to implementation of recycling programmes. This sector, unlike other UK sectors, has greater productivity than its US counterparts.
- 2.200 More than one-quarter of employers in the Energy & Utility Skills sector have identified skills gaps. Most gaps are technical and job-specific in nature but the lack of some softer skills such as team-working has also been identified. Net new demand for employment in this sector is projected to decrease by 5 per cent between 2004 and 2014. Replacement demand, arising from retirements and individuals leaving the industry, however, greatly outweighs any net new employment in the sector.
- 2.201 **ConstructionSkills** ([www.constructionskills.net](http://www.constructionskills.net)) is a partnership between CITB-ConstructionSkills, the Construction Industry Council, and CITB Northern Ireland and covers the whole of the construction and building industry (excluding electro-technical), from crafts to professional and technical staff across the whole of the UK. Approximately 2.2 million people work in this sector, with about 40 per cent being self-employed (based on 2006 LFS data). The SSC estimates annual sector output of £81 billion (2000 prices) and 8 per cent of UK GDP.

- 2.202 ConstructionSkills anticipates that the construction sector will enjoy a period of sustained growth over the medium term and all 15 forecasting organisations referred to by HM Treasury support a continued growth in the economy. The most likely scenario reported by ConstructionSkills is that of an increase in the size of the sector's workforce from 2,224,890 in 2007 to 2,431,240 at the end of 2011. This is under an assumption of 2.6 per cent output growth a year.
- 2.203 It is suggested that there will be increasing requirement in managerial and professional occupations due, almost entirely, to the shift in focus towards a process-driven industry requiring increased levels of control. There seems to be no evidence that there is going to be a radical change in either the size or skill mix of the rest of the workforce over the next five years. Employers in the sector recognise that preparation is needed to ensure that the required skills will be in place to exploit innovations as they become available and to respond to changing client needs and sustainability-driven legislation.
- 2.204 In England, it is estimated that the industry will need to recruit around 60,000 qualified new recruits each year (excluding electrical and plumbing trades) for the next five years in order to replace those who retire or leave the industry and to cover growth in the sector. Across the sector there is concern at the limited number of employer placements for apprentices and that further education is close to or at full capacity. Furthermore, employers are concerned that there are insufficient graduates with the appropriate knowledge, skills and understanding entering the construction industry. Opportunities to gain the necessary industry experience are at a premium and this is driving innovative and novel site-based training solutions such as the National Skills Academy for Construction and Programme-Led Apprenticeships.
- 2.205 **SummitSkills** ([www.summitskills.org.uk](http://www.summitskills.org.uk)) is the SSC for the building services engineering sector. This council was licensed in December 2003. The building services sector represents the electro-technical, heating, ventilating, air conditioning, refrigeration and plumbing industries. SummitSkills estimates that there are 51,000 businesses in this sector and approximately 558,000 workers. The sector contributes approximately 3 per cent of UK GNP each year. Progress on the SSA in this sector is ongoing.

- 2.206 Current skills needs in the sector are centred on craft operatives, practical skills, IT and legislation training. Around 93 per cent of the sector believes Level 3 NVQ/SVQ to be the minimum level for a fully-trained craft operative.
- 2.207 **Automotive Skills** ([www.automotiveskills.org.uk](http://www.automotiveskills.org.uk)) is the SSC responsible for the motor industry, including the sale, maintenance and repair of vehicles in the UK. England represents 90 per cent of turnover in the UK in this sector. The SSC estimates that between 575,000 (LFS 2004/05) and 585,000 (ABI 2004) people work in the sector in the UK. There are about 70,000 enterprises in the England footprint and total turnover is about £125 billion per year with a GVA of £22 billion. This sector is dominated by small enterprises, with seven out of eight businesses in England employing fewer than 10 people.
- 2.208 Automotive Skills published its Stage 1 report in July 2006. The SSC estimates that about a quarter of all employees in the sector work as technicians, who represent the largest part of the total one-third employed in skilled occupations. About two-fifths of total workers are sales and administration staff, of which some 10 per cent are owners or senior managers. Around 10 – 15 per cent in the sector are employed in professional and elementary occupations.
- 2.209 **Skillsmart Retail** ([www.skillsmartretail.com](http://www.skillsmartretail.com)) covers the retail sector. This SSC was licensed in September 2004. It started developing its SSA in May 2006 and is currently undertaking Stage 3 of the process. Stage 1 and 2 draft reports are available from the SSC's website. Annual spending through this sector is about £250 billion. According to Skillsmart Retail, in the UK over three million people work in this sector (2004/05 data) and there are currently 279,000 retail enterprises. Of these businesses, 233,100 are in England. Around 85 per cent of retail enterprises in the UK employ fewer than 10 people.
- 2.210 The SSC predicts that an extra 250,000 new jobs will be created in the UK retail sector from 2004 to 2014. According to the SNA for Skillsmart Retail, on average 7 per cent of retailers in the UK report having at least one hard-to-fill vacancy. One fifth of retailers report skill gaps. Around 13 per cent of managers and 17 per cent of sales and customer service staff hold no formal qualifications. Data from the NESS05 suggest that 57 per cent of retail establishments funded or arranged training in the 12 months prior to interview, which is



significantly lower than the average for England (65 per cent).

2.211 In its SNA, Skillsmart Retail identified key areas of concern requiring concerted effort by the retail sector in order to offer a world-class level of products and services. These key areas of concern include:

- failure of the retail sector to train its older workers;
- poor comparison with other sectors on qualifications held and the amount of training undertaken;
- disparities in the level of qualifications held by managers in the sector and access to training;
- demographic pressures on the sector intensifying due to one in three of the workforce being under 24, while one in eight is over 55 years of age.

2.212 **People 1st** ([www.people1st.co.uk](http://www.people1st.co.uk)) covers hospitality, leisure, travel and tourism. This SSC was licensed in April 2004. People 1st represents 14 industries which together generate turnover of more than £135 billion a year. The SSC estimates that in the UK the sector employs approximately 1.9 million people in over 180,000 establishments (2004/05 LFS data).

2.213 In the first stage of the SSA development process, People 1st found that staff turnover across the sector is 30 per cent. This imposes considerable costs on employers.

2.214 Some of the SSC's main findings from the Stage 1 research are:

- over 60 per cent of management vacancies are considered hard-to-fill;
- more than 20 per cent of applicants for chef roles are lacking required skills and experience;
- over the last two years, 63,000 new workers from the new EU Accession States have entered the sector;
- France has almost twice the level of UK labour productivity in this sector;
- customer service skills were top of the list of skills required by employers.

2.215 **GoSkills** ([www.goskills.org](http://www.goskills.org)) is the SSC for passenger transport. This council was licensed in November

2004. The SSC estimates that in England this sector employs 555,000 people, with an additional 10,000 transport planners and 9,500 people involved in community transport (which is mostly voluntary). Bus and coach and hackney and private hire are the sub-sectors with the highest number of workers in the sector. The taxi industry, driver training industry and coach industry all have high proportions of sole traders. About 54 per cent of employees in this sector in the UK have NVQ Level 2 or above but many of these may not be relevant to the sector. This figure is greatest in the aviation industry (72 per cent) and lowest in taxi and private hire (38 per cent).

- 2.216 The Sector's *Skills Survey* shows both large and micro- businesses citing driving skills (practical skills) as those most needed in their current workforce. Customer service skills are also key to the development of the sector. NESS03 indicates that, within the English passenger transport sector, the occupations with the most significant skills gaps tended to be engineering/maintenance occupations and drivers, which represent the majority of jobs in the sector. This survey also showed that skill gaps in numeracy and literacy are higher in the passenger transport sector than for all sectors.
- 2.217 In terms of future skills requirements, driving skills are viewed as most significant, with 14 per cent of large companies and 8 per cent of micro-businesses reporting that they believe this will become increasingly important. Customer skills and communication are also viewed as emerging needs. Developments in technology, culture and legislation result in constantly-changing skills needs in this sector. The introduction of EU legislation, the Driver CPC for instance, will have a significant impact on training requirements in the bus and coach industries. It is imperative to address these future skills needs before company performance is adversely affected.
- 2.218 **Skills for Logistics** ([www.skillsforlogistics.org](http://www.skillsforlogistics.org)) represents the freight logistics industry, covering moving, handling and storing of goods. This sector contributes £55 billion to the UK economy. Skills for Logistics estimates that approximately 1.7 million people in about 65,000 companies are working in this sector (2003/04 LFS data). Skills for Logistics has recently taken responsibility for most of Wholesaling (SIC 51), but this is not reflected here.



- 2.219 The SSC for this sector has identified a current major shortage of LGV drivers. This has been exacerbated by the industry's failure to attract women and workers from various ethnic minority communities.
- 2.220 The SSA developed by Skills for Logistics has identified six key skills issues which are fundamental to the success of the industry:
- management skills gap;
  - basic skills gap;
  - industry image;
  - unrepresentative labour force profile;
  - limitations of current external training provision;
  - lack of understanding of the business case for training.
- 2.221 The **Financial Services Skills Council (FSSC)** ([www.fssc.org.uk](http://www.fssc.org.uk)) is the SSC covering the UK financial services industry. The FSSC was licensed in April 2004 and began its SSA process in February 2006. The SSC estimates that this sector accounts for 4 per cent of employment and 8 per cent of total output in the UK. There are more than 34,000 financial service firms in the UK employing over 1.2 million individuals. Self-employment accounts for 5.6 per cent of the sector's workforce. Approximately 98 per cent of firms are SMEs but a handful of large organisations, mostly retail banks, dominate employment.
- 2.222 About 20 per cent of the financial services workforce is set to retire over the next five years. The industry is expected to generate 10,500 new jobs a year, up to 2011, representing a rise of 1 per cent a year. Nearly half of these jobs will be in banking. Administrative roles will fall to 41 per cent of the workforce by 2014, but technical and managerial roles will increase their share of employment.
- 2.223 **Asset Skills** ([www.assetskills.org](http://www.assetskills.org)) represents the UK property, housing, cleaning and facilities management industries. This SSC was licensed in September 2004. Asset Skills estimates that it covers about 628,000 people in the UK, based on Annual Population Survey (APS) 2004. Approximately 56 per cent of employment is in property services and housing, 38 per cent in industrial cleaning, and the rest in facilities management. This SSC has completed the first three stages of its SSA and will publish and launch the SSA in September 2007.

- 2.224 Asset Skills estimates that 20 per cent of the workforce it represents has no qualifications, while nearly one-third have achieved NVQ Level 1 or 2 qualifications. This compares to the average for all sectors in the UK of 12 per cent with no qualifications. The cleaning industry is the least qualified, with 84 per cent of individuals having Level 2 qualifications or below. The SSC has strongly suggested that up-skilling initially focus on workers in the cleaning industry.
- 2.225 NESS05 indicates that about 17 per cent of all businesses in this sector within England have unfilled vacancies. Skill-shortage vacancies are reported by 4 per cent of employers in the Asset Skills sector, and hard-to-fill vacancies are reported by about 6 per cent. The SSC concludes that non-skill factors (such as conditions, pay and the image of the sector) are factors contributing to hard-to-fill vacancies.
- 2.226 Using two different economic forecasts, Asset Skills anticipates total employment to increase by between 40,000 and 250,000 from 2004 to 2014, depending on the precise projection method. There is a high degree of uncertainty as to the extent of overall employment growth of the combined industries in this sector.
- 2.227 **e-skills UK** ([www.e-skills.com](http://www.e-skills.com)) is the SSC for IT and Telecoms and lead body for Contact Centres. Licensed in April 2003, e-skills UK estimates that 1.2 million people work in IT in the UK and a further 250,000 in Telecoms. The SSC has completed all stages of the SSA process and launched the SSA for IT in July 2005, with an update on milestones and achievements published in October 2006.
- 2.228 e-skills UK research indicates that employment in the UK's IT industry is growing at 5 to 8 times the national rate and around 150,000 entrants to the IT workforce are required each year. At the same time:
- uptake of A-levels in Computing is declining (from 10,913 in 2001 to 6,233 in 2006 – a drop of 43 per cent);
  - uptake of IT-related degrees is declining (from 27,000 in 2001 to 14,700 in 2006 – a drop of 46 per cent);
  - women are under-represented, making up 19 per cent of the workforce, 17 per cent of those accepted for IT-related degrees, and 8 per cent of Computer Science A-level students;

- only 28 per cent of the UK's IT graduates enter IT occupations;
- one in five employers reports skills gaps for IT users, and skills gaps for IT professionals are at their highest level since 2004.

2.229 **Government Skills** ([www.government-skills.gov.uk](http://www.government-skills.gov.uk)) is the SSC for central government which became licensed in December 2005. It represents the work of all government departments and the Northern Ireland Civil Service, executive agencies, non-departmental public bodies and the armed forces. According to the SSC, Government Skills covers a workforce of approximately 800,000 people in the UK. In April 2007, 14 major government departments signed the pledge to help every eligible employee gain basic skills and a Level 2 qualification. This commitment covers 19 departments and some 475,000 workers. Work on expanding the coverage of the pledge continues and has since resulted in two more major departments signing. Initial estimates based on the Spring 2006 LFS indicate that (excluding the armed forces) about 63,000 staff in the footprint were not qualified to Level 2 or above; but this will be revised in light of new research (see below).

2.230 Government Skills was the last of the twenty-five SSCs to begin developing its SSA, for which it started building an evidence base in June 2006. A recent refocusing exercise has meant that Government Skills now intends to use this and other evidence to produce a Skills Strategy for the central government sector, which it intends to deliver in late 2007 in lieu of an SSA. The research programme includes an online employee survey of qualifications and skills needs, a telephone survey of employers to identify skills needs and gaps (current and future), a scenario-planning exercise and an assessment of training provision. The findings from this research are currently being addressed (summer 2007).

2.231 **Skills for Justice** ([www.skillsforjustice.com](http://www.skillsforjustice.com)) is the SSC representing the justice sector, including community justice, court services, custodial care, forensic science, policing and enforcement, and prosecution services. This SSC became licensed in April 2004. It covers an estimated 447,000 to 560,000 workers, half of whom are employed in the Policing and Law Enforcement strand. It is estimated that there are about 4,000 employing establishments in this sector, as well as 10,400 other establishments

operating in the community justice strand but for which Justice is not their primary or core business. In addition, a conservative estimate of the number of voluntary organisations in the justice sector is around 12,500. These estimates are based on 2004 UK data.

2.232 Those employed in the Skills for Justice sector are:

- located in two main occupational groups: associate professional and technical (53 per cent) and administrative and secretarial (21 per cent);
- more highly qualified than the UK average (31 per cent are qualified to Level 4 or more);
- most likely to be employees – the self-employed make up less than 1 per cent of employment in this sector.

2.233 Forecasts estimate that employment levels in the justice sector will show a slight decrease of about 16,000 jobs by 2014. Although the overall level of employment may drop, there will still be a need to recruit people into the sector. Over this period, approximately 125,000 workers will retire and require replacing, leading to a total net requirement of 109,000. There will be increases in the numbers of managers and senior officials, which will partly offset an expected decrease in the number of employees in administrative and secretarial roles.

2.234 Over the past five years, there has been an increase in the proportion of people employed in the sector holding degree-level qualifications and a decrease in those with lower-level qualifications. This trend is expected to continue to 2014.

2.235 **Lifelong Learning UK** ([www.lifelonglearning.co.uk](http://www.lifelonglearning.co.uk)) (LLUK) represents libraries, archives and information services (LAIS), work-based learning (WBL), higher education (HE), further education (FE), and community learning and development (CLD). This SSC was licensed in January 2005, since which time it has absorbed the work of three former training organisations – FENTO, PAULO and isNTO – along with the NTO responsibilities of HESDA. LLUK estimates total employment in the UK in the sector to be in the region of 1 to 1.2 million (2005). More than 60 per cent of all sector employees in the UK have Level 4 and above qualifications. Total spending by institutions in this sector is estimated at about £25 billion per year.

- 2.236 LLUK began developing its SSA in January 2006 and has recently started Stage 3. The reports from Stages 1 and 2 are available on the SSC's website. LLUK will undertake an 'Impact Review' as a sixth stage in the SSA process, involving a review of all other sectors' SSAs, assessing their effects and the demands that they will place on skills needs in the lifelong learning sector, both currently and in the future. The full SSA for this SSC is expected to be completed in October 2007.
- 2.237 NESS05 estimated that 29 per cent of establishments in the lifelong learning sector were facing vacancies at the time of the survey, 24 per cent of establishments reported hard-to-fill vacancies (as a percentage of all vacancies), and 15 per cent were facing a skill-shortage vacancy (as a percentage of all vacancies).
- 2.238 **Skills for Health (SFH)** ([www.skillsforhealth.org.uk](http://www.skillsforhealth.org.uk)) is responsible for the UK health sector. Approximately 2 million people are employed across the NHS, voluntary and independent sectors (2004 LFS data). There is also a large number of volunteers working in the health sector.
- 2.239 The UK health sector is characterised by a highly qualified workforce. About 24 per cent hold degree-level qualifications or equivalent as highest qualifications. This reflects a high proportion of health professionals, but qualifications are concentrated at the top and bottom ends of the qualifications distribution.
- 2.240 This sector has experienced rapid employment growth relative to the whole economy. Between 1999 and 2004, employment in the SFH sector increased by 13 per cent compared to only 4 per cent in the UK as a whole. Increases in this sector vary across health authorities and are subject to political and financial dynamics each year.
- 2.241 Employment growth in the sector from 1999 to 2004 was accompanied by an increasing skills base. There was a 35 per cent increase in those employed with degrees as their highest qualification. This growth rate was 22 per cent for the whole economy.
- 2.242 The results of the SFH's SNA show that the major area of skills gaps reported in England were in communications skills, customer handling and problem-solving skills. According to the SNA report, over the next five to 10 years, employers and other stakeholders in the health sector expect that future

skills requirements are going to be driven by growth in the demand for vocational qualifications. There is also likely to be increased demand for generic and basic skills as well as specialist skills.

2.243 SFH's research also points towards increasing demand for a more flexible workforce in healthcare. The health sector currently employs an older workforce (compared to other sectors), which combined with other factors is likely to increase replacement demand, increase skill shortages as well as gaps, and enhance the emphasis on flexibility in career and professional development pathways.

2.244 **Skills for Care & Development**

([www.skillsforcareanddevelopment.org.uk](http://www.skillsforcareanddevelopment.org.uk)) is the SSC which represents social care, children, early years and young people's services in the UK. This SSC is made up of five existing organisations, including Skills for Care (formerly Topss England), dealing with adult social care in England, and the Children's Workforce Development Council (CWDC), also working in England. This SSC was licensed in April 2005. Within this sector, there are an estimated 60,000 employers and 1.6 million workers across the UK.

2.245 According to Skills for Care (England), social care spending in England is estimated at more than £1.5 billion a year. This care is delivered by over 920,000 staff. A further 500,000 staff are employed in early years and childcare, children and family social care, as well as in advisory and education support roles, under CWDC's footprint.

2.246 **Skillset** ([www.skillset.org](http://www.skillset.org)) is the SSC covering the audio-visual industries, which comprise broadcast, film, video, interactive media and photo-imaging. This SSC was licensed in January 2004. Combining results from the 2006 Skillset Employment Census and information from other Skillset research results in an employment estimate of up to 500,000 people in the sector in the UK. Particular care has to be exercised when interpreting data based on SIC codes for the Skillset footprint. Photo-imaging is spread across a range of SIC codes, and it is not possible to isolate the retail element. Interactive media, the largest sector within Skillset, is not exclusively coded and is included within the core of e-skills UK: therefore it is excluded from data for this SSC in *Working Futures* and in NESS05. Additionally, self-employed people without employees make up large proportions of employment in this sector, especially in film production. Skillset's



own research has started to address some of these challenges, but the difficulties in estimating the footprint need to be born in mind.

2.247 The workforce in this sector is highly qualified relative to the UK workforce as a whole. More than two-thirds of media professionals are graduates. Skillset conducted a survey of almost 7,000 people working in the media which highlighted that, despite the existing high levels of qualification among the sector's workforce, there still exists the need for significant training in order to meet the skills demands of the industry. Two-thirds of respondents reported a training need – mainly to stay up to date with or improve current work and to develop new technical skills. Of those seeking training, a number of barriers were encountered.

2.248 Current skills shortages in a number of areas of the media sector have been identified by Skillset. Alongside these, there are a number of emerging needs, including:

- web-based and database programming skills (Interactive Media);
- knowledge of IT networking among some engineers (Radio);
- financial skills (Radio);
- various business skills (for example, commercial awareness of sales/marketing staff, strategic business planning, project management) (Television);
- electrical engineering (Television);
- competencies associated with the use of voice recognition from subtitling (Television);
- gallery production assistants (Television).

2.249 **Creative & Cultural Skills** ([www.ccskills.org.uk](http://www.ccskills.org.uk)) covers advertising, crafts, cultural heritage, design, music, performing, literary and visual arts. It was licensed in June 2005. This sector accounts for 3.7 per cent of the total UK GVA. The SSC estimates that work in this sector counts as the main job for over half a million individuals (APS 2004). The ratio of employees to the self-employed for this sector is 60 to 40, which is much greater than the UK-wide figure. The largest sub-sector is visual, performing and literary arts. The smallest sub-sector is advertising, which comprises 62,000 businesses. Creative &

Cultural Skills began the development process for its SSA in March 2006.

- 2.250 The SSC's research has indicated that the sector lacks management and leadership capacity and that 17 per cent of businesses suffer skills shortages. One of the strategic goals of Creative & Cultural Skills for 2005 to 2010 is to influence the demand for and supply of skills by ensuring that qualifications, apprenticeships and competency frameworks are relevant to employers' wants and needs.
- 2.251 **SkillsActive** ([www.skillsactive.com](http://www.skillsactive.com)) is the SSC for active leisure and learning. According to this SSC, the total size of the paid workforce in this sector in England is 479,900 workers. There are 30,000 business establishments in this sector in England. The majority of these establishments (73 per cent) have 1 to 10 employees.
- 2.252 SkillsActive launched its SSA in December 2006. The SSC forecasts 3.8 per cent average annual growth in output and 2.2 per cent annual growth in employment in their sector from 2004 to 2009. They also estimate an average of 70,000 jobs becoming available each year between 2004 and 2009.
- 2.253 In terms of future demand for skills in the SkillsActive sector, there is a significant recruitment challenge. The SSA estimates that overall levels of employment in England for this sector in 2014 will be 581,000 and the sector will also have to recruit 70,000 workers each year to cope with replacement demand. Although forecasts do not predict significant changes to the profile of the sector's workforce, it is possible that some employers will seek to improve the level of management, communication and customer handling skills of their workforces in order to develop a competitive advantage.
- 2.254 The SSA outlines that the existing workforce needs up-skilling. This includes the introduction of more fitness instructors qualified to Level 3, improvement of the take-up of playwork specific qualifications, and improvement of the take-up of vocational qualifications by volunteers. In addition, a number of other skills – including management and leadership, fundraising, marketing, project management, and finance skills – are required to fulfil future employer demand. Generic skills including communication, teamwork, technical, customer handling and problem-solving skills are also considered important for improvement.



## Summary of SSC prospects

- 2.255 The research performed by the SSCs through the various stages of the SSA development process has allowed the Skills for Business network to identify a number of themes common to many or all of the sectors in terms of skills priorities and development needs. *The common theme that arises out of the SSCs' analyses is...*
- 2.256 Management and leadership and employability have been identified as priority themes for consideration. Asset Skills has been assigned as the lead SSC to act, on behalf of the network, in the area of employability. The key aim is to embed employability across the Skills for Business network. *... the priority attached to management and leadership, and employability.*
- 2.257 The Leitch Review has also identified development of leadership and management as a vital step in gaining acceptance and increasing the value of wider skills development. The evidence emerging from the SSAs supports this view, with a number of SSCs referring to needs regarding management and leadership in their sectors. The evidence from the SSAs has also led to a number of proposed solutions from the Skills for Business network all-sector management and leadership cross-cutting theme. These solutions include: first level management development, management and leadership forums for employers, promotion of the National Occupational Standards, and participation in Action Learning and Solutions4Business programmes.
- 2.258 The Skills for Business network and the SSCs have also developed programmes to examine strategies to deal with employer needs regarding skills for carrying out administrative activities in the sectors, skills for productive exploitation of IT, and language skills.

## Overview of prospects for all SSCs based on Working Futures

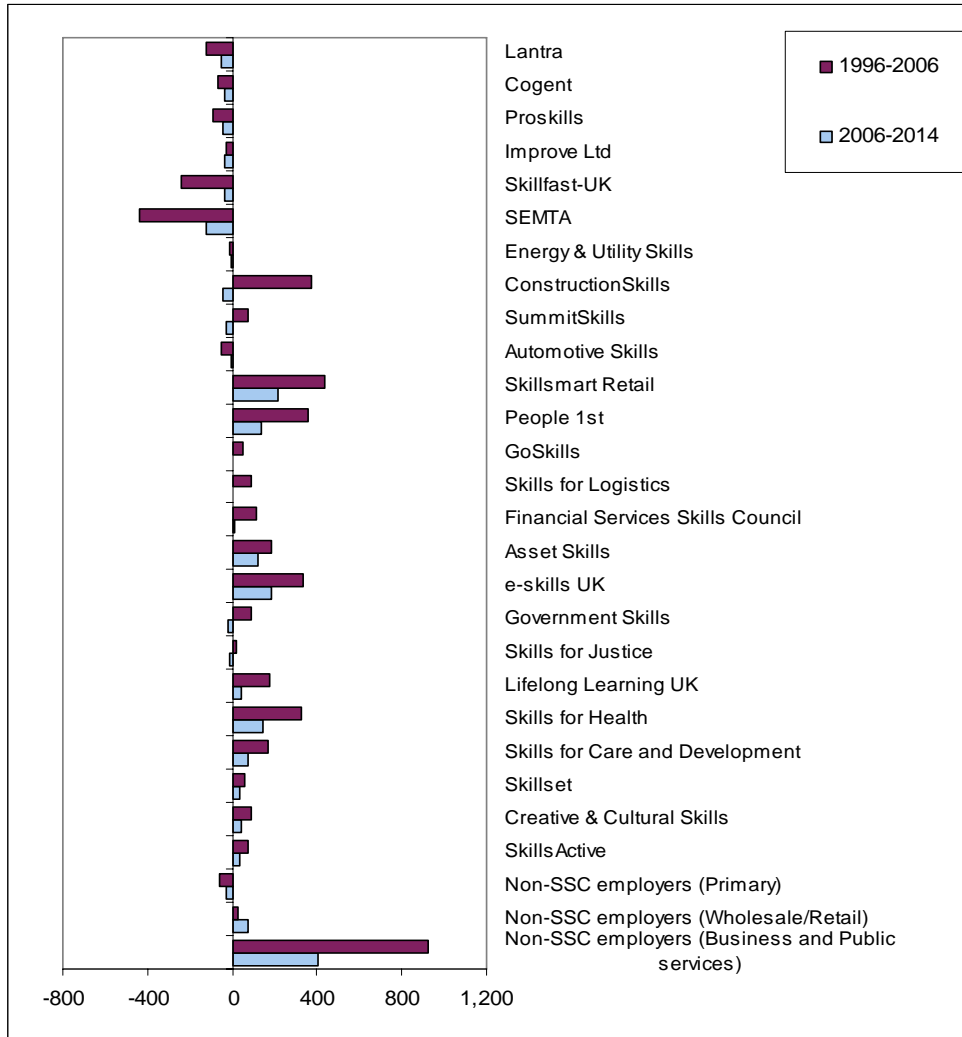
- 2.259 Historical time series data on employment do not exist for the SSC categories, but the detailed results available from the *Working Futures, 2004-2014* database, enable an initial assessment to be made of both historical trends and future prospects for these categories. This is produced by combining the results from the 67 detailed industries which underlie the *Working Futures* results. These have the advantage of being based on a consistent assessment, taking into account the situation across all industries simultaneously, enabling consistent cross-SSC and national comparisons to be made.

- 2.260 Despite these refinements, the conversion process remains quite crude, especially at a sub-national level. This is necessary in order to achieve a consistent picture across all the other dimensions of employment considered in *Working Futures, 2004-2014*. The *Working Futures* database is designed to match headline constraints at regional, sectoral and other levels but cannot replicate every nuance of the Labour Force Survey (LFS). Point estimates based on the LFS for a particular SSC's employment structure will therefore inevitably differ from the detailed estimates presented above.
- 2.261 The *Working Futures, 2004-2014* projections provide a consistent assessment of prospects of the whole network of SSCs. Full details of methods and results are given in the *Working Futures Sectoral Report* (Dickerson *et al.*, 2006). The results are based on a mapping from detailed SIC categories to the SIC footprints agreed between the SSCs and the SSDA (see *Annex B* for details). A set of SIC to SSC converters, which differ for each gender status category, are used based on data from the Annual Business Inquiry (ABI) (for employees) and the LFS (for self-employment). Some SSCs also define their coverage in terms of an occupational footprint. The results here are based solely on the 'best-fit' SIC-based footprint agreed with the SSDA. This avoids any overlap with other SSCs. These results present a consistent and comprehensive picture across all the SSCs. Many individual SSCs also produce their own projections which may differ from those presented here for many reasons as described in the previous section on *Prospects for areas covered by Sector Skills Councils* above. (For details see also the SSC websites referenced above and in *Annex B*.)
- 2.262 The key features of projected employment change across the SSCs are summarised in *Figures 2.12* and *2.13* and *Table 2.8*.
- 2.263 In terms of employment coverage, the largest SSCs are ConstructionSkills, Skillsmart Retail, People 1st and Skills for Health, each of which covers over 2 million people (see *Table 2.8*). A number of other SSCs represent over 1 million people in employment, including SEMTA, which is the largest SSC covering manufacturing-type industries.
- 2.264 In terms of changes over the period 2006 to 2014, the prospects for the SSCs are very different. Many

of those at the top of the table, which represent industries in the primary and manufacturing sectors, face the problem of sharply declining employment levels, for example, Lantra, Proskills, Skillfast-UK and SEMTA. The problem of falling employment levels is often accompanied (somewhat paradoxically) by problems of skill shortages as older workers leave the sectors concerned and employers find it difficult to recruit new entrants. These issues are also discussed in more detail in the *Working Futures Sectoral Report* (Dickerson *et al.*, 2006).

- 2.265 Other SSCs such as Asset Skills, e-skills UK and Skillset face rather different problems. Here employment levels are projected to rise, in some cases quite rapidly. This is likely to lead to sharp increases in the demand for certain skills, which the SSCs, in collaboration with others, will need to address.
- 2.266 Underlying these summary results are detailed occupational projections, including replacement needs for each SSC. Comparing these projections with those produced by the SSCs themselves is not a straightforward task. The results may differ for a whole host of reasons. These are discussed in more detail in the *Working Futures National Report* (Wilson *et al.*, 2006).

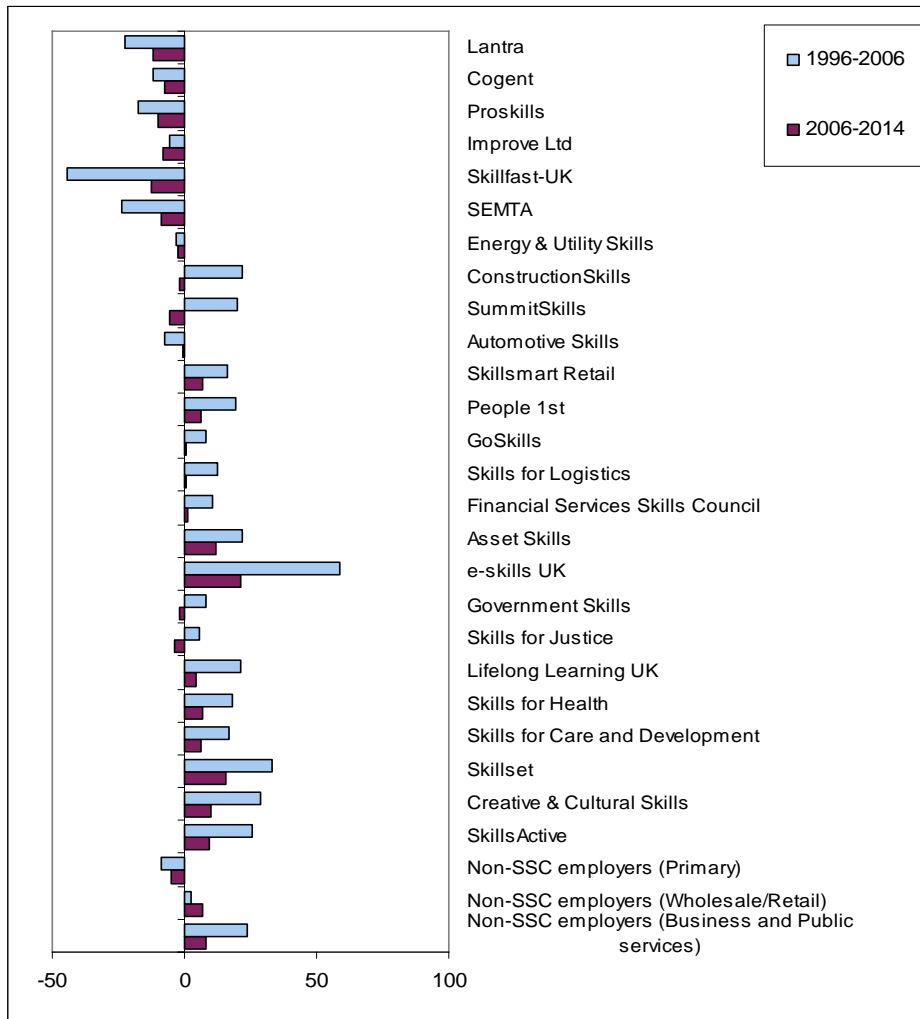
**Figure 2.12: Historical and projected changes in employment by Sector Skills Council sector, 1996–2006 and 2006–2014 (000s)**



**Source:** *Working Futures 2004–2014*, (Dickerson *et al.*, 2006).

**Notes:** The bars show changes in thousands over the periods shown. Note that, in contrast to most figures and tables in this report, these are for the whole of the UK.

**Figure 2.13: Historical and projected rates of change in employment by Sector Skills Council sector, 1996–2006 and 2006–2014 (%)**



**Source:** *Working Futures 2004–2014*, (Dickerson *et al.*, 2006).

**Notes:** The bars show changes in per cent over the periods shown. Note that, in contrast to most figures and tables in this report, these are for the whole of the UK.

**Table 2.8: Projections of employment by Sector Skills Council sector**

	Levels			Changes		
	2006	2010	2014	2006-2010	2010-2014	2006-2014
Lantra	437	414	387	-23	-28	-51
Cogent	508	494	471	-14	-23	-37
Proskills	433	413	390	-21	-23	-44
Improve Ltd	463	444	426	-19	-18	-37
Skillfast-UK	301	274	262	-27	-12	-38
SEMTA	1,419	1,358	1,293	-61	-65	-126
Energy & Utility Skills	321	316	313	-5	-2	-8
ConstructionSkills	2,099	2,055	2,057	-43	1	-42
SummitSkills	454	437	430	-17	-7	-24
Automotive Skills	611	610	607	-2	-3	-5
Skillsmart Retail	3,138	3,244	3,351	106	107	213
People 1st	2,214	2,294	2,351	79	57	136
GoSkills	665	665	668	0	3	3
Skills for Logistics	788	787	791	0	4	3
Financial Services Skills Council	1,180	1,193	1,194	13	1	14
Asset Skills	1,011	1,068	1,132	56	65	121
e-skills UK	893	974	1,080	82	105	187
Government Skills	1,167	1,162	1,147	-5	-15	-19
Skills for Justice	367	362	353	-5	-9	-14
Lifelong Learning UK	983	1,002	1,025	19	23	42
Skills for Health	2,107	2,184	2,250	78	66	143
Skills for Care and Development	1,172	1,212	1,246	40	34	74
Skillset	249	268	287	19	19	38
Creative & Cultural Skills	406	426	448	20	21	41
SkillsActive	358	373	391	16	18	34
Non-SSC employers (Primary)	610	596	579	-14	-17	-30
Non-SSC employers (Wholesale/Retail)	1,118	1,159	1,195	42	36	77
Non-SSC employers (Business and Public services)	4,873	5,061	5,278	188	216	404
Total	30,343	30,846	31,399	502	554	1,056

**Source:** *Working Futures 2004–2014*, (Dickerson *et al.*, 2006).

**Notes:** (a) Based on a conversion from SIC categories using separate converters for each gender status category. (b) The SIC ‘footprints’ used are as defined in Table A in the Annex. Note that, in contrast to most tables in this report, these are for the whole of the UK.

## Broader perspectives

- 2.267 Other evidence on future changes in skill demand is also emerging. This includes pan-European assessments as well as sector-specific studies.
- 2.268 Labour markets are becoming increasingly global. The enlargement of the EU and the opening up of labour markets have resulted in increasing labour mobility across national borders. Understanding that a narrow national perspective is becoming less relevant for many occupational groups has led to recognition that there is an information deficit about future skill needs in Europe as a whole. With the free movement of labour resulting from the opening up of labour markets across the continent, much hope has been placed on the role of increased mobility across European countries to help to reduce unemployment. The European labour market is now a reality on the EU policy agenda. At the same time, the occupations, skills, competences and qualifications which will be in demand in the future European labour market are not very well identified. The *Integrated Guidelines for Growth and Jobs (2005-2008)* explicitly ask for better identification of occupational needs and anticipation of future skill requirements as keys to adapting education and training systems to new skills and competence requirements. Finding better ways to obtain information on future skill needs in Europe, including joint European action, has become a priority.
- 2.269 The European Centre for the Development of Vocational Training (CEDEFOP) and other European organisations have been repeatedly approached with requests for better information on this issue. The LSC and SSDA have also recognised this gap and have funded some development work on producing a consistent set of employment projections at a pan-European level. Preliminary projections were produced at the end of 2006 (Wilson, 2006) and this agenda has now been taken up by CEDEFOP which is funding a project to develop and improve these results.
- 2.270 The results presented in Wilson (2006) demonstrate the feasibility of developing a set of consistent and comprehensive employment projections across all 25 countries of the EU. While these results have their limitations, they provide a useful starting point for thinking about likely future developments in
- Labour markets are becoming increasingly global. The enlargement of the EU and the opening up of labour markets have resulted in increasing labour mobility across national borders. The European labour market is now a reality on the EU policy agenda.*
- CEDEFOP, the LSC, and SSDA have commissioned employment projections at the pan-European level.*
- The results show similar changes in employment by occupation and industry in nearly all EU countries.*

employment structure across the continent. *Figures 2.14 and 2.15* illustrate some indicative employment trends by broad groups of occupation (nine categories) and implications for replacement demands across all 25 EU countries (that is, for the whole of Europe). The results illustrate slow but inexorable change in employment patterns by both sector and occupation. These trends are generally common across all the countries of the EU, although there are many detailed variations reflecting the different stages of development and transition towards a full market economy that many countries are making. Such results highlight that in an ever-shrinking world, labour market pressures are likely to take less and less notice of national boundaries.

2.271 The *Jobs of the Future* report by Accenture (2005) also focuses upon prospects for economic growth within the EU, highlighting those areas where new jobs are likely to be created (see Box 2.3). The study highlights a number of key industrial sectors where employment can be increased in a sustainable way. It suggests that Europe as a whole has the potential to create some 10-14 million new jobs over the next few years. It does not focus on specific skills, although it emphasises that these are crucial to success in many sectors. Science, technology and ICT skills are emphasised as critical in a number of sectors. More general generic skills are mentioned as especially significant for the UK.

*Europe can create many jobs in the future but this depends upon raising skill levels.*

2.272 The UK and Ireland are said to have a comparative advantage in Europe due to the following characteristics:

- flexible labour force;
- greater emphasis on generic rather than industry-specific skills;
- first-rate academic institutions;
- lower levels of taxation, which lessens the costs on businesses;
- free markets and regulation.

*The UK is comparatively advantaged in creating jobs because of its flexible labour market.*

In the light of the comparative advantage held by the UK, and given current economic and market conditions, Accenture predicts that there is potential for growth in the following sectors in particular:

- audiovisual;
- IT;



- telecommunications;
- pharmaceuticals;
- social and community.

2.273 Accenture outlines the need to stimulate demand for goods and services in Europe. Ways of doing this include building a critical mass of demand for different industries in a European marketplace and overcoming existing fragmentation in this marketplace, development of high value-added products and coordination of national procurement throughout Europe. Stimulated demand for goods and services in Europe and England will then drive demand for the particular skills necessary for their production.

2.274 CEPIS (2007) has conducted a recent review of skill needs relating to ICT across the whole of Europe. The ICT market is estimated at being worth over €500bn in the EU in 2005, employing over 4 million people. The computer services sector alone employs 2.5 million people. It accounts for around €60bn of exports a year, the third most exported service. The skills needed to create, deploy and use ICT have become a key aspect of the EU economy. Those who research, develop, design, manage, produce, consult, market, sell, integrate, instal, administer, maintain, support and service ICT systems represent a critical group which is continuing to grow in size despite the recent bursting of the dot.com bubble. CEPIS estimates that there are approximately 180m people using ICT in the EU. Effective use of ICT (whether in the public or private sectors) has been intimately tied up with widespread innovation achieved in business operations in all parts of the economy. It is the key to helping EU organisations to compete with enterprises around the world in an increasingly global economy.

*Increased take-up of ICT is part of the solution to Europe's economic problems. In part this is a skill issue.*

2.275 Given the growing importance of environmental issues, climate change and global warming, society's actions with regard to these issues will have significant effects on the economy and the future demand for skills. These issues, as outlined in the *Stern Review: The Economics of Climate Change (2006)*, present a variety of threats and opportunities that will in turn impact the demand for skills in England and throughout the world. Stern reports that "effective action on the scale required to tackle climate change requires a widespread shift to

*Environmental change will create a demand for skills...*

new or improved technology in key sectors such as power generation, transport and energy use.” Reduction in the use of fossil fuels will eventually cause decline in industries that remain dependent upon these fuel sources and there will be fewer jobs available for people with the skills suited to these sectors. In the face of reduced use of fossil fuels, however, there will be an increase in the use of renewable energy and other low carbon energy resources. This will lead to jobs in industries based on these energy resources and various skills will be required to work in these areas. Changes in consumer behaviour due to increased environmental awareness will result in some industries either growing or declining as people demand more environmentally-friendly products and types of travel and leisure. Accenture (2006) has outlined the ‘eco-economy’ as a future potential high-growth sector in Europe.

- 2.276 Government response to climate change will result in structural and policy changes that will also impact the demand for skills. To combat climate change, Stern has outlined the need for increased R&D funding to encourage the development of environmentally-friendly technologies and to find substitutes for those products that harm the environment. Governments may also provide additional support to ‘green’ industries and new businesses opening up in the ‘green sector’. Penalties on polluting companies and stepped-up emissions trading are other actions to be taken by government in the attempt to combat climate change. The policies and actions of government in relation to climate change and environmental issues will affect existing companies, new companies and individuals and will ultimately help to shape the profile of skills demanded in the economy.

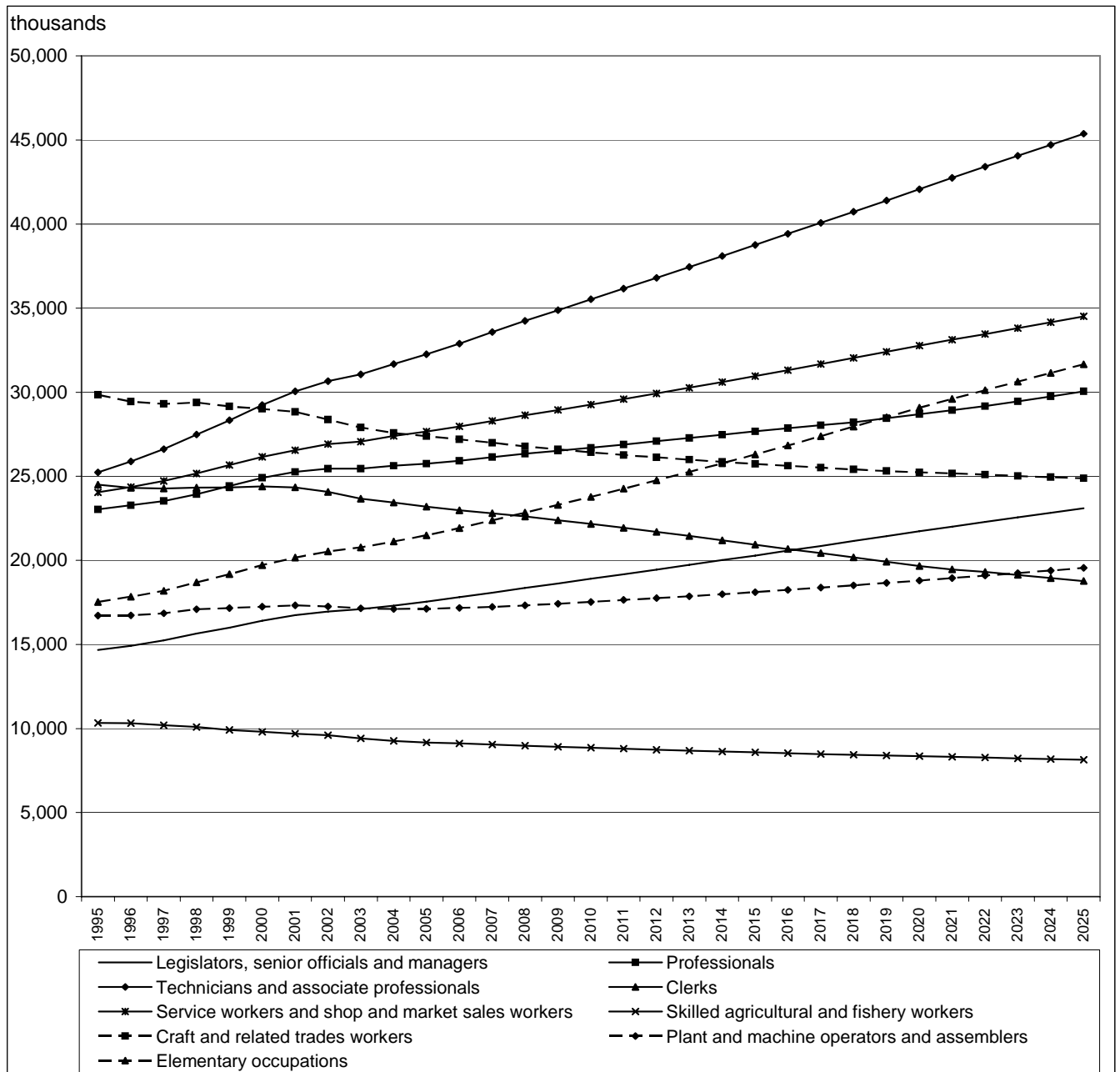
*...especially in relation to R&D.*

### Box 2.3: Future potential high-growth sectors in Europe

Industry	High-growth segments	Minimum estimate for current market size (employment)	Increase in employment, based on assumed 3% growth over 5 years
<b>Aerospace</b>	Chinese market, business jets; IT improvement to drive efficiency (IATA Invoiceworks); Galileo project	407,800	64,952
<b>Audiovisual industries</b>	Digital content and broadband is expected to have impact in all sectors	500,000	79,637
<b>Aviation</b>	Short-haul, low cost travel; China and APAC destinations	368,000	58,613
<b>Banking and insurance</b>	New markets following EU enlargement; value-added financial advice	4,175,000	664,969
<b>Defence</b>	Growth in EU, US and Asia-Pacific markets; modern technologies and equipment for high tech armed forces	300,000	47,782
<b>The eco-economy</b>	Environmental technologies, wind-powered electricity generation; recycling and waste management; fish farming; environmental architecture (buildings that are energy- and materials-efficient)	Not available	-
<b>Healthcare provision</b>	E-health (electronic patient records, health information networks, electronic prescriptions, etc); private medical insurance; outsourcing of services and cross-border health provision	18,000,000	2,866,933
<b>Information technology</b>	Global enterprise voice and data communications; software as a service model (SAASM); customer management services, contact centre operations and HR services support; network businesses services such as design, planning, maintenance and management. Key verticals: health care, government, education and utilities	5,000,000	796,370
<b>Pharmaceuticals</b>	Key growth in bio-tech; products for ageing populations; Chinese market growing rapidly	588,000	93,653
<b>Security</b>	Information security is key; client security software market, infrastructure and identity security / biometrics	406,893	64,808
<b>Social and community</b>	Aging population leading to increased demand for geriatric care services; more demand for child care as employment participation rates for females increase; export of educational services, via distance and e-learning	21,900,000	3,488,102
<b>Space</b>	Space-based applications and services (e.g. management of natural resources, mobility, environment, security and information economy applications)	40,000	6,371
<b>Telecommunications</b>	Voice over broadband (VoBB), outsourcing, mobile and internet in Russia; global enterprise voice and data communication services	1,000,000	159,274
<b>Transport</b>	Land transport of goods and passengers; management of public service transport; IT for ticketing and tolling; third party logistics	10,000,000	1,592,741

Source: Accenture (2005).

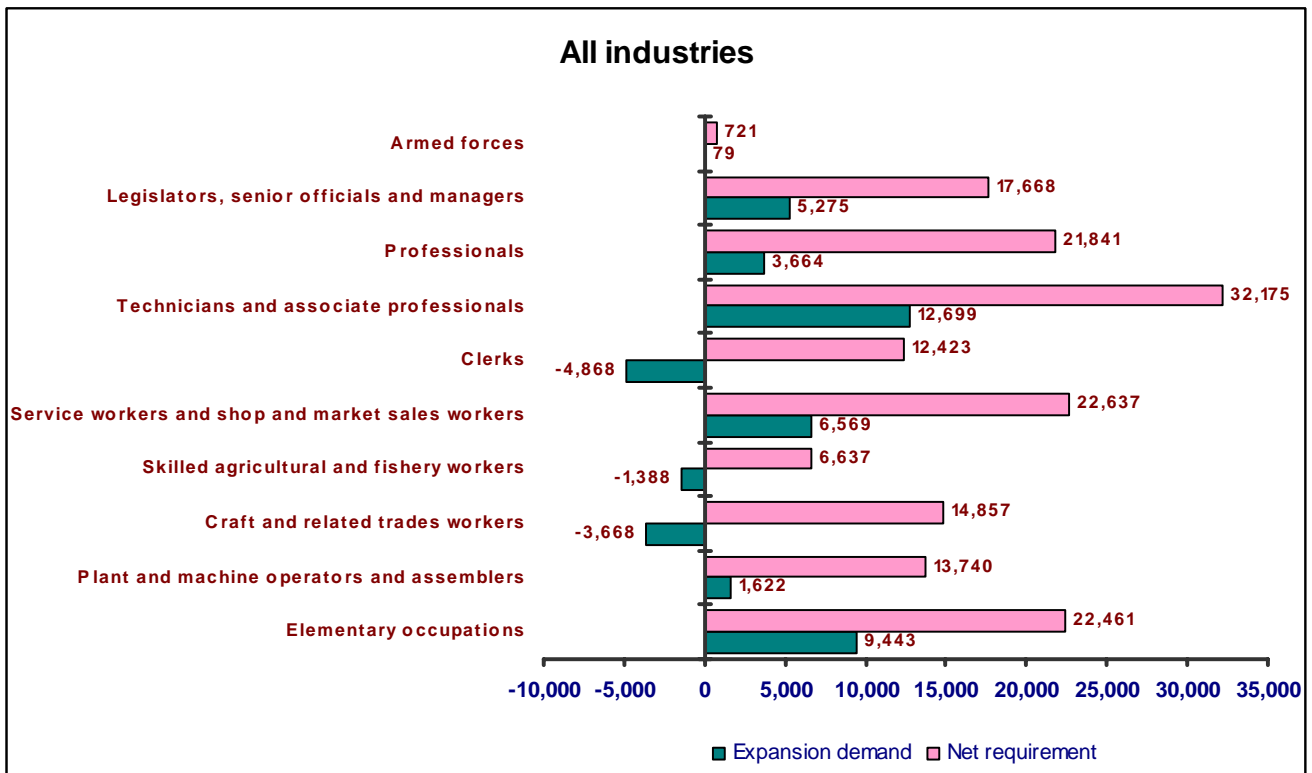
**Figure 2.14: Occupational trends across Europe (EU 25) to 2020**



Source: Wilson (2006)

Notes: EU 25 excluding Bulgaria and Romania.

**Figure 2.15: Replacement needs and total requirements across Europe  
(EU 25) to 2020, (000s)**



**Source:** Wilson (2006)

Notes: EU 25 excluding Bulgaria and Romania.

## Conclusion

- 2.277 The *statistical evidence* on employment trends presented in this chapter suggests that the demand for skills, as revealed in the data on the occupations, qualifications and generic skills of those in employment, is continuing to rise. Of course, these changes reflect both demand and supply factors. The discussion in Chapter 4 focuses upon whether demand from employers is keeping up with or outpacing supply. A key issue addressed in the present chapter is whether demand is itself rising rapidly enough to give employers the kinds of skills that their workforces will need to compete successfully in the global market in the coming decades.
- The key question is whether the demand for skills is rising fast enough.*
- 2.278 The *research evidence* demonstrates that for employers to move up-market to improve profitability, or to increase the efficiency with which they produce their existing range of products or services, they generally need to improve the skills of their workforces. But while such developments may be necessary they are by themselves not sufficient to guarantee a successful outcome.
- Employers need to raise the skills of their employees if they are to move up-market.*
- 2.279 A number of other conditions need to be in place to ensure that the kinds of virtuous circles outlined in the management guidelines for developing the high-performance workplace can be achieved. Employers may also need to find capital and other resources to make such changes. Companies currently operating in relatively low-value markets are often reluctant to take the risks involved in investing in physical or human capital, especially if they are currently achieving a reasonable level of profitability. It is difficult, if not impossible, to change such employer behaviour through supply-side policies alone. So long as employers have not set themselves high performance aspirations they are unlikely to deploy skills in a way that will meet the Government's productivity challenge, even if the Government ensures an adequate supply of skills.
- If employers do not raise their aspirations then improvements on the supply side will not meet the Government's productivity challenge.*
- 2.280 A particular challenge on the demand side arises in relation to how the views of employers are to be articulated in terms of skills and skills policy. In the interests of efficiency and effectiveness the Government has set up the Skills for Business network and SSCs network to take on this role and to try to identify common interests. But this can
- A principal challenge, and uncertainty, remains about how employers can be effectively engaged in the FE system.*

pose problems in itself since employers are often in competition with each other. There is also often a discord between public rhetoric – emphasising the crucial importance of employees as a critical asset – and private behaviour, where, as Keep (2003) points out, skills are often very low down on the priority list.

## Annex A: Future Prospects in Greater Detail – Selected results from *Working Futures*

### Background

- 2.281 This Annex presents a selection of results based on the *Working Futures, 2004-2014* projections produced for the SSDA and its partners including the LSC. These have not been updated since *Skills in England 2005*. The results here are therefore the same as those presented in that earlier report, except that the base year has been changed from 2004 to 2006. They are presented with minimal commentary.
- 2.282 Additional details by sector (SIC-based sector matrix industries and SSCs) and by geographical area (regional and local areas within England) are available in *Skills in England 2007, Volumes 3 and 4* respectively.
- This Annex provides detailed information from Working Futures with the base year set to 2006.*

### Prospects for sectoral change in greater detail

- 2.283 The *Working Futures, 2004-2014* projections provide considerable sectoral detail. *Figures A.1* and *A.2* show the changes expected for the 27 *Sector Matrix Industries* (based on Standard Industrial Classification (SIC) definitions and adopted by the LSC and SSDA for more detailed analysis). These results can be compared with those presented in Chapter 2 for the industrial footprints covered by the SSCs.
- 2.284 Even sectors which are projected to decline will remain important areas of employment, contributing a large number of jobs. The replacement demands from such industries will continue to result in significant education and training needs.

### Detailed occupational prospects

- 2.285 Occupations are a key measure of skill. Changes are presented at major and sub-major group level of SOC 2000.



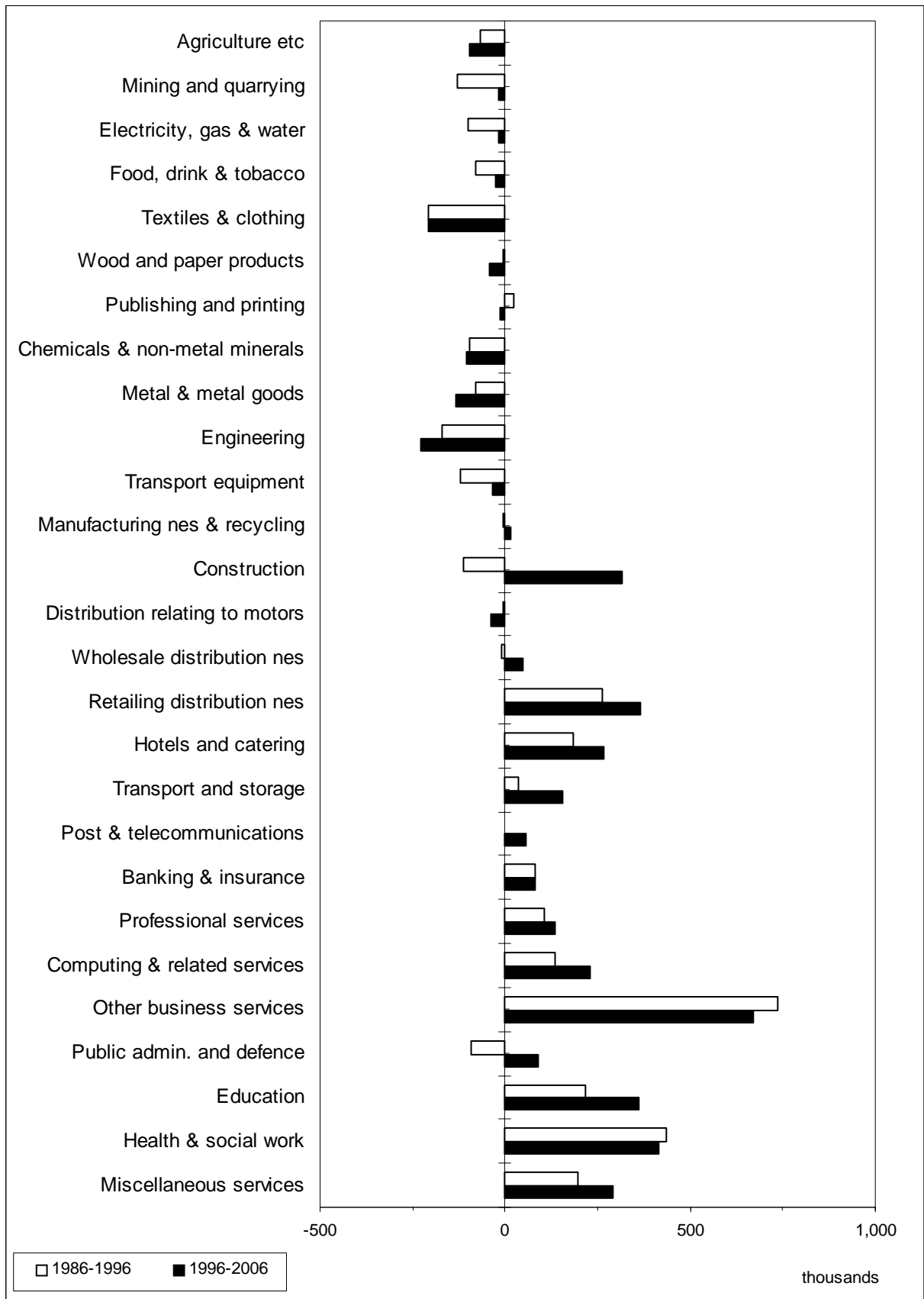
2.286 The main driving forces are:

- shifts in sectoral employment (resulting from changes in the patterns of demand for the goods and services produced by different sectors as a result of changing patterns of demand from consumers and others, as well as shifting patterns of national competitive advantage resulting from technological change and other changes in the way that work is organised, including the increasing competition from Asia);
- and changing occupational structures within sectors (which reflect changes in the nature of many jobs within particular sectors in response to technological innovation, especially related to ICT).

*The main driving forces are shifts in sectoral employment and changing occupational structures.*

2.287 Detailed occupational projections for the twenty-five sub-major occupational groups are presented in *Table A.1* and *Figure A.3*.

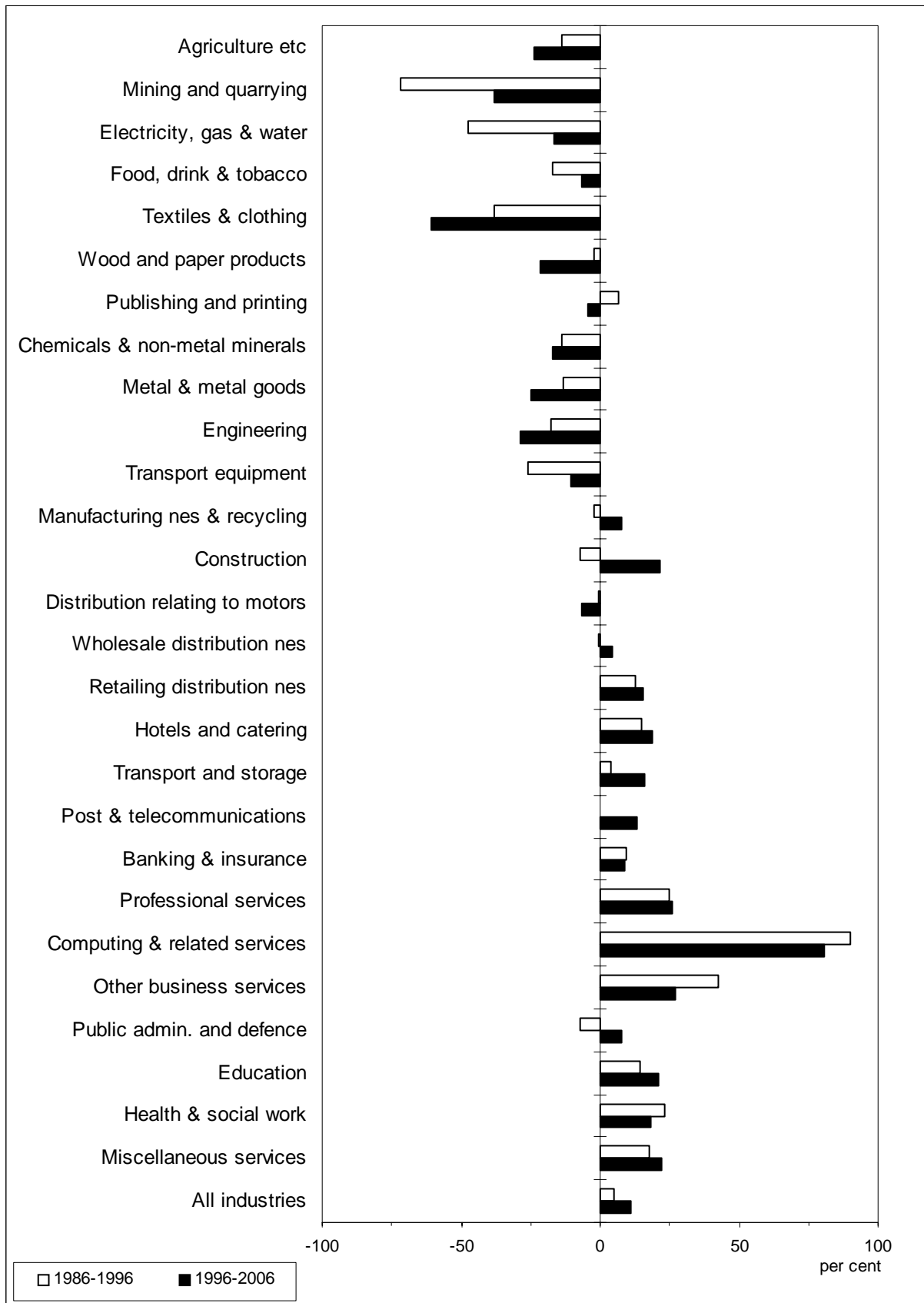
**Figure A.1: Changes in employment by industry, 1986–2006**



**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Note:** This figure shows absolute changes in thousands between the years indicated.

**Figure A.2: Rates of employment growth by industry, 1986–2006**



**Source:** IER estimates, based on *Working Futures 2004–2014*, (Wilson et al., 2006).

**Note:** This figure shows percentage changes between the years indicated.

**Table A.1: Projected occupational change, Standard Occupation Classification sub-major group, 2006–2014**

	2006	2014	Change 2006-2014	% shares	% shares	
	000s	000s	000s	%	2006	2014
Corporate managers	3,188	3,692	503	15.8	12.4	13.8
Managers and proprietors	941	887	-54	-5.7	3.7	3.3
Science/Tech. professionals	869	998	129	14.8	3.4	3.7
Health professionals	251	308	57	22.9	1.0	1.2
Teaching/research prof.	1,258	1,452	194	15.4	4.9	5.4
Public service prof.	736	828	92	12.5	2.9	3.1
Science associate prof.	530	581	51	9.7	2.1	2.2
Health associate prof.	898	953	56	6.2	3.5	3.6
Protective service occs.	336	338	3	0.8	1.3	1.3
Culture/media/sport occs.	608	724	116	19.0	2.4	2.7
Bus./public serv. assoc prof.	1,389	1,500	110	7.9	5.4	5.6
Admin & clerical occupations	2,380	2,302	-78	-3.3	9.3	8.6
Secretarial & related occs.	763	593	-171	-22.3	3.0	2.2
Skilled agricultural trades	302	342	40	13.3	1.2	1.3
Skilled metal/elec. trades	1,014	784	-230	-22.7	3.9	2.9
Skilled construct. trades	1,022	1,185	163	15.9	4.0	4.4
Other skilled trades	521	457	-64	-12.3	2.0	1.7
Caring personal service occs.	1,496	1,772	276	18.4	5.8	6.6
Leisure/other pers. serv. occs.	474	502	28	6.0	1.8	1.9
Sales occupations	1,720	1,898	178	10.3	6.7	7.1
Customer service occupations	382	474	91	23.8	1.5	1.8
Process plant & mach. ops.	975	756	-219	-22.5	3.8	2.8
Transport drivers and ops.	971	1,112	141	14.5	3.8	4.2
Elementary: trades/plant/mach.	790	541	-250	-31.6	3.1	2.0
Elementary: clerical/service	1,909	1,717	-192	-10.1	7.4	6.4
All occupations	25,723	26,694	971	3.8	100.0	100.0

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

## Prospects by detailed occupation within sectors

- 2.288 The *Working Futures, 2004-2014* projections also make possible a more detailed examination of occupational trends within sectors. *Table A.2* provides some further insights into how the importance of different occupational categories varies across individual industries, as well as making it possible to identify those that are growing or declining most rapidly.
- 2.289 In many respects the overall patterns of change are similar across sectors. But the different economic prospects for the sectors, together with their different existing occupational employment structures, result in substantial variations in the projected changes. *Table A.2* provides an overview of this more complex picture. Shading and use of + and – signs in the cells help to highlight which occupations are numerically important in different industries, as well as those which are growing or developing most rapidly. The shaded cells within the main body of the table indicate employment of 25,000 or more in 2006 or 2014. Shading of row and column headers indicates changes for the sector or occupation as a whole.
- 2.290 The patterns illustrate the importance of the service sector in terms of providing jobs across the occupational spectrum. The + signs indicate rates of growth of employment in excess of 20 per cent over the period 2006 to 2014. A few occupations are expected to achieve this in almost every sector (customer services occupations (SOC 72). Rapid job losses in excess of 20 per cent, indicated by the ‘–’ sign, are concentrated among low and unskilled occupations (SOCs 81, 91 and 92) in many sectors.

*For the most part the patterns of occupational change are the same across most sectors.*

*The projections reveal the increasing importance of the service sector for all occupations.*

## Replacement demand by detailed occupation and sector

- 2.291 Projected changes in the level of employment can give a misleading impression of priorities for education and training. It is also important to consider replacement demands. These reflect the need to replace those leaving the workforce (principally because of retirement). By combining replacement demands with the projected structural or ‘expansion’ demand, an estimate of the overall net requirement for each occupation can be obtained.

*Replacement demands are substantial.*

- 2.292 Results for each of the 25 occupational sub-major groups are set out in *Table A.3* and *Figure A.3*. This information relates to the whole of England. Replacement demands outweigh the net projected decline in all occupations where job losses are expected. Between 2006 and 2014 there is expected to be an overall requirement of some 8.4 million new job openings. Retirements from the workforce are the main component of replacement demands.
- 2.293 Even in occupations such as administrative and clerical occupations, secretarial and related occupations, skilled metal and electrical trades (as well as other skilled trades), process plant and machine operatives and elementary occupations, total requirements are strongly positive despite negative expansion demand. In other cases, expected retirements will add to positive expansion demand to create even higher overall requirements for new entrants to these occupations.
- 2.294 Replacement demand will exist across all occupational levels in all sectors except where new technologies or processes or re-structuring result in particular roles becoming obsolete.
- 2.295 In principle, replacement demands will vary across regions and sectors depending upon the gender and age structures of their workforces as well as variations in the rates of flows, including geographical and other mobility flows. In practice, measuring these is far from straightforward. Currently, the estimates of age structures and rates of flows are based on the LFS. While this is adequate to generate reasonably robust estimates at national level, the sample size is too small to produce meaningful estimates consistently differentiated by sector or by region. The estimates here are therefore based on the same assumptions about age structures and flow rates as at national (UK) level.
- 2.296 Nevertheless, such benchmark estimates are useful in emphasising that, even for sectors (and regions) where quite sharp employment losses are projected, replacement demands are likely to be more than sufficient to outweigh these trends. *Table A.4* presents estimates corresponding to those in *Table A.3*, but for 16 broad sectors. Regional results are presented at the end of this Annex.
- Even in occupations where total employment is in decline, replacement demands are positive.*

## Implications for the demand for qualifications

2.297 The *Working Futures, 2004-2014* projections also include forecasts of the implications for the types of qualifications that might be needed. Details of the approach methods and caveats in interpretation can be found in Wilson and Bosworth (2006). The results are summarised in *Tables A.5* and *A.6*.

**Table A.2: Projected changes in occupational structure by SSDA Sector Matrix Industries, 2006-2014**

	Sub-Major Groups																								
	11	12	21	22	23	24	31	32	33	34	35	41	42	51	52	53	54	61	62	71	72	81	82	91	92
Agriculture etc																									
Mining and quarrying																									
Food, drink & tobacco			-						-	+			-		-		-					-		-	
Textiles & clothing									-	+					-	+		+				-		-	
Wood and paper products												-	-	+		+						-		-	-
Publishing and printing		-			-			-			-	-	-	+	-	+	-	-	-	-	-	-		-	-
Chemicals & non-metal minerals				+					-				-	+	-		-					-		-	-
Metal & metal goods				+						+		-	-			+		-		-			-	-	-
Engineering										+					-		-				+	-		-	-
Transport equipment								+	-	+						-	+					+	-	-	-
Manufacturing nes & recycling																-	+	-				+	-	-	-
Electricity, gas & water				+					-							-				+	+	+	-	-	-
Construction				+						+			-	+		+						-	+	-	-
Distribution relating to motors					-			-				-	-		-		-			-		-	-	-	-
Wholesale distribution nes																-	-					-	-	-	-
Retailing distribution nes		-											-	+	-	+		+			+		+		
Hotels and catering			+	+			+							+	+		+		+		+		+		
Transport and storage	+			+	+	+				+			-	+		+		+	+				+	-	
Post & telecommunications			+	+	+		+	+		+				+		+		+		+	+		+		
Banking & insurance	+			+	+			+		+		+			-	+		+		+	+	-		-	-
Professional services														+	-	+				+	+		+	-	-
Computing & related services			+	+	+			+		+			-			+		+			+		-	-	-
Other business services													-	+	-	+	-	+			+	-	+	-	-
Public admin and defence	+		+	+	+	+	+	+			+	+		+		+		+	+	+	+		+	-	+
Education	+		+	+	+					+			-	+		+		+		+	+		+	-	-
Health & social work					+								-		-		-	+				-		-	-
Miscellaneous services												-	-			+	-					-		-	-

- level of employment in 2006 and/or 2014 is 25000 or greater.
- + growth in employment between 2006 and 2014 is forecast to be 20% or greater.
- growth in employment between 2006 and 2014 is forecast to be -20% or less.
- growth in employment in the sector or the occupation between 2006 and 2014 is forecast to be 10% or greater.
- growth in employment in the sector or the occupation between 2006 and 2014 is forecast to be -10% or less.



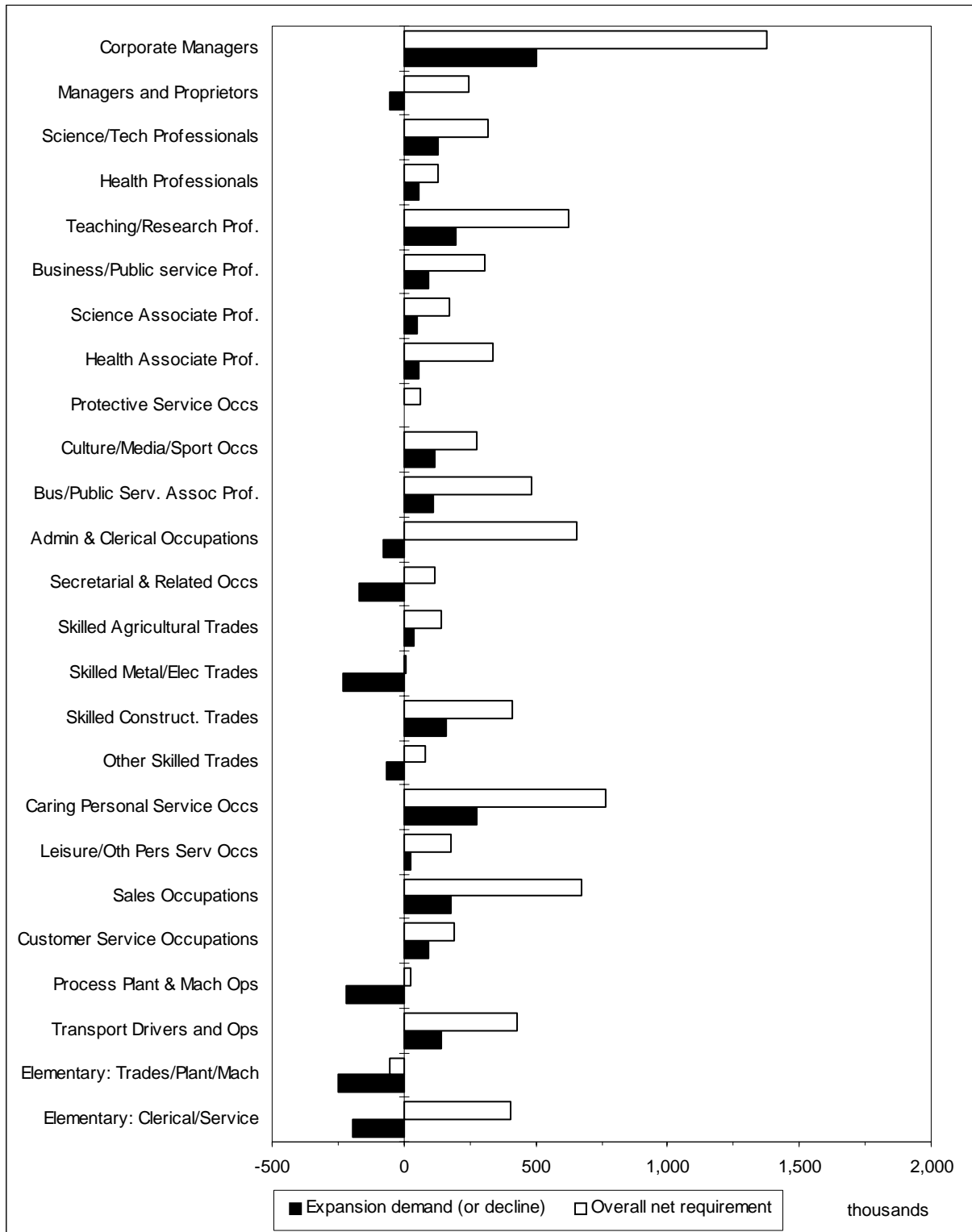
**Table A.3: Replacement demand by Standard Occupation Classification sub-major group, 2006–2014**

	(1)	(2)	thousands (3)
	Expansion demand (or decline)	Replacement and mortality	Overall net requirement (1)+(2)
Corporate Managers	503	872	1,375
Managers and Proprietors	-54	302	248
Science/Tech Professionals	129	188	317
Health Professionals	57	71	129
Teaching/Research Prof.	194	434	627
Business/Public service Prof.	92	212	304
Science Associate Prof.	51	122	174
Health Associate Prof.	56	282	338
Protective Service Occs	3	62	65
Culture/Media/Sport Occs	116	162	278
Bus/Public Serv. Assoc Prof.	110	372	483
Admin & Clerical Occupations	-78	731	653
Secretarial & Related Occs	-171	287	117
Skilled Agricultural Trades	40	102	143
Skilled Metal/Elec Trades	-230	239	10
Skilled Construct. Trades	163	248	411
Other Skilled Trades	-64	146	82
Caring Personal Service Occs	276	489	765
Leisure/Oth Pers Serv Occs	28	153	181
Sales Occupations	178	499	677
Customer Service Occupations	91	102	193
Process Plant & Mach Ops	-219	246	27
Transport Drivers and Ops	141	286	427
Elementary: Trades/Plant/Mach	-250	193	-56
Elementary: Clerical/Service	-192	595	402
All occupations	971	7,397	8,368

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Note:** These estimates do not allow for any losses due to occupational or geographical mobility.

**Figure A.3: Net requirements and expansion demand by Standard Occupation Classification 2000 sub-major group, 2006–2014**



**Table A.4: Replacement demand by sector and occupation, 2006–2014**

	000s									
a) Expansion demand	SOC Major Group									
	1	2	3	4	5	6	7	8	9	All
1. Agriculture hunting forestry fishing	-2	0	0	-1	4	1	0	-7	-32	-38
2. Mining and quarrying	0	0	0	0	-1	0	0	-1	-1	-4
3. Food drink & tobacco	3	1	-1	-7	-5	0	-3	-8	-16	-35
4. Engineering	-1	0	-1	-4	-13	0	3	-12	-15	-42
5. Rest of manufacturing	7	-1	8	-23	-38	-2	0	-67	-72	-188
6. Electricity gas and water	-1	-1	-1	-4	-4	0	1	-1	-2	-14
7. Construction	11	4	2	-14	-14	1	2	-17	-42	-67
8. Retail distribution	85	24	47	-41	-5	37	144	30	-47	274
9. Hotels and restaurants	33	6	12	40	-35	10	31	-8	-39	50
10. Transport storage & communication	33	6	12	40	-35	10	31	-8	-39	50
11. Banking and Insurance	17	16	11	-36	-1	2	15	-1	-5	17
12. Other business activities	148	144	149	-28	15	87	53	21	-7	583
13. Public admin & defence	24	8	-4	-45	-3	11	3	-2	-19	-28
14. Education	12	140	3	-32	1	-1	-1	0	-45	77
15. Health and social work	57	65	28	-39	4	123	2	-1	-47	192
16. Other services	45	61	68	-10	4	4	3	-8	-51	116
All Sectors	449	472	336	-249	-91	304	269	-78	-442	971
b) Replacement demand	SOC Major Group									
	1	2	3	4	5	6	7	8	9	All
1. Agriculture hunting forestry fishing	9	1	2	3	46	7	1	6	20	95
2. Mining and quarrying	1	1	1	1	2	0	0	2	1	8
3. Food drink & tobacco	14	4	8	8	14	1	6	27	15	96
4. Engineering	24	14	17	17	31	3	4	26	11	146
5. Rest of manufacturing	78	30	61	53	115	11	14	122	54	538
6. Electricity gas and water	3	3	2	4	5	1	2	3	2	24
7. Construction	61	23	24	38	204	3	6	48	34	441
8. Retail distribution	232	33	99	117	110	48	408	79	118	1,244
9. Hotels and restaurants	47	17	32	85	46	20	18	103	54	422
10. Transport storage & communication	47	17	32	85	46	20	18	103	54	422
11. Banking and Insurance	43	22	33	140	8	4	25	5	16	297
12. Other business activities	236	179	222	249	51	94	49	42	78	1,201
13. Public admin & defence	49	36	62	105	10	21	8	11	42	345
14. Education	38	378	77	42	7	73	7	12	51	685
15. Health and social work	109	107	240	79	14	252	14	12	42	869
16. Other services	87	50	94	45	21	79	14	25	55	470
All Sectors	1,174	905	1,001	1,019	736	642	601	532	788	7,397
c) Total requirements	SOC Major Group									
	1	2	3	4	5	6	7	8	9	All
1. Agriculture hunting forestry fishing	6	0	2	2	50	8	1	-1	-11	57
2. Mining and quarrying	1	0	0	1	1	0	0	0	0	4
3. Food drink & tobacco	17	5	7	2	8	1	3	20	-1	61
4. Engineering	23	15	17	13	18	3	6	14	-4	104
5. Rest of manufacturing	85	30	69	30	77	9	13	54	-18	349
6. Electricity gas and water	2	1	1	1	1	0	3	1	0	10
7. Construction	73	28	26	23	190	3	8	32	-8	375
8. Retail distribution	318	57	146	75	104	86	552	109	71	1,519
9. Hotels and restaurants	80	23	44	125	11	31	49	95	15	472
10. Transport storage & communication	80	23	44	125	11	31	49	95	15	472
11. Banking and Insurance	60	39	44	104	7	6	39	4	11	314
12. Other business activities	385	322	371	221	66	182	103	63	72	1,783
13. Public admin & defence	73	44	58	60	7	32	12	9	22	317
14. Education	50	518	81	10	7	72	6	12	5	761
15. Health and social work	166	171	268	40	18	375	16	11	-5	1,062
16. Other services	132	111	162	35	24	83	17	18	4	586
All Sectors	1,623	1,377	1,337	770	646	946	870	454	346	8,368

**Source:** *Working Futures 2004–2014*, (Wilson et al., 2006).

**Notes:** These estimates do not allow for any losses due to occupational or geographical mobility.

Total net requirements = replacement demand plus expansion (or structural) demand.

**Table A.5: Implications for qualifications.**

<b>Total NQF category</b>	<b>Base year level 2006</b>	<b>Change 2006 - 2014</b>	<b>Projected level 2014</b>
NQF 5	1,573	960	2,534
NQF 4	6,148	1,741	7,889
NQF 3	5,028	1,523	6,551
NQF 2	5,688	-308	5,379
NQF 1	4,712	-1,053	3,659
NQF 0	2,573	-1,892	681
<b>total</b>	<b>25,723</b>	<b>971</b>	<b>26,694</b>
	<b>% share</b>	<b>% change</b>	<b>% share</b>
NQF 5	6.1	61.0	9.5
NQF 4	23.9	28.3	29.6
NQF 3	19.5	30.3	24.5
NQF 2	22.1	-5.4	20.2
NQF 1	18.3	-22.3	13.7
NQF 0	10.0	-73.5	2.6
<b>total</b>	<b>100.0</b>	<b>3.8</b>	<b>100.0</b>

**Source:** *Working Futures 2004–2014, Qualifications Report* (Wilson and Bosworth, 2006).

**Notes:** Producing consistent projections of qualifications across all the various dimensions covered in *Working Futures* is not possible due to data limitations.

**Table A.6: Projected change in demand for qualifications, 2006–2014.**

thousands

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Change in demand, 2006-2014, for those with:

	Employment change (including replacement demands)	NQF4+	NQF3	NQF2	NQF1	No qualification
Corporate Managers	1,375	1,112	317	54	-5	-103
Managers and Proprietors	248	158	112	22	11	-55
Science/Tech Professionals	317	295	21	7	1	-6
Health Professionals	129	112	6	4	6	1
Teaching/Research Prof.	627	604	25	1	-2	-1
Business/Public service Prof.	304	285	35	-7	-5	-3
Science Associate Prof.	174	105	64	11	2	-10
Health Associate Prof.	338	224	78	28	15	-7
Protective Service Occs	65	53	39	5	-21	-10
Culture/Media/Sport Occs	278	258	37	-1	-4	-12
Bus/Public Serv. Assoc Prof.	483	370	153	17	-26	-32
Admin & Clerical Occupations	653	338	321	93	9	-107
Secretarial & Related Occs	117	69	75	6	-13	-21
Skilled Agricultural Trades	143	69	45	31	31	-33
Skilled Metal/Elec Trades	10	12	88	-31	-9	-50
Skilled Construct. Trades	411	35	251	82	113	-70
Other Skilled Trades	82	38	60	30	3	-49
Caring Personal Service Occs	765	222	416	274	-44	-103
Leisure/Oth Pers Serv Occs	181	46	120	44	6	-34
Sales Occupations	677	147	387	267	41	-165
Customer Service Occupations	193	48	103	58	1	-18
Process Plant & Mach Ops	27	25	55	51	26	-131
Transport Drivers and Ops	427	52	150	128	132	-35
Elementary: Trades/Plant/Mach	-56	11	14	21	5	-107
Elementary: Clerical/Service	402	116	227	169	130	-240
All occupations	8,368	4,803	3,199	1,363	403	-1,401

**Source:** *Working Futures 2004–2014, Qualifications Report* (Wilson and Bosworth, 2006).

**Notes:** Producing consistent projections of qualifications across all the various dimensions covered in *Working Futures* is not possible due to data limitations. The estimates in this table therefore differ marginally from those in Table A.5.

## Regional variations in future skill needs

- 2.298 The *Working Futures, 2004-2014* projections also suggest substantial regional variations in the pattern of expected future skill needs (see *Figure A.4*). This reflects their economic structures. Differences in general economic prospects, together with differences in their existing employment structures, mean that the skill needs of different regions will vary. Nevertheless, similar trends in occupational mix within industries are expected. This is reflected in terms of the projected changes in occupational employment, qualifications and other indicators. Variations in regional patterns of growth and decline across a wide range of occupations will have important implications for developments in the supply of skills required at the regional level. Providers will need to tailor their provision to meet these specific needs.

*Regional skill needs will vary in the future, so education and training providers will need to tailor supply to reflect this.*

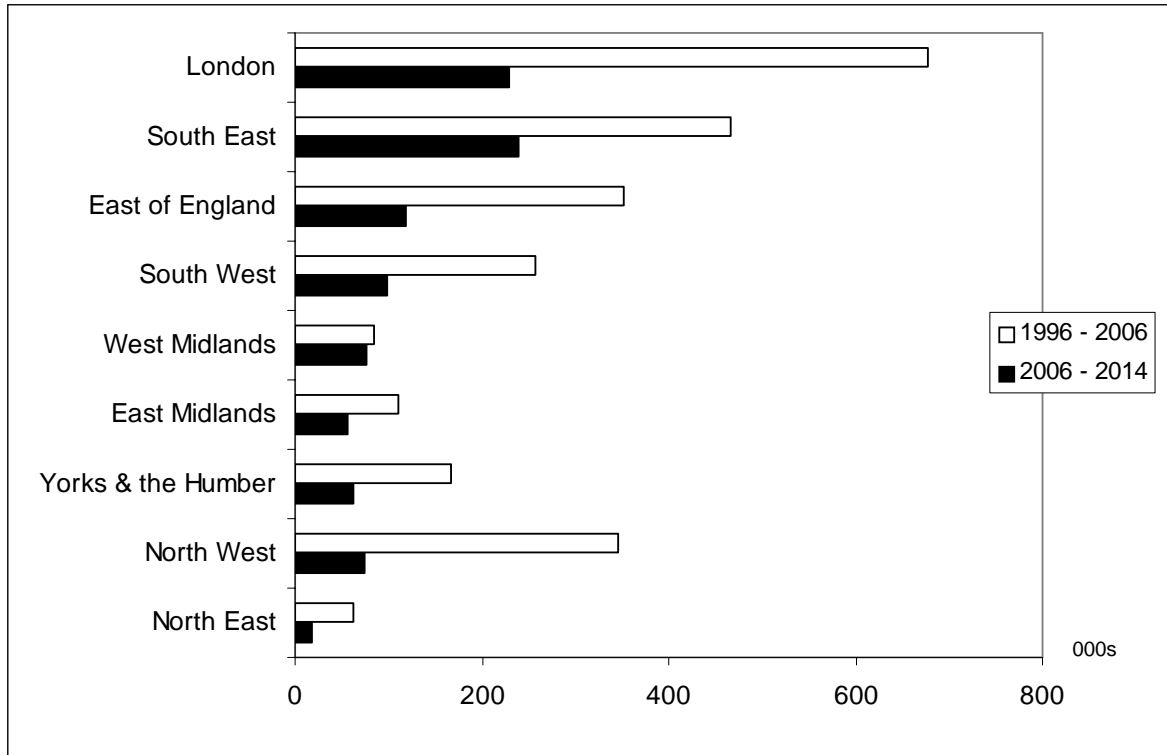
## Sectoral prospects by region

- 2.299 Details of broad sectoral employment prospects for individual regions are shown in *Tables A.7-A.9*. The dependence of particular regions on certain sectors is shown by the scale and share of sectoral employment in each region. The changes expected over the decade to 2014 are shown in *Table A.9*. These illustrate the preponderance of negative effects (shaded) in the top part of the table and relate to primary and manufacturing industries and utilities. The declines in manufacturing are especially significant in both absolute and percentage terms for regions in the Midlands and the North of England.
- 2.300 *Tables A.10 – A.12* illustrate a more detailed industrial breakdown for the 27 SEDA Sector Matrix industries. Patterns at this level of detail are more varied and reflect the detailed industrial specialisms of the regions. Nevertheless, the overall messages in terms of industrial structural changes are common across most regions. Again, primary utilities and manufacturing industries present a picture of consistent employment decline, with just one or two minor exceptions. The position in some of the service industries is more mixed. Public administration is projected to experience job losses in most regions. It is in business and professional services, miscellaneous services and non-marketed

*The decline in primary and manufacturing industries will affect the Midlands and the North most of all.*

services such as education and health that most regions are projected to gain employment.

**Figure A.4: Changes in employment by region**



**Source:** *Working futures 2004-2014, (Wilson et al., 2006).*

**Table A.7: Levels of projected employment by broad sector and region, 2006–2014**

	thousands									
	London		South East		East of England		South West		West Midlands	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Primary & utilities	14	11	94	87	57	44	76	69	53	43
Manufacturing	261	233	397	370	322	295	280	247	417	375
Construction	276	274	313	313	238	232	175	180	173	152
Distribution, transport etc.	1,305	1,364	1,294	1,386	839	899	768	816	743	782
Business & misc. services	1,754	1,929	1,239	1,366	723	801	606	664	588	662
Non-marketed services	945	973	938	992	588	614	642	670	640	675
All industries	4,555	4,785	4,275	4,514	2,767	2,885	2,548	2,646	2,614	2,689

	Yorkshire and									
	East Midlands		the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Primary & utilities	43	39	46	38	35	32	21	19	439	383
Manufacturing	325	295	355	332	444	403	150	136	2,951	2,686
Construction	146	140	180	156	203	194	67	66	1,773	1,706
Distribution, transport etc.	576	607	736	769	1,033	1,058	303	320	7,596	7,999
Business & misc. services	414	455	561	628	808	886	230	248	6,924	7,639
Non-marketed services	495	520	599	617	862	887	331	331	6,040	6,281
All industries	2,000	2,056	2,477	2,540	3,385	3,459	1,102	1,120	25,723	26,694

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).



**Table A.8: Industry shares of projected employment by broad sector and region, 2006–2014**

	per cent									
	London		South East		East of England		South West		West Midlands	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Primary & utilities	0.3	0.2	2.2	1.9	2.0	1.5	3.0	2.6	2.0	1.6
Manufacturing	5.7	4.9	9.3	8.2	11.6	10.2	11.0	9.3	15.9	14.0
Construction	6.1	5.7	7.3	6.9	8.6	8.0	6.9	6.8	6.6	5.6
Distribution, transport etc.	28.6	28.5	30.3	30.7	30.3	31.2	30.1	30.8	28.4	29.1
Business & misc. services	38.5	40.3	29.0	30.3	26.1	27.8	23.8	25.1	22.5	24.6
Non-marketed services	20.7	20.3	21.9	22.0	21.3	21.3	25.2	25.3	24.5	25.1
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Yorkshire and									
	East Midlands		the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Primary & utilities	2.2	1.9	1.9	1.5	1.0	0.9	1.9	1.7	1.7	1.4
Manufacturing	16.3	14.3	14.3	13.1	13.1	11.6	13.6	12.1	11.5	10.1
Construction	7.3	6.8	7.3	6.1	6.0	5.6	6.1	5.9	6.9	6.4
Distribution, transport etc.	28.8	29.5	29.7	30.3	30.5	30.6	27.5	28.6	29.5	30.0
Business & misc. services	20.7	22.1	22.7	24.7	23.9	25.6	20.9	22.1	26.9	28.6
Non-marketed services	24.8	25.3	24.2	24.3	25.5	25.7	30.1	29.6	23.5	23.5
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Table A.9: Changes in projected employment by broad sector and region, 2006–2014**

	London		South East		East of England		South West		West Midlands	
	000s	%	000s	%	000s	%	000s	%	000s	%
Primary & utilities	-3	-20.9	-7	-7.5	-12	-21.7	-7	-9.7	-10	-18.8
Manufacturing	-28	-10.9	-26	-6.7	-27	-8.4	-34	-11.9	-41	-9.9
Construction	-2	-0.8	0	0.1	-6	-2.6	5	2.8	-21	-12.3
Distribution, transport etc.	60	4.6	92	7.1	60	7.1	48	6.2	38	5.2
Business & misc. services	175	10.0	127	10.2	78	10.8	58	9.5	74	12.6
Non-marketed services	28	3.0	54	5.7	26	4.4	29	4.4	36	5.6
All industries	229	5.0	239	5.6	118	4.3	98	3.8	76	2.9

	East Midlands		Yorkshire and the Humber		North West		North East		England	
	000s	%	000s	%	000s	%	000s	%	000s	%
Primary & utilities	-4	-9.5	-7	-16.3	-3	-9.8	-2	-7.9	-56	-12.8
Manufacturing	-31	-9.5	-22	-6.3	-42	-9.4	-14	-9.2	-265	-9.0
Construction	-6	-4.2	-25	-13.6	-10	-4.8	-2	-2.6	-67	-3.8
Distribution, transport etc.	31	5.3	33	4.4	25	2.4	18	5.8	403	5.3
Business & misc. services	41	9.9	67	12.0	78	9.7	18	7.7	715	10.3
Non-marketed services	25	5.1	18	2.9	26	3.0	0	0.0	241	4.0
All industries	56	2.8	63	2.5	74	2.2	18	1.7	971	3.8

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Table A.10: Levels of projected employment by industry and region, 2006–2014**

000s

	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
	Agriculture etc	5	5	67	63	44	32	60	55	38	31	31	29	33	28	26	24	10	9	314
Mining, quarrying & utilities - of which:	9	6	27	24	13	12	16	14	15	12	13	11	13	10	9	8	11	10	126	107
Mining and quarrying	2	2	4	3	3	3	5	4	2	2	4	4	6	5	2	2	3	3	31	27
Electricity, gas & water	6	4	24	21	10	9	11	9	13	11	8	7	7	6	7	6	8	7	94	80
Food, drink & tobacco	30	22	27	26	41	37	37	32	34	33	54	49	57	53	61	55	17	16	357	322
Textiles & clothing	16	11	5	4	9	5	8	4	10	5	28	22	21	16	29	20	5	4	132	91
Wood, paper & publishing - of which:	115	110	74	71	56	53	42	42	34	31	44	43	52	51	55	49	18	16	489	466
Wood and paper products	9	7	20	18	19	16	14	13	14	12	19	18	20	20	25	20	10	8	149	133
Publishing and printing	106	103	53	53	37	36	28	29	20	19	24	25	31	31	31	29	8	8	340	333
Chemicals & non-metal minerals	25	23	75	77	49	40	37	33	65	58	57	53	59	55	103	85	31	28	501	450
Metal & metal goods	18	17	44	38	36	38	30	27	97	83	39	35	60	54	48	46	24	21	396	357
Engineering	30	24	117	103	72	70	65	57	82	76	50	46	53	53	66	66	27	25	561	519
Transport equipment	11	9	28	26	36	30	43	33	70	64	30	23	22	21	52	52	17	16	308	272
Manufacturing nes & recycling	17	17	26	27	24	23	19	19	24	25	23	25	30	30	30	30	11	11	205	207
Construction	276	274	313	313	238	232	175	180	173	152	146	140	180	156	203	194	67	66	1,773	1,706
Distribution relating to motors	59	61	98	100	63	69	64	65	66	66	43	37	53	46	68	68	27	32	541	544
Wholesale distribution nes	187	195	217	244	119	124	95	101	129	142	98	112	107	120	148	153	33	31	1,133	1,223
Retailing distribution nes	386	421	447	487	320	348	291	321	257	270	212	227	276	288	372	379	119	122	2,680	2,863
Hotels and catering	328	341	280	297	173	185	198	207	147	152	108	111	146	154	229	237	65	69	1,674	1,753
Transport and storage	246	249	176	185	112	125	75	79	100	102	87	93	116	123	161	160	36	38	1,110	1,153
Post & telecommunications	99	98	76	73	52	49	45	43	46	49	27	26	37	38	56	61	22	28	458	464
Banking & insurance	343	345	150	158	91	94	95	97	77	76	44	44	86	90	107	108	27	26	1,020	1,037
Professional services	146	154	120	113	81	85	68	73	58	64	41	43	52	53	74	78	22	21	662	683
Computing & related services	114	142	134	176	59	80	38	43	42	58	28	30	31	37	55	70	14	17	514	654
Other business services	815	928	561	630	315	355	251	283	271	313	187	216	247	288	374	417	101	115	3,123	3,545
Public admin and defence	235	227	169	165	116	112	139	137	113	111	80	78	112	109	181	181	84	81	1,229	1,201
Education	292	293	335	355	203	212	223	235	241	254	183	194	211	217	287	294	106	107	2,083	2,159
Health & social work	418	453	434	472	269	291	279	298	285	310	232	249	276	291	394	412	142	144	2,728	2,920
Miscellaneous services	336	360	273	289	176	188	155	168	141	151	113	123	146	160	198	213	66	68	1,604	1,720
All industries	4,555	4,785	4,275	4,514	2,767	2,885	2,548	2,646	2,614	2,689	2,000	2,056	2,477	2,540	3,385	3,459	1,102	1,120	25,723	26,694

Source: *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Table A.11: Industry shares of projected employment by industry and region, 2006–2014**

	%																			
	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Agriculture etc	0.1	0.1	1.6	1.4	1.6	1.1	2.4	2.1	1.5	1.1	1.5	1.4	1.3	1.1	0.8	0.7	0.9	0.8	1.2	1.0
Mining, quarrying & utilities - of w hich:	0.2	0.1	0.6	0.5	0.5	0.4	0.6	0.5	0.6	0.5	0.6	0.5	0.4	0.3	0.2	1.0	0.9	0.5	0.4	
Mining and quarrying	0.0	0.0	0.1	0.1	0.1	0.1	0.2	0.2	0.1	0.1	0.2	0.2	0.2	0.2	0.1	0.1	0.3	0.3	0.1	0.1
Electricity, gas & w ater	0.1	0.1	0.6	0.5	0.4	0.3	0.4	0.4	0.5	0.4	0.4	0.3	0.3	0.2	0.2	0.2	0.7	0.6	0.4	0.3
Food, drink & tobacco	0.6	0.5	0.6	0.6	1.5	1.3	1.4	1.2	1.3	1.2	2.7	2.4	2.3	2.1	1.8	1.6	1.5	1.4	1.4	1.2
Textiles & clothing	0.3	0.2	0.1	0.1	0.3	0.2	0.3	0.2	0.4	0.2	1.4	1.1	0.9	0.6	0.9	0.6	0.5	0.3	0.5	0.3
Wood, paper & publishing - of w hich:	2.5	2.3	1.7	1.6	2.0	1.8	1.7	1.6	1.3	1.2	2.2	2.1	2.1	2.0	1.6	1.4	1.6	1.4	1.9	1.7
Wood and paper products	0.2	0.2	0.5	0.4	0.7	0.6	0.5	0.5	0.5	0.5	1.0	0.9	0.8	0.8	0.7	0.6	0.9	0.7	0.6	0.5
Publishing and printing	2.3	2.1	1.2	1.2	1.4	1.3	1.1	1.1	0.8	0.7	1.2	1.2	1.3	1.2	0.9	0.8	0.7	0.7	1.3	1.2
Chemicals & non-metal minerals	0.6	0.5	1.8	1.7	1.8	1.4	1.5	1.2	2.5	2.2	2.8	2.6	2.4	2.2	3.0	2.5	2.8	2.5	1.9	1.7
Metal & metal goods	0.4	0.3	1.0	0.8	1.3	1.3	1.2	1.0	3.7	3.1	2.0	1.7	2.4	2.1	1.4	1.3	2.2	1.9	1.5	1.3
Engineering	0.7	0.5	2.7	2.3	2.6	2.4	2.5	2.2	3.1	2.8	2.5	2.2	2.1	2.1	2.0	1.9	2.4	2.2	2.2	1.9
Transport equipment	0.2	0.2	0.6	0.6	1.3	1.0	1.7	1.2	2.7	2.4	1.5	1.1	0.9	0.8	1.5	1.5	1.6	1.4	1.2	1.0
Manufacturing nes & recycling	0.4	0.4	0.6	0.6	0.9	0.8	0.8	0.7	0.9	0.9	1.1	1.2	1.2	1.2	0.9	0.9	1.0	1.0	0.8	0.8
Construction	6.1	5.7	7.3	6.9	8.6	8.0	6.9	6.8	6.6	5.6	7.3	6.8	7.3	6.1	6.0	5.6	6.1	5.9	6.9	6.4
Distribution relating to motors	1.3	1.3	2.3	2.2	2.3	2.4	2.5	2.5	2.5	2.2	1.8	2.2	1.8	2.0	2.0	2.5	2.9	2.1	2.0	
Wholesale distribution nes	4.1	4.1	5.1	5.4	4.3	4.3	3.7	3.8	4.9	5.3	4.9	5.5	4.3	4.7	4.4	4.4	3.0	2.8	4.4	4.6
Retailing distribution nes	8.5	8.8	10.5	10.8	11.6	12.0	11.4	12.1	9.8	10.0	10.6	11.0	11.1	11.3	11.0	10.9	10.8	10.9	10.4	10.7
Hotels and catering	7.2	7.1	6.5	6.6	6.2	6.4	7.8	7.8	5.6	5.6	5.4	5.4	5.9	6.1	6.8	6.8	5.9	6.2	6.5	6.6
Transport and storage	5.4	5.2	4.1	4.1	4.0	4.3	3.0	3.0	3.8	3.8	4.4	4.5	4.7	4.8	4.8	4.6	3.2	3.4	4.3	4.3
Post & telecommunications	2.2	2.0	1.8	1.6	1.9	1.7	1.8	1.6	1.7	1.8	1.3	1.3	1.5	1.5	1.6	1.8	2.0	2.5	1.8	1.7
Banking & insurance	7.5	7.2	3.5	3.5	3.3	3.2	3.7	3.7	2.9	2.8	2.2	2.1	3.5	3.5	3.2	3.1	2.4	2.3	4.0	3.9
Professional services	3.2	3.2	2.8	2.5	2.9	2.9	2.7	2.7	2.2	2.4	2.1	2.1	2.1	2.1	2.2	2.2	2.0	1.9	2.6	2.6
Computing & related services	2.5	3.0	3.1	3.9	2.1	2.8	1.5	1.6	1.6	2.2	1.4	1.5	1.2	1.5	1.6	2.0	1.2	1.5	2.0	2.5
Other business services	17.9	19.4	13.1	13.9	11.4	12.3	9.8	10.7	10.4	11.6	9.4	10.5	10.0	11.4	11.1	12.0	9.2	10.3	12.1	13.3
Public admin and defence	5.2	4.8	4.0	3.7	4.2	3.9	5.5	5.2	4.3	4.1	4.0	3.8	4.5	4.3	5.4	5.2	7.6	7.2	4.8	4.5
Education	6.4	6.1	7.8	7.9	7.3	7.3	8.8	8.9	9.2	9.5	9.2	9.4	8.5	8.5	8.5	8.5	9.6	9.6	8.1	8.1
Health & social w ork	9.2	9.5	10.1	10.5	9.7	10.1	11.0	11.3	10.9	11.5	11.6	12.1	11.1	11.5	11.6	11.9	12.9	12.8	10.6	10.9
Miscellaneous services	7.4	7.5	6.4	6.4	6.3	6.5	6.1	6.3	5.4	5.6	5.7	6.0	5.9	6.3	5.9	6.2	6.0	6.1	6.2	6.4
All industries	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Working Futures 2004–2014, (Wilson et al., 2006).

**Table A.12: Changes in projected employment by industry and region, 2006–2014**

	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%
Agriculture etc	0	-8.7	-4	-5.9	-11	-25.5	-5	-8.4	-8	-20.1	-2	-6.9	-5	-15.0	-2	-6.9	-1	-8.1	-38	-12.1
Mining, quarrying & utilities - of which:	-2	-28.6	-3	-11.3	-1	-8.9	-2	-14.7	-2	-15.3	-2	-15.7	-2	-19.5	-2	-17.8	-1	-7.7	-18	-14.6
Mining and quarrying	0	-17.9	-1	-14.1	0	-11.6	-1	-13.4	0	-7.5	-1	-18.1	-1	-16.7	0	-5.2	0	-10.8	-4	-13.6
Electricity, gas & water	-2	-32.1	-3	-10.9	-1	-8.2	-2	-15.3	-2	-16.4	-1	-14.5	-2	-21.6	-2	-21.6	0	-6.4	-14	-14.9
Food, drink & tobacco	-7	-25.1	-2	-6.3	-4	-10.5	-5	-12.7	-1	-4.2	-5	-9.2	-4	-6.9	-6	-9.1	-1	-6.7	-35	-9.8
Textiles & clothing	-5	-31.3	-2	-31.5	-3	-37.9	-4	-46.3	-5	-50.2	-6	-22.5	-5	-23.8	-9	-30.7	-2	-33.0	-41	-30.9
Wood, paper & publishing - of which:	-5	-4.0	-3	-4.0	-3	-5.7	0	-0.7	-3	-8.0	-1	-1.7	-1	-1.4	-6	-11.1	-2	-10.3	-23	-4.7
Wood and paper products	-1	-13.6	-2	-10.4	-2	-12.1	-1	-8.4	-2	-11.6	-1	-7.2	0	-1.4	-5	-18.7	-2	-19.8	-16	-11.1
Publishing and printing	-3	-3.2	-1	-1.5	-1	-2.5	1	3.0	-1	-5.5	1	2.7	0	-1.4	-1	-4.9	0	1.0	-7	-2.0
Chemicals & non-metal minerals	-3	-11.7	1	1.9	-9	-19.2	-4	-10.8	-7	-11.4	-4	-7.5	-4	-6.8	-17	-16.8	-3	-10.6	-51	-10.2
Metal & metal goods	-2	-10.0	-6	-13.2	2	5.7	-3	-10.6	-14	-14.4	-4	-11.1	-6	-10.5	-3	-5.3	-3	-11.3	-39	-9.8
Engineering	-5	-18.1	-14	-12.1	-2	-2.7	-8	-12.1	-6	-6.9	-4	-8.1	0	-0.7	-1	-1.1	-2	-6.7	-42	-7.5
Transport equipment	-1	-12.8	-2	-8.0	-5	-15.5	-10	-23.0	-6	-8.6	-8	-25.3	-1	-6.2	0	-0.1	-2	-9.6	-36	-11.6
Manufacturing nes & recycling	0	0.3	1	2.9	-1	-5.8	0	-0.2	1	4.7	2	7.2	-1	-2.2	0	-1.2	0	3.3	1	0.7
Construction	-2	-0.8	0	0.1	-6	-2.6	5	2.8	-21	-12.3	-6	-4.2	-25	-13.6	-10	-4.8	-2	-2.6	-67	-3.8
Distribution relating to motors	3	4.4	2	1.6	6	9.3	1	1.2	0	0.6	-6	-14.2	-8	-14.1	0	0.2	5	16.9	2	0.4
Wholesale distribution nes	7	4.0	27	12.4	5	4.4	6	6.5	13	10.3	15	14.9	13	11.9	5	3.7	-2	-6.9	90	7.9
Retailing distribution nes	35	9.1	40	8.9	27	8.5	30	10.3	13	5.2	15	6.9	12	4.3	7	1.9	3	2.7	183	6.8
Hotels and catering	13	4.0	17	6.1	12	7.0	9	4.7	5	3.7	2	2.3	8	5.4	8	3.4	4	5.6	79	4.7
Transport and storage	3	1.1	9	5.3	13	11.3	3	4.4	3	2.7	6	6.8	6	5.3	-1	-0.6	2	5.9	44	3.9
Post & telecommunications	-1	-1.2	-3	-4.0	-3	-6.4	-2	-4.1	3	7.1	-1	-2.7	2	4.2	5	9.7	6	28.5	6	1.4
Banking & insurance	2	0.5	7	4.8	2	2.2	2	2.1	0	-0.1	-1	-1.8	4	5.0	2	1.5	-1	-2.9	17	1.7
Professional services	8	5.2	-7	-6.0	4	4.5	4	6.4	7	11.3	2	3.7	1	2.1	4	5.5	-1	-4.3	21	3.1
Computing & related services	28	24.7	42	31.5	21	35.8	6	14.8	16	38.5	2	6.6	6	19.9	16	29.0	3	23.5	140	27.3
Other business services	113	13.9	68	12.2	39	12.5	33	13.0	42	15.5	29	15.4	41	16.6	42	11.3	14	13.8	422	13.5
Public admin and defence	-7	-3.1	-4	-2.4	-5	-4.1	-2	-1.3	-2	-1.6	-2	-2.5	-3	-3.0	0	0.1	-3	-3.6	-28	-2.3
Education	1	0.2	19	5.7	8	4.2	12	5.2	13	5.3	10	5.6	6	2.6	7	2.3	1	1.1	77	3.7
Health & social work	35	8.4	39	8.9	22	8.2	19	6.7	25	8.6	17	7.4	15	5.5	19	4.7	2	1.3	192	7.0
Miscellaneous services	24	7.1	16	6.0	12	6.9	13	8.4	10	6.7	9	8.3	15	10.1	15	7.4	2	3.4	116	7.2
All industries	229	5.0	239	5.6	118	4.3	98	3.8	76	2.9	56	2.8	63	2.5	74	2.2	18	1.7	971	3.8

Source: *Working Futures 2004–2014*, (Wilson et al., 2006).

Note: Shaded areas indicate projected employment decline.

## Occupational prospects by region

- 2.301 *Tables A.13 – A.15* illustrate the common patterns of change across the regions for SOC 2000 major groups. In particular, *Table A.15* shows how declining employment (shaded cells) is in the same categories in most regions. Job losses are projected to be concentrated in:
- administrative, clerical and secretarial occupations;
  - skilled trades;
  - machine and transport operatives;
  - elementary occupations.
- 2.302 Other occupations are projected to grow in all regions. There is expected to be especially strong growth in demand for managers and senior officials in London, the South East and East of England; for professionals and associate professional occupations in London; and for personal service occupations in the South East, East of England and the Midlands.
- 2.303 The projections also make possible a more detailed examination of occupational trends at regional level, using the 25 SOC 2000 sub-major occupational groups (see *Tables A.16 – A.19*). *Table A.19* provides some further insights into how the importance of different occupational categories varies across regions, as well as making it possible to identify those which are growing or declining most rapidly.
- 2.304 Although the overall patterns of change are similar across regions, their different existing employment structures result in substantial regional variations in the projected changes. *Table A.19* provides an overview of this more complex picture. Shading and use of + and – signs in the cells help to highlight which occupations are numerically important in different locations as well as those which are growing or developing most rapidly. The shaded cells indicate employment of 100,000 or more in 2006 or 2014. Shading of row headers indicates changes for the whole sector or occupation.
- 2.305 Subject to the differences imposed by their different industrial structures, trends in occupational structure are expected to follow similar patterns in most regions to those at national level. These different industrial structures mean that there are some substantial variations in occupational prospects across the regions over the coming decade.

**Table A.13: Levels of projected employment by Standard Occupational Classification major group and region, 2006–2014**

	thousands									
	London		South East		East of England		South West		West Midlands	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Managers	851	970	774	873	468	523	390	425	369	405
Professionals	678	812	519	587	317	365	299	342	287	327
Associate prof.	877	1,017	643	694	385	418	338	361	348	380
Administrative	553	425	534	485	345	323	294	267	326	327
Skilled trades	389	372	453	459	322	314	319	323	337	315
Personal service	271	290	321	382	204	240	214	251	217	260
Sales	299	334	341	393	226	253	231	265	204	225
Operatives	211	201	257	256	203	195	184	174	256	239
Elementary	427	363	433	385	298	254	279	238	268	211
All	4,555	4,785	4,275	4,514	2,767	2,885	2,548	2,646	2,614	2,689

	Yorkshire and the									
	East Midlands		Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Managers	306	339	356	388	477	506	140	149	4,129	4,579
Professionals	224	257	262	297	406	464	122	135	3,114	3,586
Associate prof.	255	275	310	325	458	477	146	151	3,761	4,097
Administrative	224	210	303	305	433	428	130	125	3,143	2,894
Skilled trades	234	217	300	286	372	355	132	126	2,858	2,767
Personal service	176	207	200	231	279	320	88	94	1,970	2,274
Sales	172	198	225	252	297	329	107	123	2,103	2,372
Operatives	194	185	243	236	294	279	104	102	1,946	1,868
Elementary	215	169	278	221	369	300	133	114	2,699	2,257
All	2,000	2,056	2,477	2,540	3,385	3,459	1,102	1,120	25,723	26,694

**Source:** *Working Futures 2004–2014*, (Wilson et al., 2006).

**Table A.14: Industry shares of projected employment by Standard Occupational Classification major group and region, 2006–2014**

	per cent									
	London		South East		East of England		South West		West Midlands	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Managers	18.7	20.3	18.1	19.3	16.9	18.1	15.3	16.1	14.1	15.1
Professionals	14.9	17.0	12.1	13.0	11.4	12.6	11.7	12.9	11.0	12.2
Associate prof.	19.3	21.2	15.0	15.4	13.9	14.5	13.3	13.6	13.3	14.1
Administrative	12.1	8.9	12.5	10.7	12.5	11.2	11.6	10.1	12.5	12.2
Skilled trades	8.5	7.8	10.6	10.2	11.6	10.9	12.5	12.2	12.9	11.7
Personal service	5.9	6.1	7.5	8.5	7.4	8.3	8.4	9.5	8.3	9.7
Sales	6.6	7.0	8.0	8.7	8.2	8.8	9.1	10.0	7.8	8.4
Operatives	4.6	4.2	6.0	5.7	7.3	6.8	7.2	6.6	9.8	8.9
Elementary	9.4	7.6	10.1	8.5	10.8	8.8	11.0	9.0	10.3	7.9
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

	Yorkshire and the									
	East Midlands		Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Managers	15.3	16.5	14.4	15.3	14.1	14.6	12.7	13.3	16.1	17.2
Professionals	11.2	12.5	10.6	11.7	12.0	13.4	11.1	12.1	12.1	13.4
Associate prof.	12.7	13.4	12.5	12.8	13.5	13.8	13.3	13.5	14.6	15.3
Administrative	11.2	10.2	12.2	12.0	12.8	12.4	11.8	11.2	12.2	10.8
Skilled trades	11.7	10.6	12.1	11.3	11.0	10.3	11.9	11.2	11.1	10.4
Personal service	8.8	10.1	8.1	9.1	8.2	9.3	8.0	8.4	7.7	8.5
Sales	8.6	9.6	9.1	9.9	8.8	9.5	9.7	11.0	8.2	8.9
Operatives	9.7	9.0	9.8	9.3	8.7	8.1	9.4	9.1	7.6	7.0
Elementary	10.7	8.2	11.2	8.7	10.9	8.7	12.0	10.2	10.5	8.5
All	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

**Source:** *Working Futures 2004–2014*, (Wilson et al., 2006).



**Table A.15: Changes in projected employment by Standard Occupational Classification major group and region, 2006–2014**

	London		South East		East of England		South West		West Midlands	
	000s	%	000s	%	000s	%	000s	%	000s	%
Managers	120	14.1	99	12.8	55	11.8	36	9.1	36	9.6
Professionals	135	19.9	68	13.2	48	15.2	43	14.4	40	14.0
Associate prof.	139	15.9	51	8.0	32	8.4	23	6.7	31	8.9
Administrative	-128	-23.2	-49	-9.2	-22	-6.5	-28	-9.4	1	0.2
Skilled trades	-17	-4.3	5	1.2	-8	-2.4	4	1.3	-22	-6.4
Personal service	18	6.8	61	19.1	36	17.6	37	17.2	42	19.5
Sales	35	11.7	52	15.2	27	11.9	34	14.8	21	10.1
Operatives	-10	-4.5	-1	-0.4	-7	-3.5	-10	-5.2	-17	-6.6
Elementary	-64	-14.9	-48	-11.0	-44	-14.7	-41	-14.7	-57	-21.2
All	229	5.0	239	5.6	118	4.3	98	3.8	76	2.9

	Yorkshire and the									
	East Midlands		Humber		North West		North East		England	
	000s	%	000s	%	000s	%	000s	%	000s	%
Managers	33	10.7	32	9.1	30	6.3	9	6.7	449	10.9
Professionals	33	14.8	35	13.2	57	14.1	13	10.7	472	15.2
Associate prof.	20	7.8	15	4.7	19	4.2	5	3.5	336	8.9
Administrative	-14	-6.4	2	0.6	-5	-1.1	-5	-3.6	-249	-7.9
Skilled trades	-17	-7.2	-14	-4.6	-18	-4.8	-6	-4.3	-91	-3.2
Personal service	31	17.5	31	15.7	42	14.9	6	6.3	304	15.4
Sales	26	15.1	27	12.0	31	10.6	16	14.6	269	12.8
Operatives	-10	-4.9	-8	-3.2	-15	-5.0	-2	-1.9	-78	-4.0
Elementary	-46	-21.3	-57	-20.4	-68	-18.5	-18	-13.7	-442	-16.4
All	56	2.8	63	2.5	74	2.2	18	1.7	971	3.8

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).

**Note:** Shading indicates areas of expected employment decline.

**Table A.16: Levels of projected employment by Standard Occupational Classification sub-major group and region, 2006–2014**

000s

	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Corporate managers	669	794	609	714	363	423	291	335	290	335	234	271	268	306	362	402	101	111	3,188	3,692
Managers and proprietors	181	176	165	158	105	100	98	91	79	70	72	67	87	82	114	104	39	38	941	887
Science/Tech. professionals	150	174	170	191	105	119	80	90	85	99	66	79	68	81	113	130	32	36	869	998
Health professionals	60	77	36	43	25	32	20	24	22	26	20	24	24	28	30	35	14	18	251	308
Teaching/research prof.	243	293	188	213	115	135	140	164	125	141	90	101	113	125	189	221	54	59	1,258	1,452
Public service prof.	225	268	125	140	71	79	58	64	56	61	47	53	57	63	74	77	22	23	736	828
Science associate prof.	91	99	92	99	58	63	49	53	51	56	39	44	51	59	74	82	25	28	530	581
Health associate prof.	187	222	134	138	82	83	86	86	92	101	68	71	78	76	124	127	46	49	898	953
Protective service occs.	68	67	60	64	34	36	23	21	31	32	22	23	34	35	45	43	18	18	336	338
Culture/media/sport occs.	195	247	106	124	65	78	53	65	46	53	31	36	39	42	58	63	14	15	608	724
Bus./public serv. assoc prof.	335	381	250	270	147	158	127	135	128	137	94	100	109	113	158	162	42	42	1,389	1,500
Admin & clerical occupations	407	329	388	371	254	249	225	213	253	267	173	169	236	248	340	352	104	104	2,380	2,302
Secretarial & related occs.	146	96	146	114	91	74	69	54	73	61	52	41	67	56	93	76	26	21	763	593
Skilled agricultural trades	22	25	53	65	34	38	43	50	39	41	29	32	33	38	35	39	14	13	302	342
Skilled metal/elec. trades	137	108	156	124	110	87	102	79	133	101	87	66	102	77	138	105	49	37	1,014	784
Skilled construct. trades	146	168	164	197	120	137	119	145	113	129	78	85	110	124	123	144	47	56	1,022	1,185
Other skilled trades	84	71	80	72	57	51	55	49	51	44	41	34	54	48	76	67	23	19	521	457
Caring personal service occs.	191	211	237	287	152	184	168	202	172	212	140	169	154	182	215	254	67	72	1,496	1,772
Leisure/other pers. serv. occs.	80	78	84	95	52	56	46	49	45	48	36	38	46	49	63	66	21	22	474	502
Sales occupations	236	265	277	315	185	202	193	219	164	173	143	162	187	202	243	259	91	102	1,720	1,898
Customer service occupations	63	69	64	78	41	51	37	46	40	52	29	36	38	49	54	70	16	21	382	474
Process plant & mach. ops.	64	36	115	86	102	79	97	75	148	116	113	92	133	110	145	109	59	51	975	756
Transport drivers and ops.	147	165	142	170	101	116	87	100	108	123	82	92	111	125	149	170	45	51	971	1,112
Elementary: trades/plant/mach.	86	52	117	80	91	60	85	60	93	62	76	53	98	69	108	78	37	28	790	541
Elementary: clerical/service	341	311	317	306	207	194	194	178	175	150	139	116	181	153	261	223	96	86	1,909	1,717
All occupations	4,555	4,785	4,275	4,514	2,767	2,885	2,548	2,646	2,614	2,689	2,000	2,056	2,477	2,540	3,385	3,459	1,102	1,120	25,723	26,694

Source: *Working Futures 2004–2014*, (Wilson et al., 2006).

**Table A.17: Industry shares of projected employment by Standard Occupational Classification sub-major group and region, 2006–2014**

	%																			
	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014	2006	2014
Corporate managers	14.7	16.6	14.2	15.8	13.1	14.7	11.4	12.6	11.1	12.4	11.7	13.2	10.8	12.1	10.7	11.6	9.2	10.0	12.4	13.8
Managers and proprietors	4.0	3.7	3.9	3.5	3.8	3.5	3.9	3.4	3.0	2.6	3.6	3.3	3.5	3.2	3.4	3.0	3.5	3.4	3.7	3.3
Science/Tech. professionals	3.3	3.6	4.0	4.2	3.8	4.1	3.1	3.4	3.2	3.7	3.3	3.8	2.8	3.2	3.3	3.8	2.9	3.2	3.4	3.7
Health professionals	1.3	1.6	0.8	1.0	0.9	1.1	0.8	0.9	0.8	1.0	1.0	1.2	1.0	1.1	0.9	1.0	1.3	1.6	1.0	1.2
Teaching/research prof.	5.3	6.1	4.4	4.7	4.2	4.7	5.5	6.2	4.8	5.2	4.5	4.9	4.6	4.9	5.6	6.4	4.9	5.2	4.9	5.4
Public service prof.	4.9	5.6	2.9	3.1	2.6	2.7	2.3	2.4	2.1	2.3	2.4	2.6	2.3	2.5	2.2	2.2	2.0	2.1	2.9	3.1
Science associate prof.	2.0	2.1	2.2	2.2	2.1	2.2	1.9	2.0	1.9	2.1	2.0	2.1	2.0	2.3	2.2	2.4	2.2	2.5	2.1	2.2
Health associate prof.	4.1	4.7	3.1	3.0	2.9	2.9	3.4	3.3	3.5	3.7	3.4	3.4	3.1	3.0	3.7	3.7	4.2	4.4	3.5	3.6
Protective service occs.	1.5	1.4	1.4	1.4	1.2	1.2	0.9	0.8	1.2	1.2	1.1	1.1	1.4	1.4	1.3	1.2	1.7	1.6	1.3	1.3
Culture/media/sport occs.	4.3	5.2	2.5	2.7	2.3	2.7	2.1	2.5	1.8	2.0	1.6	1.8	1.6	1.7	1.7	1.8	1.3	1.3	2.4	2.7
Bus./public serv. assoc prof.	7.3	8.0	5.8	6.0	5.3	5.5	5.0	5.1	4.9	5.1	4.7	4.9	4.4	4.5	4.7	4.7	3.9	3.7	5.4	5.6
Admin & clerical occupations	8.9	6.9	9.1	8.2	9.2	8.6	8.8	8.0	9.7	9.9	8.6	8.2	9.5	9.8	10.1	10.2	9.4	9.3	9.3	8.6
Secretarial & related occs.	3.2	2.0	3.4	2.5	3.3	2.6	2.7	2.0	2.8	2.3	2.6	2.0	2.7	2.2	2.7	2.2	2.3	1.9	3.0	2.2
Skilled agricultural trades	0.5	0.5	1.2	1.4	1.2	1.3	1.7	1.9	1.5	1.5	1.4	1.6	1.3	1.5	1.0	1.1	1.2	1.2	1.2	1.3
Skilled metal/elec. trades	3.0	2.3	3.7	2.8	4.0	3.0	4.0	3.0	5.1	3.7	4.3	3.2	4.1	3.0	4.1	3.0	4.4	3.3	3.9	2.9
Skilled construct. trades	3.2	3.5	3.8	4.4	4.3	4.8	4.7	5.5	4.3	4.8	3.9	4.1	4.5	4.9	3.6	4.2	4.2	5.0	4.0	4.4
Other skilled trades	1.9	1.5	1.9	1.6	2.1	1.8	2.1	1.9	1.9	1.6	2.0	1.7	2.2	1.9	2.2	1.9	2.1	1.7	2.0	1.7
Caring personal service occs.	4.2	4.4	5.5	6.4	5.5	6.4	6.6	7.6	6.6	7.9	7.0	8.2	6.2	7.2	6.4	7.3	6.1	6.4	5.8	6.6
Leisure/other pers. serv. occs.	1.8	1.6	2.0	2.1	1.9	1.9	1.8	1.9	1.7	1.8	1.8	1.9	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9
Sales occupations	5.2	5.5	6.5	7.0	6.7	7.0	7.6	8.3	6.3	6.4	7.2	7.9	7.6	8.0	7.2	7.5	8.3	9.1	6.7	7.1
Customer service occupations	1.4	1.5	1.5	1.7	1.5	1.8	1.5	1.7	1.5	1.9	1.4	1.7	1.5	1.9	1.6	2.0	1.5	1.9	1.5	1.8
Process plant & mach. ops.	1.4	0.8	2.7	1.9	3.7	2.7	3.8	2.8	5.7	4.3	5.6	4.5	5.4	4.3	4.3	3.1	5.4	4.6	3.8	2.8
Transport drivers and ops.	3.2	3.5	3.3	3.8	3.6	4.0	3.4	3.8	4.1	4.6	4.1	4.5	4.5	4.9	4.4	4.9	4.1	4.5	3.8	4.2
Elementary: trades/plant/mach.	1.9	1.1	2.7	1.8	3.3	2.1	3.3	2.3	3.6	2.3	3.8	2.6	3.9	2.7	3.2	2.2	3.4	2.5	3.1	2.0
Elementary: clerical/service	7.5	6.5	7.4	6.8	7.5	6.7	7.6	6.7	6.7	5.6	6.9	5.7	7.3	6.0	7.7	6.4	8.7	7.7	7.4	6.4
All occupations	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: *Working Futures 2004–2014*, (Wilson et al., 2006).

**Table A.18: Changes in projected employment by Standard Occupational Classification sub-major group and region, 2006–2014**

	London		South East		East of England		South West		West Midlands		East Midlands		Yorkshire and the Humber		North West		North East		England	
	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%	000s	%
Corporate managers	125	18.6	106	17.4	60	16.4	43	14.8	44	15.3	37	15.8	38	14.1	40	11.1	11	10.5	503	15.8
Managers and proprietors	-5	-2.7	-7	-4.0	-4	-4.2	-8	-7.9	-9	-11.3	-4	-6.1	-5	-6.3	-10	-8.9	-1	-3.3	-54	-5.7
Science/Tech. professionals	24	16.0	21	12.1	14	13.6	10	12.1	15	17.1	13	19.1	12	18.1	17	14.8	4	12.9	129	14.8
Health professionals	18	29.5	7	19.9	7	28.3	4	18.9	4	19.3	4	21.1	5	19.6	5	15.1	4	29.2	57	22.9
Teaching/research prof.	50	20.4	25	13.3	19	16.7	24	17.3	17	13.3	11	12.1	12	10.3	32	17.1	4	7.5	194	15.4
Public service prof.	43	19.3	16	12.5	8	10.6	5	8.8	5	8.8	5	11.5	6	10.2	4	5.0	1	3.8	92	12.5
Science associate prof.	7	7.9	6	7.0	5	8.2	4	7.8	5	10.8	5	11.9	8	15.5	8	11.0	3	12.3	51	9.7
Health associate prof.	35	18.8	3	2.4	1	1.8	0	0.0	8	8.9	3	4.3	-2	-2.2	3	2.7	3	6.1	56	6.2
Protective service occs.	-1	-2.1	4	6.1	1	4.2	-1	-6.4	1	3.5	1	4.7	1	3.5	-2	-5.3	0	-1.8	3	0.8
Culture/media/sport occs.	52	26.5	17	16.3	14	21.3	12	21.8	7	15.4	5	16.3	3	8.0	6	9.6	0	1.8	116	19.0
Bus./public serv. assoc prof.	46	13.9	21	8.2	11	7.5	9	6.9	9	7.2	6	6.5	4	3.9	5	2.9	-1	-1.4	110	7.9
Admin & clerical occupations	-78	-19.1	-17	-4.4	-5	-2.0	-12	-5.4	14	5.3	-4	-2.2	12	5.2	12	3.6	0	-0.1	-78	-3.3
Secretarial & related occs.	-50	-34.5	-32	-21.9	-17	-18.8	-16	-22.4	-13	-17.4	-11	-20.3	-11	-15.8	-17	-18.3	-5	-17.9	-171	-22.3
Skilled agricultural trades	4	17.7	12	22.3	4	12.6	7	15.9	2	4.8	4	13.1	5	13.9	4	10.0	0	-2.2	40	13.3
Skilled metal/elec. trades	-29	-21.2	-32	-20.4	-23	-21.2	-23	-22.4	-33	-24.4	-21	-24.4	-25	-24.8	-33	-23.7	-11	-22.9	-230	-22.7
Skilled construct. trades	22	14.9	33	20.0	17	14.4	25	21.3	16	14.1	7	8.8	13	12.1	20	16.5	9	19.4	163	15.9
Other skilled trades	-13	-16.0	-8	-9.4	-6	-10.3	-5	-9.8	-7	-13.5	-6	-15.6	-6	-11.7	-9	-11.9	-3	-14.5	-64	-12.3
Caring personal service occs.	21	10.8	51	21.4	32	20.7	34	20.0	40	23.0	28	20.3	28	18.2	38	17.9	5	7.4	276	18.4
Leisure/other pers. serv. occs.	-2	-2.6	11	12.9	4	8.6	3	6.8	3	6.4	2	6.3	3	7.2	3	4.8	1	2.7	28	6.0
Sales occupations	29	12.1	37	13.5	17	9.2	25	13.2	9	5.2	19	13.4	15	8.1	15	6.4	11	11.9	178	10.3
Customer service occupations	7	10.4	14	22.7	10	24.2	9	23.1	12	30.2	7	23.3	12	31.2	16	29.6	5	29.8	91	23.8
Process plant & mach. ops.	-28	-43.8	-29	-24.9	-23	-22.2	-22	-22.7	-31	-21.3	-20	-17.9	-22	-16.8	-36	-25.0	-8	-13.0	-219	-22.5
Transport drivers and ops.	19	12.7	27	19.3	16	15.5	12	14.2	15	13.5	11	12.9	15	13.2	21	14.3	6	12.6	141	14.5
Elementary: trades/plant/mach.	-33	-39.0	-37	-31.7	-31	-34.3	-25	-29.8	-32	-33.9	-23	-30.7	-29	-29.4	-30	-27.9	-9	-23.7	-250	-31.6
Elementary: clerical/service	-30	-8.8	-11	-3.4	-12	-6.0	-16	-8.1	-25	-14.4	-22	-16.2	-28	-15.6	-38	-14.7	-9	-9.9	-192	-10.1
All occupations	229	5.0	239	5.6	118	4.3	98	3.8	76	2.9	56	2.8	63	2.5	74	2.2	18	1.7	971	3.8

Source: *Working Futures 2004–2014*, (Wilson et al., 2006).

Note: Shaded areas indicate projected employment decline.

**Table A.19: Projected changes in occupational structure by region, 2006–2014**

Source: *Working Futures 2004–2014*, (Wilson et al., 2006).

Government Office Regions

	London	South East	East of England	South West	West Midlands	East Midlands	Yorkshire and the Humber	North West	North East	England
11 Corporate Managers										
12 Managers & Proprietors										
21 Science/Tech Professionals										
22 Health Professionals	+		+			+			+	+
23 Teaching/Research Prof.	+									
24 Business/Public service Prof.										
31 Science/Tech Associate Prof.										
32 Health Associate Prof.										
33 Protective Service Occs										
34 Culture/Media/Sport Occs	+		+	+						
35 Bus/Public Serv. Assoc Prof.										
41 Administrative Occupations										
42 Secretarial & Related Occs	-	-		-		-				-
51 Skilled Agricultural Trades		+								
52 Skilled Metal/Elec Trades	-	-	-	-	-	-	-	-	-	-
53 Skilled Construct. Trades				+						
54 Other Skilled Trades										
61 Caring Personal Service Occs		+	+	+	+	+				
62 Leisure/Oth Pers Serv Occs										
71 Sales Occupations										
72 Customer Service Occupations		+	+	+	+	+	+	+	+	+
81 Process, Plant & Mach Ops	-	-	-	-	-			-		-
82 Transport Drivers and Ops										
91 Elementary: Trades/Plant/Stor	-	-	-	-	-	-	-	-	-	-
92 Elementary: Admin/Service										

	level of employment in 2006 and/or 2014 is 100000 or greater.
+	2006-2014 growth is forecast to be 20% or greater.
-	2006-2014 growth is forecast to be -20% or less.
	2006-2014 growth is forecast to be 10% or greater. Row and column titles only.
	2006-2014 growth is forecast to be -10% or less. Row and column titles only.

## Replacement demands by region

- 2.306 It is important to consider replacement demands. Combining replacement demands with the projected expansion demand, an estimate of the overall requirement for each occupation within each region can be obtained. *The level of replacement demand is substantial.*
- 2.307 In theory, replacement demands will vary across regions depending upon a number of factors including, the gender and age structures of the workforce and rates of flows, such as geographical and other mobility flows. Measuring these is far from straightforward. While basing estimates of age structures and wage flows is adequate to produce reasonably robust estimates at national level, the sample size is too small to generate meaningful estimates at sector or regional level. For this reason, the estimates presented here are based on the same assumptions about age structures and flow rates as at national (UK) level. Regardless of these limitations, such benchmark estimates are useful in emphasising that even where quite sharp employment losses are projected, replacement demands are likely to be more than sufficient to outweigh these trends, even at the regional level.
- 2.308 Results for each of the 25 occupational sub-major groups are set out in *Table A.20*. Replacement demands outweigh the net projected decline in all occupations where job losses are expected. Between 2006 and 2014 there is expected to be an overall requirement of some 8.4 million new job openings. Retirements from the workforce are the main component of replacement demands. *Between 2006 and 2014 there is expected to be an overall requirement of some 8.4 million new job openings, with retirement being the main component of replacement demands.*

**Table A.20: Replacement demand by occupation and region, 2006–2014.**

thousands

a) Expansion demand	SOC Major Group									All
	1	2	3	4	5	6	7	8	9	
London	120	135	139	-128	-17	18	35	-10	-64	229
South East	99	68	51	-49	5	61	52	-1	-48	239
East of England	55	48	32	-22	-8	36	27	-7	-44	118
South West	36	43	23	-28	4	37	34	-10	-41	98
West Midlands	36	40	31	1	-22	42	21	-17	-57	76
East Midlands	33	33	20	-14	-17	31	26	-10	-46	56
Yorks & the Humber	32	35	15	2	-14	31	27	-8	-57	63
North West	30	57	19	-5	-18	42	31	-15	-68	74
North East	9	13	5	-5	-6	6	16	-2	-18	18
England	449	472	336	-249	-91	304	269	-78	-442	971

b) Replacement demand	SOC Major Group									All
	1	2	3	4	5	6	7	8	9	
London	242	198	234	177	99	87	80	59	123	1,299
South East	219	148	170	175	118	104	97	71	127	1,230
East of England	133	90	102	113	83	67	65	56	87	797
South West	111	88	91	96	83	70	67	50	82	738
West Midlands	105	83	93	106	86	71	59	69	79	752
East Midlands	87	65	68	73	61	58	51	53	63	577
Yorks & the Humber	101	77	82	97	77	65	65	66	81	711
North West	135	119	122	139	95	91	86	80	108	975
North East	40	36	39	42	34	29	32	28	39	318
England	1,174	905	1,001	1,019	736	642	601	532	788	7,397

c) Overall requirement	SOC Major Group									All
	1	2	3	4	5	6	7	8	9	
London	362	333	373	49	82	105	115	50	59	1,528
South East	319	216	221	126	123	166	149	70	79	1,469
East of England	188	139	135	91	76	103	92	49	44	915
South West	147	131	114	68	87	107	101	41	41	836
West Midlands	140	124	124	107	65	114	80	52	22	828
East Midlands	119	98	88	59	44	88	76	43	17	633
Yorks & the Humber	133	112	96	99	63	96	92	59	24	774
North West	165	176	141	134	78	133	117	66	40	1,049
North East	50	49	44	37	28	34	47	26	21	336
England	1,623	1,377	1,337	770	646	946	870	454	346	8,368

**Source:** *Working Futures 2004–2014*, (Wilson *et al.*, 2006).**Notes:**

a) These estimates do not allow for any losses due to occupational or geographical mobility.

b) Shaded areas show projected employment declines.

c) Occupational groups:

- |                                 |                                   |                                    |
|---------------------------------|-----------------------------------|------------------------------------|
| 1 Managers and senior officials | 4 Admin, clerical and secretarial | 7 Sales and customer service       |
| 2 Professional                  | 5 Skilled trades                  | 8 Machine and transport operatives |
| 3 Associate prof. and technical | 6 Personal service                | 9 Elementary                       |

## Annex B: Sector Skills Councils by Standard Industrial Classification

### Sector Skills Councils websites and SIC-based definitions

SSC	Website	SIC2003
Lantra	<a href="http://www.lantra.co.uk">www.lantra.co.uk</a>	01, 02, 05.02, 85.2, 92.53
Cogent	<a href="http://www.cogent-ssc.com">www.cogent-ssc.com</a>	11, 23, 24.11–24.2, 24.41–24.63, 24.65, 24.66, 25.13–25.24, 50.5
Proskills	<a href="http://www.proskills.co.uk">www.proskills.co.uk</a>	10, 12–14, 21, 22.2, 24.3, 26.1, 26.26, 26.4–26.8, 40.3*
Improve Ltd	<a href="http://www.improveltd.co.uk">www.improveltd.co.uk</a>	15.11–15.91, 15.93–15.98, 51.38
Skillfast-UK	<a href="http://www.skillfast-uk.org">www.skillfast-uk.org</a>	17–19, 24.7, 51.16, 51.24, 51.41, 51.42, 52.71, 93.01
SEMTA	<a href="http://www.semta.org.uk">www.semta.org.uk</a>	25.11, 25.12, 27.4–28.3, 28.5–28.7, 29–35
Energy & Utility Skills	<a href="http://www.euskills.co.uk">www.euskills.co.uk</a>	37, 40.1, 40.2, 41, 51.54, 51.55, 60.3, 90
ConstructionSkills	<a href="http://www.constructionskills.net">www.constructionskills.net</a>	45.1, 45.2, 45.32, 45.34, 45.4, 45.5, 71.32, 74.2
SummitSkills	<a href="http://www.summitskills.org.uk">www.summitskills.org.uk</a>	45.31, 45.33, 52.72
Automotive Skills	<a href="http://www.automotiveskills.org.uk">www.automotiveskills.org.uk</a>	50.1–50.4, 71.1
Skillsmart Retail	<a href="http://www.skillsmartretail.com">www.skillsmartretail.com</a>	52.1–52.6
People 1st	<a href="http://www.people1st.co.uk">www.people1st.co.uk</a>	55.1, 55.21, 55.23, 55.3–55.5, 63.3, 92.33, 92.71
GoSkills	<a href="http://www.goskills.org">www.goskills.org</a>	60.1, 60.21–60.23, 61, 62.1, 62.2, 63.2, 80.41
Skills for Logistics	<a href="http://www.skillsforlogistics.org">www.skillsforlogistics.org</a>	60.24, 63.1, 63.4, 64.1
Financial Services Skills Council	<a href="http://www.fssc.org.uk">www.fssc.org.uk</a>	65–67
Asset Skills	<a href="http://www.assetskills.org">www.assetskills.org</a>	70, 74.7
e-skills UK	<a href="http://www.e-skills.com">www.e-skills.com</a>	22.33, 64.2, 72, 74.86
Government Skills	<a href="http://www.government-skills.gov.uk">www.government-skills.gov.uk</a>	75.1, 75.21, 75.22, 75.25, 75.3
Skills for Justice	<a href="http://www.skillsforjustice.com">www.skillsforjustice.com</a>	75.23, 75.24
Lifelong Learning UK	<a href="http://www.lifelonglearning.co.uk">www.lifelonglearning.co.uk</a>	80.22, 80.3, 80.42, 92.51
Skills for Health	<a href="http://www.skillsforhealth.org.uk">www.skillsforhealth.org.uk</a>	85.1
Skills for Care & Development	<a href="http://www.skillsforcareanddevelopment.org.uk">www.skillsforcareanddevelopment.org.uk</a>	85.3
Skillset	<a href="http://www.skillset.org">www.skillset.org</a>	22.32, 24.64, 74.81, 92.1, 92.2
Creative & Cultural Skills	<a href="http://www.ccskills.org.uk">www.ccskills.org.uk</a>	22.14, 22.31, 36.3, 74.4, 92.31, 92.32, 92.34, 92.4, 92.52
SkillsActive	<a href="http://www.skillsactive.com">www.skillsactive.com</a>	55.22, 92.6, 93.04

\* Note: SIC 40.3 is no longer covered by Proskills however, this category was removed after the *Working Futures* work was completed and so 40.3 is still included above.



# Chapter 3: The Supply of Skills

## Overview and Summary

- 3.1 This chapter reviews trends in labour and skills supply. As with last year's review, there is much to report upon with growing concern about the ageing workforce, the impact of substantial inflows of migrant workers from EU accession states, and the publication of a number of important policy documents, including the *Leitch Review*, the *Foster and Freud Reports*, and the *White Paper on Further Education*.
- 3.2 Skills supply is dependent upon a number of inter-related factors. It is useful to distinguish between the overall **supply of labour** (which depends upon demographic factors and labour market participation rates) and **skills supply** (which is driven by individuals' and employers' investment in skills and qualifications). *Labour supply needs to be distinguished from the supply of skills.*
- 3.3 A pressing issue is **labour supply**. The Office of National Statistics (ONS) projects population growth of 0.42 per cent a year compared to employment growth of around 0.5 per cent. But the population is also an ageing one. Hence the Government's emphasis upon stimulating labour supply especially from those who currently face barriers to labour force participation – as outlined in the Freud Report. *The population is increasing but it is also ageing.*
- 3.4 The evidence shows improvements in **skills supply** over time. The percentage of the workforce that has achieved qualifications at various levels based on the National Qualifications Framework (NQF) has improved. The data also reveal that the success rate of those participating in accredited training is also increasing. But there are still concerns about the pathways adopted by young people, especially their relative propensity not to stay on in education when their compulsory education has ended. The recent policy response has been to seek to improve the operation of the further education sector as outlined in the White Paper on FE, *Raising Skills, Improving Life Chances*. *As measured by qualifications, the supply of skills is improving.*
- 3.5 The Leitch Review set the skills debate in the context of globalisation. **International comparisons** of the UK education and vocational education and training system continue to reveal a mixed picture. The expected duration of education

is the highest all countries within the Organisation for Economic Cooperation and Development (OECD). The proportion of Gross Domestic Product (GDP) spent on education has risen rapidly over recent years in comparison with the OECD average. Nonetheless, participation in immediate post-compulsory education remains relatively low and there is a significant proportion of the population which has not completed upper secondary education. Moreover, the duration of workplace-provided training tends to be of a shorter duration than in many other countries. One conclusion that can be drawn from the OECD data is that whilst there have been significant improvements in educational attainment, especially so amongst the younger age groups, the rate of improvement is less than that which is taking place in some competitor countries. This is particularly true of rapidly growing economies such as China and India, which have much more ground to make up in terms of educational attainment rates.

*International comparisons indicate that while there have been significant improvements in UK skills supply these have not been as great as in many other countries.*

3.6 The recent past has seen many policy developments relating to the supply of skills. The Leitch Review – *Prosperity for All in the Global Economy: World Class Skills* – set out challenging new skills targets while the Foster Report – *Realising the Potential* - recommended radical reforms to the further education sector. The Government responded to Foster with the White Paper *Raising Skills, Improving Life Chances* which set out a new mission for the FE system. Labour supply has also been under scrutiny. The 2006 Pre-Budget Statement set out how the Welfare to Work initiative encourages participation in the labour market, and the *Freud Report - Reducing dependency, increasing opportunity: options for the future of welfare to work* – indicated how labour supply might be further increased. The Budget 2007 went on to emphasise the importance not only of getting low-skilled people into work but of continuing to support them once they were in employment.

*The recent past has seen a large number of policy initiatives relating to skills.*

3.7 This chapter reaches a number of conclusions. First, there have been substantial advances not only in levels of educational attainment, but in providing individuals with a number of pathways through the education system and, particularly, the vocational education and training system. With such choice comes the need for information, hence the increasing importance of providing guidance to

*There have been advances in educational attainment in the UK but....*

*....weaknesses*

individual learners. While the system for skill supply in England has many strengths, such as continued increases in attainment, improvements in success rates and the creation of opportunities for people to re-enter the FE system later in life if necessary, a number of weaknesses can also be identified, some of which have been longstanding. These weaknesses include the relatively poor progression rates into continuing education amongst 16-17 year olds, continuing concern about the operation of the FE sector and whether this is providing a sufficient service and the relatively high proportion of workplace-based training that is of short duration.

*remain, including concern over progression in post- 16 education, the FE sector and the limited nature of much workplace-based training.*

## Introduction

3.8 Skills supply is dependent upon a number of inter-related factors. It is useful to distinguish labour and skill supply:

*It is useful to distinguish between the supply of labour and the supply of skills.*

**labour supply** is dependent upon:

- demographic change;
- international migration;
- operation of the social security system and the extent to which it encourages labour market participation;

**skills supply** is dependent upon:

- labour supply;
- outputs from the compulsory education system;
- the operation of the vocational education and training system and individuals' and employers' investment in skills.

All this needs to be seen in the context of evolving policy, changes in the UK economy, and economic and labour market developments in other competitor countries.

3.9 There have been many policy developments relating to the supply of skills recently. The Leitch Review – *Prosperity for All in the Global Economy: World Class Skills* has outlined challenging new skills targets, and the Foster Report – *Realising the Potential* - recommended reform to the further education (FE) sector. In response to Foster, the Government published the White Paper *Raising Skills, Improving Life Chances* which set out a new mission for the FE system. Labour supply has also

*Skills have been the subject of a number of recent policy initiatives.*

been under scrutiny. The 2006 Pre-Budget Statement set out how Welfare to Work programmes encourage participation in the labour market and the Freud Report; *Reducing dependency, increasing opportunity: options for the future of welfare to work*, indicated how labour supply might be further increased.

- 3.10 A pressing issue is **labour supply**. The Office of National Statistics (ONS) projects population growth of 0.42 per cent a year compared to employment growth of around 0.5 per cent. The population is also an ageing one. The Government has responded to this by seeking to stimulate labour supply and increase the labour market participation of people currently described as 'economically inactive'. Many such inactive people are claiming out of work welfare benefits, such as Income Support and Incapacity Benefit. The Freud Report set out some of the measures necessary to achieve an increase in labour supply.

*There will be increasing pressure on labour supply in the future as employment is expected to outstrip a slower growing, and ageing, population.*

## Labour Supply

- 3.11 This chapter looks at labour supply. It begins by looking at recent demographic change, before going onto provide a statistical overview and commentary on recent trends. A comparison with the activities of other countries in the EU and OECD, is also provided to reveal how the UK compares to others with which it is competing.

- 3.12 In broad terms, labour supply is dependent upon:

- demographic trends (including birth and mortality rates);
- the ageing of the population;
- new sources of labour supply;
- the operation of the social security system.

A discussion of social security policies is provided in paragraph 3.93 below. The following concentrates on demographic change and migration.

## Demographic change

- 3.13 The population of England is 50.4 million (mid 2005) compared to 60.2 million in the UK as a whole. Over the last 12 months the population in the country grew by 0.6 per cent, and it has increased by 7.7 per cent since 1971. Over recent years population growth has accelerated. ONS estimates the UK population will

*The population is projected to increase, but it is also ageing.*

increase further by 7.2 million over the period 2004 to 2031 (an annual average growth rate of 0.42 per cent). The growth is due to natural increase (more births than deaths) and because it is assumed there will be more immigrants than emigrants (that is, a net inward flow of migrants). The UK has an ageing population. The proportion of people aged over 65 is projected to increase from 16 per cent in 2004 to 23 per cent by 2031. In 2004, there were 3.33 people of working age for every person of state pensionable age and this ratio is projected to fall to 2.62 by 2031.

- 3.14 The labour force in England is now around 25 million, roughly half the total population (see Figure 3.1). Unemployment remains low by historical standards, measuring around one million using ILO definitions. With the economy still experiencing growth, and unemployment standing at a low level, there is an economic necessity to boost labour supply. For this reason Government has set itself a target of raising the employment rate (the proportion of the working age population in employment) which stood at 71.5 per cent in 2006 to 80 per cent by 2010 (DWP, 2005; 2006). A number of measures have been put in place to achieve this aspiration, with the majority focused on raising the participation rate amongst economically inactive groups in the population (such as people on 'inactive' benefits including lone parents on Income Support and Incapacity Benefit claimants). Future policy in regard to international migration will also have an impact on labour supply.

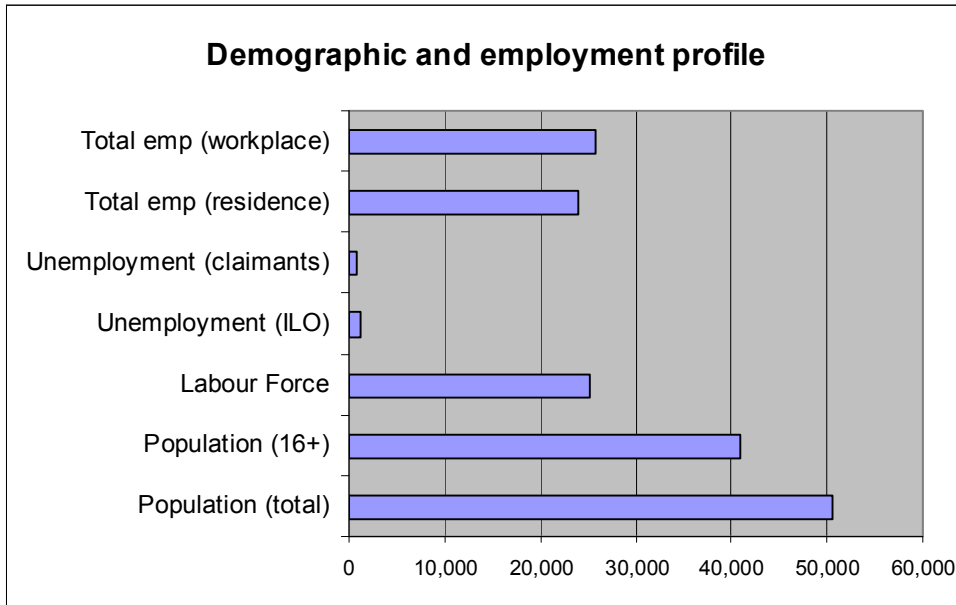
*A number of measures have been introduced to boost labour supply...*

*...by increasing the participation rate of economically inactive groups.*

- 3.15 *Figures 3.2 and 3.3* present estimates of overall labour supply based on an analysis of demographic change. They illustrate the way in which such change is impacting on the workforce (Green, Owen and Wilson, 2005). Both the ageing of the population and the looming pensions crisis, as a large proportion of the current workforce reaches retirement age, will have an impact on number of workers available. This may well operate in offsetting directions: the ageing population resulting in an increasing outflow due to retirement; the potential pensions crisis resulting in a tendency to retire later. *Figure 3.2* indicates a growing number of people in the population who are approaching retirement age (45 years or above) and their number is set to increase further by 2014. At the same time, there is comparatively little increase in the number of people on the threshold of working age. The implication of

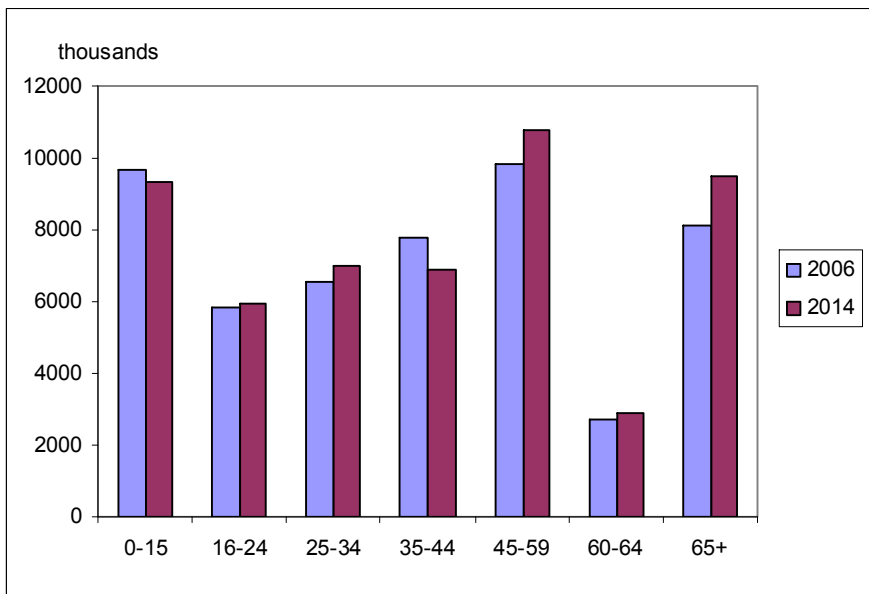
this is that an increasing proportion of people in employment will be over 45 years of age (*Figure 3.3*). This is likely to have a number of implications for the availability of skills (including obsolescence of skills and an increased need for re-skilling).

**Figure 3.1: England’s demographic and employment profile, 2006**



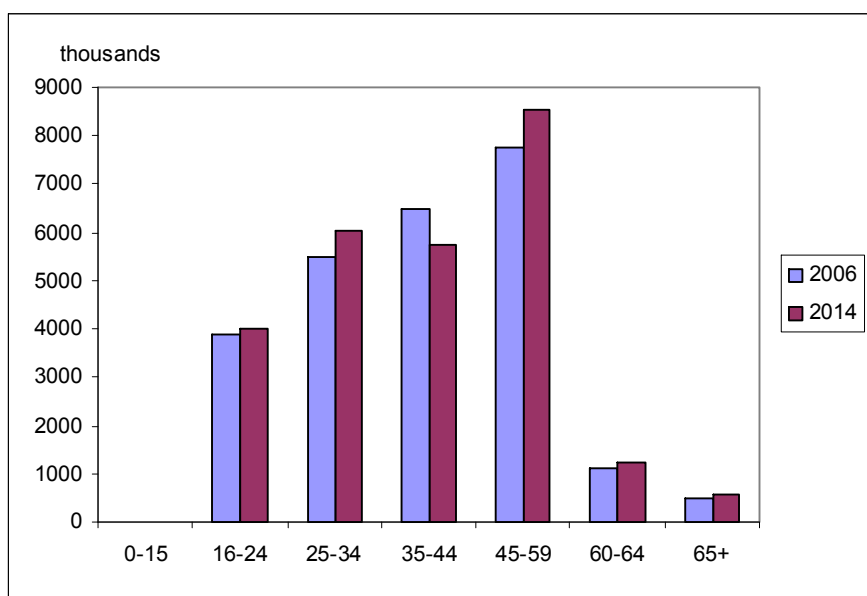
**Source:** Changing Patterns of Employment (Green, Owen and Wilson, 2005).

**Figure 3.2: An ageing population and workforce, England 2006–2014**



**Source:** Changing Patterns of Employment (Green, Owen and Wilson, 2005).

**Figure 3.3: An ageing labour force, England 2006–2014**



**Source:** Changing Patterns of Employment (Green, Owen and Wilson, 2005).

### Migration and labour supply

- 3.16 Migrant workers comprise an important source of labour, especially in parts of the country where there are labour shortages. In 2006, the working-age population increased by 272,000, largely due to immigration. Despite this large increase, it is important to recognise that migrants still only account for a small proportion of employment in most industries, including agriculture and construction. *Most of the recent increase in the working age population is the result of international migration.*

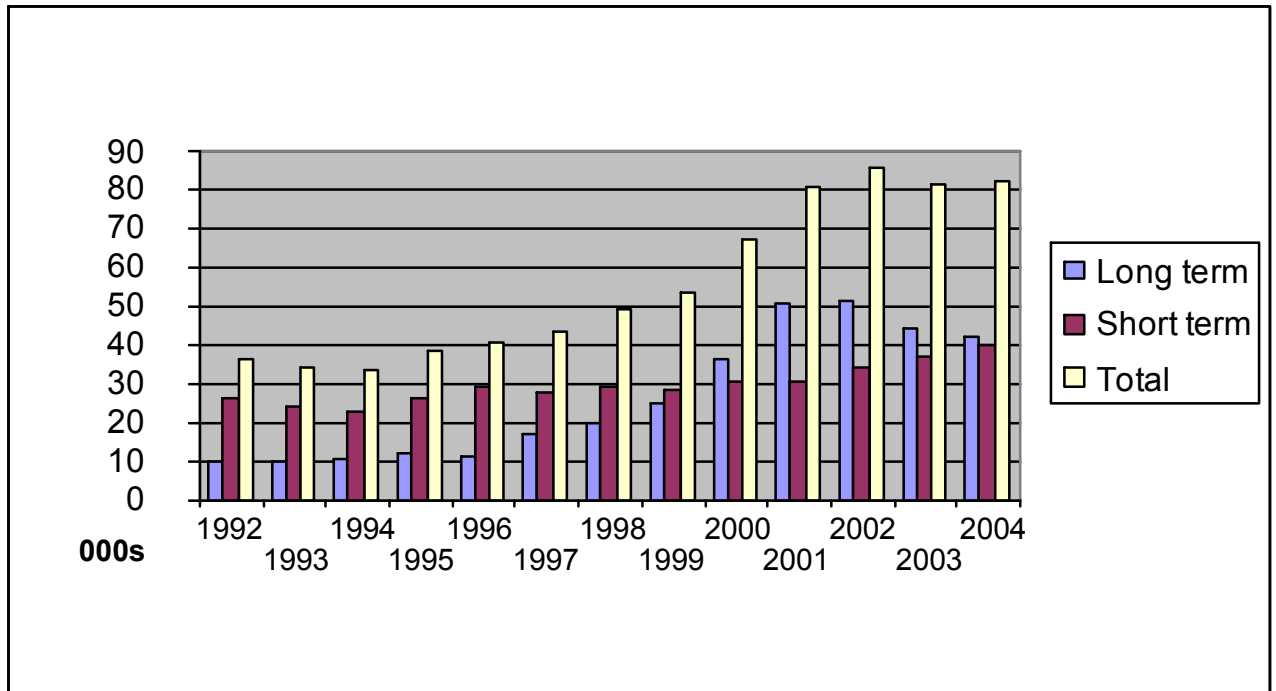
### Estimated numbers of migrant workers

- 3.17 The fact that there is no single definition of 'a migrant worker' in common use and that coverage of migrant workers varies between data sources means that there is uncertainty about the precise number of migrants entering the UK.<sup>1</sup> *There is no single definition of 'migrant worker'.*
- 3.18 According to the 2004 Labour Force Survey (LFS), 10 per cent of the British working-age population were born in another country (DWP, 2004). *Figure 3.4 shows the influx of foreign workers between 1992 and 2004. The UK has experienced an increasing net gain in population in nearly every year since 1982 (Centre for Research and Analysis of Migration, 2005). The Government Actuary* *About 10 per cent of working age population were born outside the UK.*

<sup>1</sup> Surveys and administrative data sources provide information on the size and nature of stocks and flows of migrants, but the coverage of each source is variable. A key shortcoming of most key data sources (except the International Passenger Survey) is a lack of information on emigration (that is, out-flows). Illegal immigration is not recorded.

Department (undated) projects net migration to account for around three-quarters of the increase in the UK population (4.1 million of the projected 7.2 million) from 2004 to 2031.

**Figure 3.4: Inflows of foreign workers to the UK, 1992-2004**



**Source:** Based on grants of work permits (excluding dependents)

**Notes:** Long term is 12 months or more; short term is under 12 months.

Data exclude EU nationals up to 1993, and EEA nationals since 1994. Figures include extensions and changes of employment.

3.19 An attempt to estimate overall foreign labour migration to the UK in 2005 by route of entry recorded inflows of just over 400,000 (Salt and Millar, 2006), compared with 183,000 in 1999, and 245,000 in 2002. The composition of in-migration is as follows:

*It is estimated that there was a net in-flow to the UK of just over 400,000 migrant workers in 2005.*

- nearly half of all migrants (195,000) entered under the Worker Registration Scheme (WRS) covering employees from the 'A8' [Accession 8] countries Poland, Lithuania, Slovakia, Latvia, the Czech Republic, Hungary, Estonia and Slovenia;
- just over a fifth of labour migrants (86,000) entered under the Work Permit route (for non-European Economic area citizens);
- European Union (EU) and European Free Trade Area (EFTA) citizens with free rights of entry to the UK were the next largest group,



accounting for 9 per cent (35,000) of migrants;

- the Working Holiday Makers Scheme, the Highly Skilled Migrant Programme (HSMP), and the Seasonal Agricultural Workers Scheme (SAWS) were the next largest routes, accounting for 15,000-20,000 migrants each.

As it is not known for how long migrants will stay in the UK, it is impossible to say whether they represent a permanent or temporary addition to the UK labour force.

- 3.20 It has been estimated that there were just over 1.5 million foreign nationals working in the UK in 2005, accounting for 5.4 per cent of total UK employment. According to the Audit Commission (2007) foreign nationals made up 6 per cent of the UK workforce in 2006, compared with 3.5 per cent in 1996. *1.5 million foreign national working in the UK.*
- 3.21 Analyses of information from the International Passenger Survey (IPS) revealed that between 2000 and 2004 there was a gross loss of 546,000 British people from the UK and a net gain of 324,000, resulting in a net loss of 220,000 British nationals. This was more than offset by a net in-flow of 486,000 non-British people (the difference between a gross inflow of over 890,000 and an outflow of 405,000). Further evidence from the IPS indicates that professional and managerial workers account for the majority of employed migrants, but they account for a decreasing proportion of immigrants (as more immigrants fill manual and clerical occupations) and an increasing proportion of emigrants. LFS data also reveals that the foreign labour inflow has been concentrated to a greater extent in the lower skilled end of the labour market than was formerly the case. *Migrants tend to fill lower skilled jobs.*

### Profile of migrant workers

- 3.22 There are clear differences in the occupational profiles of different national groups amongst the foreign labour force in the UK. Nationals of 'northern EU' countries (including France and Germany), South-East Asia, North America and Australasia are more likely to work in professional and managerial occupations. Non-EU workers, especially those from the Indian sub-continent and the Caribbean, are over-represented in routine occupations.
- 3.23 Migrants are not evenly distributed across the UK. Around two-thirds of foreign nationals living and working in the UK are located in London and the South East. London's primacy is, however, *Two thirds of migrants live in London and the South East.*

diminishing, with labour migration beginning to spread outwards to centres near London, such as Luton, Reading, and Slough, and around manufacturing towns such as Crewe, Northampton, and Corby. It is also a key feature of workforce change in some rural areas (such as south Lincolnshire and Herefordshire) with little former experience of migration labour.

### New EU members and migration programmes

- 3.24 The accession of ten new states to the European Union in 2004 led to an increase in the pace and scale of international migration. In 2005/06 around 662,000 National Insurance numbers (NINos) were issued to foreign nationals, almost double the number in 2002/03. Of the NINos issued to foreign nationals in 2005/06, just over 170,000 were to Poles, over 30,000 to Lithuanians, and over 26,000 to Slovaks. A8 nationals accounted for over 40 per cent of all NINos issued to foreign nationals, compared with only 3 per cent in 2002/03. After Poland, India remains the second largest origin country for NINo registrations with 46,000 in 2005/06, up from 25,000 (the largest number for any single country) in 2002/03. By 2005/06 China and Portugal had dropped out of the 'top 10' countries for NINo registrations by foreign nationals.
- The accession of new Member States to the EU has accelerated the pace and scale of international migration.*
- 3.25 Recent debate about migrant workers in the UK labour market has been dominated by consideration of the flows from new member states from the EU. Indeed, the scale of recent immigration is such that Poles have been identified as the largest ever single national group of entrants that the British Isles has ever experienced. From 2007 Romania and Bulgaria joined the European Union, but migrants from these so-called 'A2' (Accession 2) countries face greater restrictions on entry to the UK than A8 migrants.
- 3.26 The UK Worker Registration Scheme (WRS) is a compulsory scheme for citizens of the new EU member states (excluding Malta and Cyprus). These include the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia, and Slovenia. The WRS tracks the employment of the candidate over the first twelve months of employment in the UK. Under the UK WRS, applicants must not be married and cannot bring any dependants with them. In 2006 there were 232,000 initial applications from A8 nationals to the WRS (Home Office *et al.*, 2007). This was 20,000 more than in 2005. From its

introduction in May 2004 until December 2006, the cumulative total of initial applications has been 579,000. Poles have been the dominant nationality.

- 3.27 Applicants are overwhelmingly young: between May 2004 and December 2006, over 40 per cent of applicants were aged 18-24 years and nearly 40 per cent were aged 25-34 years. The five main industries<sup>2</sup> in which A8 migrants were employed were:

*Migrant workers tend to be young and work in...*

- Administration, Business and Management Services including employment agencies (37 per cent of the total);
- Hospitality & Catering (20 per cent);
- Agriculture (11 per cent);
- Manufacturing (7 per cent);
- Food, fish & meat processing (5 per cent).

*...just five industrial sectors and...*

The largest occupations recorded over the same period were:

- Other occupations (31 per cent of the total);
- Process operative – other factory worker (26 per cent);
- Warehouse operatives (8 per cent);
- Kitchen & catering assistants (8 per cent);
- Cleaner, domestic staff (5 per cent); and
- Farm worker/farm hand (4 per cent).

*... are concentrated in low skilled occupations.*

Hence, a key feature of the employment of A8 nationals is their concentration in less skilled occupations. Over three-quarters of A8 nationals were earning between £4.50 and £5.99 per hour.

- 3.28 While the WRS migration 'route' is important for less-skilled occupations, the Work Permit 'route' is of particular importance in 'feeding' higher level occupations. A comparison of WRS and Work Permit applications in 2005 by occupation reveals that 60 per cent of WRS applications were in operative and elementary occupations (SOC Major Groups 8 and 9), while almost 90 per cent of Work Permit approvals were for people taking up managerial, professional, and associate professional and technical jobs. In 2005 three occupational groups

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<sup>2</sup> N.B. The Standard Industrial Classification is not used for recording purposes.

accounted for over half of all work permit approvals:

- nurses and carers (17,100 or 20 per cent of the total);
- software professionals (16,800 or 20 per cent);
- managers and proprietors in other services (11,100 or 13 per cent).

3.29 The differences in occupational profile between migrants on Work Permits and WRS applicants highlight two main reasons for employing migrants:

- to perform jobs requiring specialist skills not available in the UK (*i.e.* to address skills shortages and deficiencies); or
- to fill vacancies for which there are not enough UK applicants (these may be unskilled and/or seasonal or temporary jobs which UK workers are unwilling to fill).

3.30 With in-migration continuing to increase, the scale and nature of migration flows and the impact of migrant workers on the UK labour market continues to be a key issue in public policy debate. The complexity of the legal regulations relating to migration has been recognised by Government. The Home Office has recently begun the launch of the single biggest change in migration policy of recent times, a points-based management strategy for economic migration, due to come into full operation from 2007.

*International migration is a complex but key policy issue for the future.*

### **Employers' attitudes to migrant labour**

3.31 Employers vary in their attitudes to employing migrants. A three-fold typology has been developed to illustrate these differences and associated implications for training (LSC, 2007):

*A three-fold typology of employers' attitudes to migrant workers.*

- '*reluctants*', have negative attitudes towards migrant workers, employing them as an option of last resort when other recruitment channels have been exhausted. Such employers are unlikely to go out of their way to invest in development of migrants' skills beyond minimum legislative and business imperatives;
- '*advocates*', have a positive attitude towards migrant workers. These employers are most likely to seek to develop migrants' skills;

- ‘pragmatists’, the largest category of employers, characterised by positively balanced views towards hiring migrant workers, viewing them dispassionately as a cost-effective commodity.

- 3.32 Employers may prefer migrants (especially eastern European) to British workers because of perceptions that they have a stronger work ethic – that is, they are hardworking, reliable, punctual, and flexible (Dench *et al.*, 2006). First and foremost it is an ‘attitude gap’ (especially on the part of younger UK workers who tend to be viewed as unmotivated and unwilling to take low skilled jobs) rather than a ‘skills gap’ that employers see migrants as filling. *Some employers see migrant workers as possessing a strong work ethic.*
- 3.33 One possible disadvantage of employing migrants is the existence of a language barrier. This is likely to be a particular issue in customer-facing roles or when technical language is used. English language skills are central to individual self-sufficiency, integration, and labour market advancement but, in some instances, employers may not perceive comprehensive language skills as important. They may see a rudimentary grasp of basic English as sufficient. Migrant workers may find it difficult to access English language training because of shift patterns and changes in work locations. A report by the Audit Commission suggests that access to English classes for labour migrants may become more difficult in the future: changes in funding arrangements, from mid 2007, mean that European migrant workers in their first year in the UK no longer receive a full fee reduction (Audit Office, 2007). *Employing migrant workers creates the need for improving language skills.*
- 3.34 Poor language skills may lead to a mismatch between the qualifications and skills migrants bring with them to the UK and the skills or qualifications they need to do their job (Sachdev and Harries, 2006). Many migrant workers represent ‘high quality workers’ in ‘low-waged work’ (Anderson *et al.*, 2006). Some migrants may be content to work in low-skill occupations for a short period but there is evidence that others would like to utilise their skills more fully and further improve them (Zaronaite and Tirzite, 2006; Schneider and Holman, 2005). *Poor language skills can lead to the under-utilisation of migrants’ skills.*

### Implications of migrant labour

- 3.35 A regional study of the impact of migrants in the East Midlands found that while there was no statistically significant evidence that migration dampens wage growth, there was some evidence of employment *International migration has increased competition for low*

displacement of UK-born workers in industries where migrants were concentrated, especially in lower skilled occupations (Green *et al.*, 2007). Moreover, at regional level there has been a statistically significant upward trend in unemployment amongst UK-born workers with no qualifications in recent years. Locally, there is a positive association between the rate of increase in claimant unemployment and overseas NI No registrations as a percentage of aggregate employment. It is those UK-born workers lacking qualifications and working in less skilled occupations who are most vulnerable and who are most likely to feel the negative impacts of migration.

*skilled jobs...*

*... and weakened the position of the unqualified and less skilled.*

3.36 A review of the economic impacts of migration by the Trade Union Congress (TUC, 2007) concluded that, overall, the economic impact of immigration in the UK is limited but positive. The evidence they reviewed clarified that there was no generalised, negative impact from immigration across the whole or large parts of the economy. Migration was found most likely to lead to higher levels of employment for native workers, while there might be adverse impacts on any individual's job. Immigration did not threaten the jobs of British-born workers on the whole, but there may have been transitional problems and there may have been greater negative impacts on the most disadvantaged workers. According to the TUC, the idea of a general negative impact of migration on wages is not supported by the existing evidence but there was anecdotal evidence of a negative effect. Migrant workers contributed more in taxes than they received in services and so the idea that they were a burden on taxpayers was also refuted by the TUC. Overall, the TUC concluded that host countries, home countries and immigrants all benefited from immigration. More open migration can offer significant benefits, but these benefits are not automatically realised.

*Overall, the impact of migration is limited but positive.*

3.37 There is considerable interest not only in current migration flows but also future prospects. The size and direction of migration flows will be determined by the interplay of economic, demographic and political trends and the legislative framework relating to migration in the UK and in other potential migrant destination countries and in origin countries. Hence, it is unclear whether current trends in migration will continue in the future. Economic 'push' factors from origin countries include low wages and living

standards and a relative lack of available opportunities to utilise skills in the home country (often as a consequence of high unemployment). Key economic 'pull' factors include higher wages and better job opportunities in destination countries. In addition, broader quality of life and life-chance factors are important, including a desire for a better quality of life for migrants themselves and their families, career development opportunities, and a desire for travel and adventure. Once a migration flow has been established, the momentum created can be an important driver of subsequent migration flows. It is important to bear in mind that in 2004 the UK was only one of three EU countries (the others were Ireland and Sweden) to allow A8 nationals more or less unrestricted access to the labour market. It is possible that migration patterns in the future may change as restrictions to work in other (geographically more proximate) EU countries are relaxed.

*The determinants of future migration flows are a complex mix of local and global economic, demographic and political factors.*

3.38 Analyses of inflows and outflows by broad geographical region of the world suggest that employed migrants who come to the UK from more developed countries were more likely to leave subsequently than those from less developed regions (including the Indian sub-continent).

3.39 Relatively little is known about migrants' intentions. This means that it is difficult to make informed decisions about planning skills and learning provision. Over time there has been a tendency towards short-term moves, with a declining proportion of Work Permits issued for periods of 12 months or more. Three quarters of WRS applicants in 2006 answered a question on their registration form about migrant intentions:

*The majority of migrant workers only intend to stay in the UK for a short time...*

- 55 per cent indicated that they intended to stay for three months or less;
- 25 per cent did not know how long their stay would be;
- 10 per cent indicated that they intended to stay for more than two years (Home Office *et al.*, 2007).

*...although intentions are liable to change.*

Of course, these intentions are liable to change, especially in the light of experience.

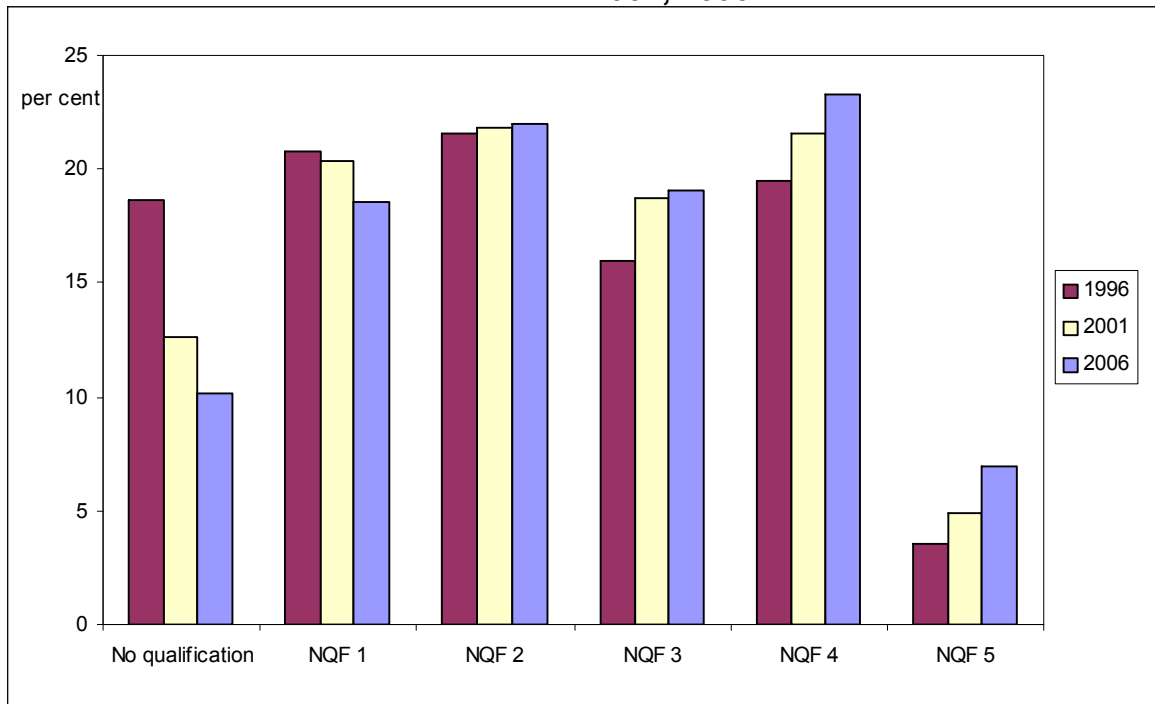
## Skills supply

### Qualifications held by the workforce

- 3.40 The highest level of educational attainment, measured by qualifications obtained, provides one means of measuring improvement in skills supply over time. *Figure 3.5*, derived from the Labour Force Survey (LFS), shows the percentage of the workforce which has achieved qualifications at various levels based on the National Qualification Framework (NQF). These data show the improvement in skills supply over a 10-year period, with substantial increases at NQF Levels 3, 4 and 5, a steep decline in the proportion (and number) of people with no qualifications and a more modest fall in the percentage of people qualified to NQF Level 1.
- The proportion of the workforce with qualifications has steadily increased...*
- ... while which is unqualified has fallen.*
- 3.41 These changes could reflect a cohort effect (with younger people being more likely to have a qualification of some type compared with their older counterparts) and/or a general improvement across all age groups. Research suggests that the main improvement in educational attainment in the UK is due to each successive cohort being better qualified than the next, rather than there being an improvement in attainment within each cohort as they get older. This compares poorly to France where there is improvement within cohorts over time (Steedman and McIntosh, 2004). This finding is consistent with those of the OECD that indicated that post-compulsory participation in education and training in the UK compared unfavourably with many other OECD countries (OECD, 2006; Steedman and McIntosh, 2004).
- Post-compulsory participation in education and training in the UK compares unfavourably with many other countries.*



**Figure 3.5: Highest qualification by economically active population 1996, 2001, 2006**



**Source:** Labour Force Surveys.

**Notes:** Highest NQF qualification held for all those in employment. The figures are sensitive to the treatment of certain responses to LFS questions. 'Don't knows' are included here with those reporting no qualifications. Some low-level qualifications that do not attain NQF 1 status are also included in the 'no qualification' category. In total these differences boost the 'no qualifications' category by almost 1 percentage point.

3.42 *Table 3.1* shows the type of qualification held by the economically active population, whether vocational or academic, by NQF level. Around 70 per cent of qualifications obtained are of an academic type. In the past there have been concerns that vocational education and training in England does not have the same esteem as that found in other countries (such as Germany). This may explain the reluctance of young people to pursue the vocational route. Recent years have seen considerable efforts to increase the take-up of the vocational routes, especially in the case of Apprenticeships (Apprenticeships Task Force, 2005). The Leitch Review drew attention to the need to stimulate the vocational route – especially the number of apprentices – and the introduction of Diplomas in 2008 may also help to improve that take-up.

*The qualifications held are predominantly 'academic' ..*

*... despite policy to improve the status and take-up of vocational education.*

**Table 3.1: Educational attainment of economically active population, England 2006**

Qualification level	Type	000s	%
No Qualification		2,542	10.2
NQF 1 , GCSE (below grade C)	academic	3,725	14.9
NQF 1 , GNVQ foundation	vocational	15	0.1
NQF 1 , BTEC 1st certificate etc	vocational	902	3.6
NQF 1 total		4,642	18.6
NQF 2 , GCSE(grades A-C)	academic	7,815	31.3
NQF 2 , GNVQ intermediate	vocational	126	0.5
NQF 2 , BTEC 1st diploma etc	vocational	2,321	9.3
NQF 2 total		10,262	41.1
NQF 3 , A level & equivalent	academic	1,676	6.7
NQF 3 , GNVQ advanced	vocational	177	0.7
NQF 3 , ONC BTEC national etc	vocational	2,911	11.6
NQF 3 total		4,765	19.1
NQF 4 , First degree & equivalent	academic	3,631	14.5
NQF 4 , HE below degree level	academic	469	1.9
NQF 4 , HNC BTEC & RSA higher etc	vocational	1,074	4.3
NQF 4 , Nursing and teaching	vocational	642	2.6
NQF 4 total		5,817	23.3
NQF 5 , Higher degree	mainly academic	1,730	6.9
Total		24,993	100.0

**Source:** IER estimates based on the Labour Force Survey, Spring 2006.

3.43 Table 3.2 shows the distribution of qualifications across the workforce. A number of points emerge:

- the relatively high levels of people with no qualification who are either unemployed or inactive, hence the importance ascribed in Government policy to providing skills to those without work;
- the strong age cohort effect, with older people being much more likely to have no qualifications: over twice the percentage of 60-64 year olds have no qualification compared to 16-24 year olds;

*The workless and older people are most likely to lack qualifications, but...*

*... there is little difference in the qualifications of men and women or between white and non-white ethnic groups ...*

- differences between men and women are modest except at NQF Level 3 where men are much more likely to hold this qualification;
- there is little difference between the qualifications profiles of white and non-white populations, except that the white population is more likely to be qualified to NQF Level 3 and the non-white to NQF Level 5;
- people in higher-level occupations are more highly qualified, especially professionals at NQF Level 5. There continues to be a substantial proportion of managers qualified at NQF Level 2 or lower (an age cohort effect).

*... although people in high-level occupations tend to be highly qualified.*

3.44 *Figure 3.6* shows the distribution of qualifications by region. Regional productivity differences may reflect differences in regional skill supply but it is difficult to disentangle cause and effect. Regions may have relatively low productivity because they have a mix of industries that demand relatively low skills. Alternatively, a poor skill supply might result in a dependence on low productivity industries because the development of higher levels activities is constrained by skill shortages. Whatever the explanation, London stands out as having a higher educational attainment profile than other regions. This is a reflection of several factors, of which the net inward migration to London of the highly qualified (attracted by the large volume of high-level jobs), is a significant one (LSC, 2007).

*There are marked regional differences in qualifications held across regions*

...

*... with London standing out as having the most highly qualified workforce.*

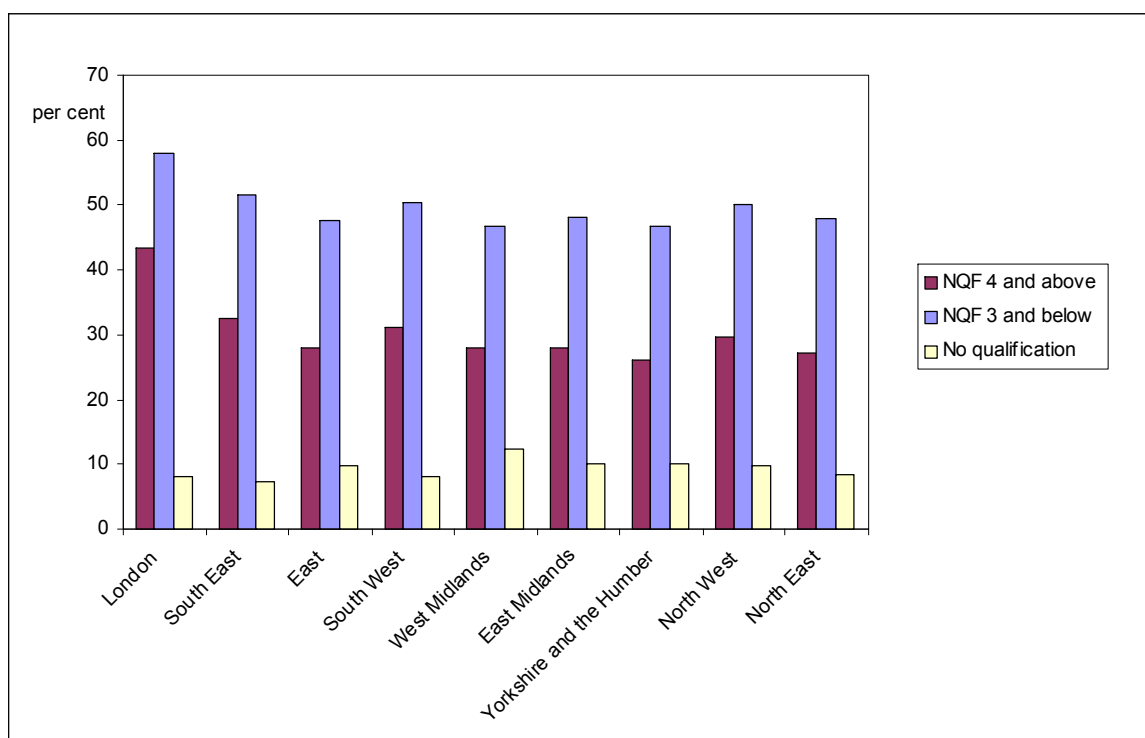
3.45 At a city-region level, Gross Value Added per capita shows considerable variation but with a general north-south divide (ODPM, 2005). In general, differences in regional economic performance are deep rooted and long standing and it is likely that differences in educational attainment are a contributory rather than a principal cause of observed differences.

**Table 3.2: Qualifications of the workforce, England 2006**

2006	No qualification	NQF 1	NQF 2	NQF 3	NQF 4	NQF 5
<b>Economic status</b>						
Economically active	10.2	18.6	22.0	19.0	23.3	6.9
In Employment	9.7	18.2	21.9	19.2	23.9	7.1
ILO unemployed	19.0	25.7	23.8	16.2	12.2	3.1
Inactive	29.5	20.2	19.9	17.7	10.4	2.3
Total	14.1	18.9	21.6	18.8	20.7	6.0
<b>Age (Economically active)</b>						
16-24	8.7	20.3	30.8	25.5	13.3	1.3
25-49	7.4	18.8	20.7	18.0	26.7	8.3
50-59	15.4	17.3	19.4	18.2	22.2	7.5
60-64	20.7	16.7	21.6	17.5	18.2	5.4
<b>Gender (Economically active)</b>						
Male	10.6	17.6	20.7	22.0	22.1	7.1
Female	9.7	19.8	23.5	15.6	24.7	6.7
<b>Ethnicity (Economically active)</b>						
White	10.0	18.4	22.3	19.5	23.0	6.7
Non-white	11.3	20.0	19.5	14.5	25.6	9.0
<b>Occupation SOC2000 (Economically active)</b>						
1 Managers and Senior Officials	5.7	13.5	18.5	19.7	33.3	9.3
2 Professional occupations	1.0	4.3	6.0	8.4	50.3	30.0
3 Associate Professional and Technical	2.5	11.6	17.2	17.2	43.7	7.7
4 Administrative and Secretarial	6.9	25.8	29.7	18.4	16.8	2.5
5 Skilled Trades Occupations	12.7	17.1	25.2	35.2	9.1	0.8
6 Personal Service Occupations	8.7	19.1	30.5	24.7	15.7	1.3
7 Sales and Customer Service Occupations	14.2	24.6	31.3	20.4	9.0	0.5
8 Process, Plant and Machine Operatives	17.9	31.1	27.1	19.0	4.4	0.5
9 Elementary Occupations	26.9	28.8	24.2	15.2	4.5	0.4

**Source:** IER estimates based on the Labour Force Survey, Spring 2006.

**Figure 3.6: Percentage of employees qualified by region, 2006**



**Source:** IER estimates based on the Labour Force Survey, Spring 2006.

## Participation in Post-16 Education

### Participation in Further Education

3.46 Participation in further education (FE) provides an indication of the future supply of skills. In the FE sector it is conventional to distinguish between:

- Further Education (FE) colleges;
- Work-Based Learning (WBL);
- Adult and Community Learning (ACL);
- School Sixth Forms (SSF).

3.47 The LSC reported that in 2005/06 there were (LSC, 2006):

- 3.63 million learners in LSC-funded FE
- Work-Based Learning – 486,000
- Adult and Community Learning – 786,000
- School Sixth Forms – 208,000.

*In 2005/06 around 5.1 million people were in some form of post-16 learning or education (excluding higher education).*

3.48 Participation levels reveal only part of the story. There is also a need to identify successful completion rates of the courses studied. Overall,

*Success rates increased in 2003-2005.*

success rates increased by just under 3 per cent between 2003/04 and 2004/05 and by around 2 per cent between 2004/05 and 2005/06. In FE colleges 75 per cent successfully completed their studies; in WBL it was 40 per cent (31 per cent 12 months earlier).

3.49 *Table 3.3* provides information about the NQF level at which people study in FE. In general, work-based learning tends to be at Level 2 and FE at Level 3. Between 2004/05 and 2005/06, there has been little change in the percentages studying at each level.

**Table 3.3: Participation by age and level in further education**

Age	Qualification Level	WBL	FE	Total	column percentages		
					WBL	FE	Total
		<b>2004/05</b>			<b>2005/06</b>		
<b>Under 19</b>	Level 1 and entry	25	18	20	26	18	20
	Level 2	57	26	35	57	27	35
	Level 3	18	53	43	17	53	43
	Level 4, 5 and HE	0	0	0	0	0	0
	Level not specified	0	3	2	0	2	2
	<i>All levels (000s)</i>	292	727	1019	268	744	1012
<b>19 plus *</b>	Level 1 and entry	1	43	40	1	41	38
	Level 2	52	28	29	52	32	33
	Level 3	45	14	16	46	14	17
	Level 4, 5 and HE	1	2	2	1	2	2
	Level not specified	0	14	13	0	10	10
	<i>All levels (000s)</i>	227	3471	3698	218	2885	3102
<b>All ages</b>	Level 1 and entry	15	38	36	14	36	34
	Level 2	55	28	31	55	31	34
	Level 3	30	20	21	30	22	23
	Level 4, 5 and HE	1	2	2	1	2	2
	Level not specified	0	12	11	0	9	8
	<i>All levels (000s)</i>	519	4198	4718	486	3629	4114

**Source:** [http://readingroom.lsc.gov.uk/lsc/National/SFR11\\_fullyear0506.pdf](http://readingroom.lsc.gov.uk/lsc/National/SFR11_fullyear0506.pdf)

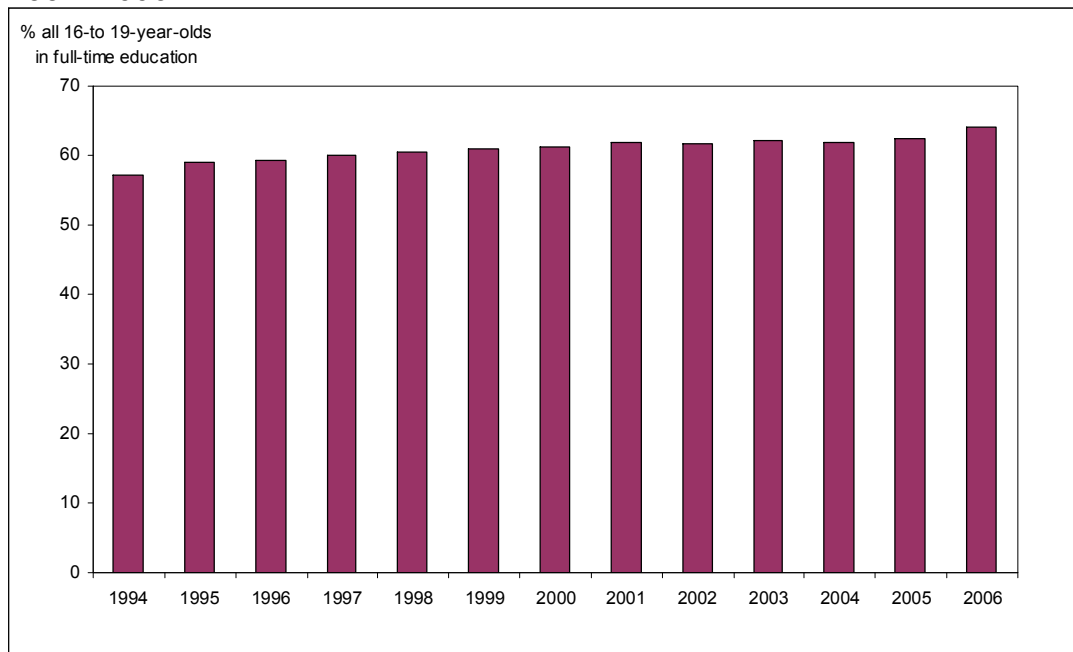
**Notes:** \* Includes unknown ages.

### Participation of 16-19 year olds

3.50 Just under a fifth of those participating in FE are aged 19 years or under. *Figure 3.7* shows the increase in participation of 16 to 19 year olds over the past 10 years in full-time education. It reveals modest improvement over the period, with little change over recent years, although participation in full-time study has been made easier through the introduction of the Educational Maintenance Allowance (Middleton *et al.*, 2005). DfES data showing the participation of 16 to 18 year olds in education and training reveal that there has been an absolute increase but that the percentage of participants was lower in 2005 (76 per cent) – the latest year for which data are available – compared to 1994 (78 per cent) (LSC, 2006).

*The participation of 16-19 year olds in full-time education has increased little in recent years.*

**Figure 3.7: Participation of all 16 to 19 year olds in full-time education, 1994–2006**



**Source:** Labour Force Surveys 1994–2006

3.51 *Table 3.4* shows the current participation of 16 and 17 year olds in FE. This group is of interest because it is the one that continues on in education and training rather than becoming economically active. The data reveal that 79 per cent of 16 year olds continue in education but this falls to 69 per cent by the time individuals reach 17 years of age.

**Table 3.4: Participation rates in post-compulsory education and training, 2004/05**

	16 year olds					17 year olds				
	At school	In FE		GST	All in F/T education and GST	At school	In FE		GST	All in F/T education and GST
		Full-time	Part-time				Full-time	Part-time		
England	35	38	4	7	80	28	31	6	9	69
Men	33	35	4	9	77	26	29	6	11	66
Women	38	41	4	6	84	30	34	5	7	72

**Source:** *Education and Training Statistics 2006*

**Note:** GST = Government-supported training

3.52 *Table 3.4* also reveals differences by gender. The participation rate for 16 year old males in full-time education or government-sponsored training is 77 per cent compared with 84 per cent for 16 year old females, and 66 per cent for 17 year old men compared with 72 per cent for 17 year old women.

*Young men are less likely to continue in education than young women.*

3.53 The overall success rate for this age group is 72 per cent, up from 69 per cent in 2003/04. Nonetheless, around a quarter of young people are not in employment, education, or training (NEET). This percentage has been increasing but this may be due to some young people taking a gap year before continuing their studies.

*Around a quarter of young people are NEET.*

### Work-Based Learning for Young People

3.54 Work-based learning is also important for many young people. This is especially important with intermediate-level training, leading to NQF Levels 2 and 3 qualifications. The Apprenticeship initiative, which accounts for the largest share of this form of training, is particularly significant here.

3.55 Apprenticeships are employer-led learning programmes that enable the learner (the apprentice) to gain the knowledge, skills and experience to perform a job role. They are suitable for those entering employment or existing employees who



wish to develop and accredit their abilities. To achieve an apprenticeship every apprentice must spend time in employment. The content of an apprenticeship is defined by each Sector Skills Council (SSC) in accordance with a nationally approved blueprint. There are currently over 200 approved frameworks, each covering a range of job roles; and each framework is kept under review, responding to changes in work and job roles. Apprenticeships are available at Level 2 – called ‘Apprenticeships’, at Level 3 – called ‘Advanced Apprenticeships’ and trials are underway for ‘Higher Apprenticeships’, including higher education – Level 4 within the apprenticeship. Apprenticeships are open to employees of all ages. Funding is provided by the Government for apprenticeships, distributed by the LSC. It is currently available for apprentices of all ages but priority is given to 16-18 year olds. More detail is available on apprenticeships from the Apprenticeships website (<http://www.apprenticeships.org.uk/>) and from the LSC’s (<http://www.lsc.gov.uk/whatwedo/14-19/Apprenticeships.htm>).

- 3.56 Evidence indicates that, for organisations that use Apprenticeships, the business benefits have been substantial (McIntosh, 2007; Hogarth and Hasluck, 2005). *Table 3.5* shows the current level of participation in Apprenticeship training for 2003/04 to 2004/05. Since 2000/01, participation in apprenticeships has increased, though participation in advanced apprenticeships has fallen.

**Table 3.5: Work-based learning for young people**

	Advanced Apprenticeships	Apprenticeships	NVQ learning	Entry to Employment	Total WBL for Young People	FE Prog Led pathway Apprenticeship
2000/01	72.4	104.1	50.1	26.3	252.9	
2001/02	54.0	108.3	54.1	31.1	247.6	
2002/03	50.4	122.2	41.7	36.5	250.8	
2003/04	57.0	136.6	26.8	61.1	281.5	
2004/05	53.9	134.5	8.9	51.8	249.1	37.1

Source: <http://www.dfes.gov.uk/rsgateway/DB/SFR/s000643/Addition1.xls>

- 3.57 Full framework completion is the measure used by Government to monitor Apprenticeship programmes. The evidence shows that success rates have been improving in many areas (see Table 3.6). The table shows the percentage of 'Leavers less transfers' (that is, the percentage of all the apprentices that left during the academic year and who achieved their full framework).
- Apprenticeship success rates are improving.*

**Table 3.6: Apprenticeship outcomes**

	Percentage							
	2001/02		2002/03		2003/04		2004/05	
	Frame-work	Frame-work and NVQ	Frame-work	Frame-work and NVQ	Frame-work	Frame-work and NVQ	Frame-work	Frame-work and NVQ
Apprenticeship	22	34	24	37	30	42	41	51
Advanced Apprenticeship	26	36	32	44	32	46	38	52
Total	<b>24</b>	35	<b>27</b>	39	<b>31</b>	44	<b>40</b>	51

Source: LSC estimates / LSC 2006

- 3.58 The volume of 'NVQs only' completed has reduced substantially in recent years. Therefore the figures the DfES and Government are mainly concerned with are the total percentages of framework (24 per cent, 27 per cent, 31 per cent and 40 per cent) in the third row, in bold, of Table 3.6. For the 2008 Public Service Agreement (PSA) Performance Indicator the 75,511 completions required are full apprenticeship framework completions. In 2003/04, 52,000 frameworks were completed, 68,000 in 2004/05, with indications that 75,000 were completed in 2006.

## Participation in higher education

- 3.59 The final area of interest is that relating to participation in higher education (HE). Recent years have seen a massive growth in the numbers entering HE. In 1990/91 there were 749,000 students in full-time HE in the UK, compared with 1.5million in 2004/05.
- 3.60 The Higher Education Initial Participation Rate (HEIPR) is used to measure progress towards the target of 50 per cent of young people entering HE. The current provisional total is 42 per cent, but this varies by gender (see Table 3.7). Enrolments in 2004/05 were 2 per cent up on previous years. Table 3.7 shows that the HEIPR for women (47 per cent) is higher than for men (42 per cent). Between 1999 and 2005 there has been little change in the rate for men, while that for women has grown.

*Around 42 per cent of young people are participating in higher education.*

**Table 3.7: Higher education initial participation rate, 1999–2005**

	1999/2000 HEIPR (%)	2004/2005 (provisional) HEIPR (%)
Male	38	37
Female	43	47
Total	41	42
Number of initial entrants (000s)	246	271

**Source:** DfES Statistics: ([www.dfes.gov.uk/rsgateway/DB/SFR/s000572/SFR14-2005v3.pdf](http://www.dfes.gov.uk/rsgateway/DB/SFR/s000572/SFR14-2005v3.pdf)).

- 3.61 Higher Education Statistics Agency (HESA) statistics for the destinations of full-time first degree graduates (188,800 in total leaving UK HE institutions in 2004/05) show that 63 per cent of leavers reported their first destination as employment and 7 per cent were assumed to be unemployed.
- 3.62 The full economic impact of the massive increase in HE is yet to be fully estimated, especially at the macroeconomic level. But graduates earn more than those with lesser qualifications (see Chapter 4 on the rates of return on graduation). Nevertheless, the increase in the number of people entering HE – and the relatively low drop-out rates for those who do enrol – indicates a marked qualitative change in skills supply over a relatively short span of time.
- 3.63 There is, however, uncertainty about the extent to which the vocational route through FE readily permits progression to higher education. This is a problem

*Over 60 per cent of graduates enter employment.*

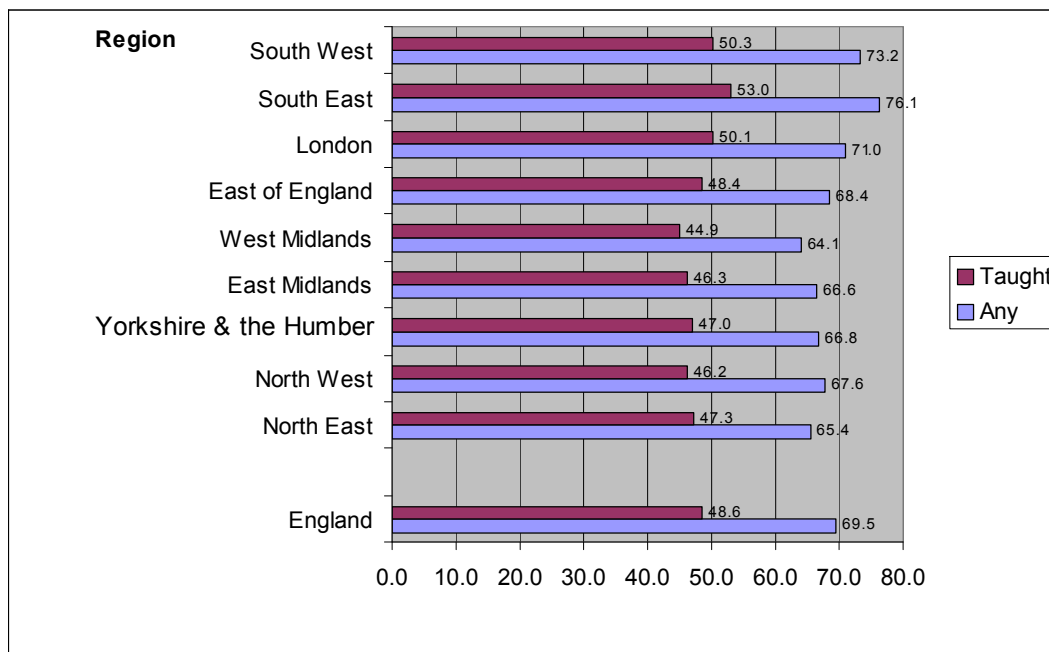
that many other EU countries are currently also having to address.

### Adult participation in learning

3.64 *Figure 3.8* shows the participation rates for those participating in any form of learning over the previous 12 months, and those participating in a taught course of some form. Overall, the data reveal just under 70 per cent of the population reporting that they had been engaged in some form of learning and just under 50 per cent that they had been engaged in a taught type of activity. There are also regional differences in the data, with the South West, South East, and London standing out as having relatively high percentages of the workforce engaged in adult learning.

*Just under 70 per cent of people engage in some form of learning in the last 12 months.*

**Figure 3.8: Adult participation in learning, 2004-05**



Source: DfES Statistics: ([www.dfes.gov.uk/rsgateway/DB/STA/t000596/adultparticipation.xls](http://www.dfes.gov.uk/rsgateway/DB/STA/t000596/adultparticipation.xls)).

3.65 *Skills for Life* qualifications are designed to develop basic skills: numeracy, literacy, English language skills. The typical characteristics of the *Skills for Life* learner are: under 19 years, male, with learning difficulties / disabilities, from black minority ethnic (BME) groups. In raising basic skills levels the LSC has already met its interim target of improving these skills for 1.5 million people (as of July 2006).

*Skills for Life qualifications are designed to develop basic skills.*

3.66 There is evidence that the *National Literacy and Numeracy Strategies* have successfully increased standards, especially for young males. The *Educational Maintenance Allowance* (EMA) is also important here in allowing some disadvantaged groups to stay on in education – increasing participation rates among 16-18 year olds by 6 per cent. These were principally young people from semi-skilled parental backgrounds who had not achieved well at age 11 (Middleton *et al.*, 2005). Evidence suggests that the EMA may also have had an impact on reducing crime rates (Feinstein and Sabates, 2005).

*National Literacy and Numeracy Strategies have been a success.*

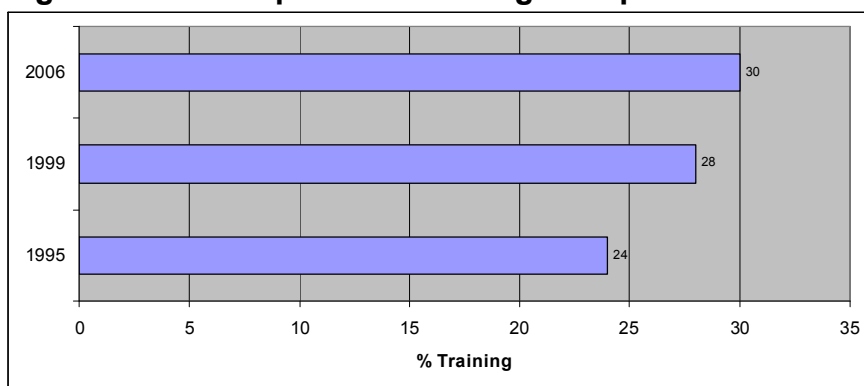
## Workplace Training

3.67 *Figure 3.9* shows the incidence of training reported by people of working age. The data are drawn from the LFS, which asks people if they have received training over the past 13 weeks. The data reveal that slightly over 30 per cent participate in workplace-based training and there has been a modest increase over the past 10 years. The data also reveal that the duration of training is often less than a week: 32 per cent of all receiving training. Training tends to be of longer duration for people aged 16-19 years. For this group, only 10 per cent had received training of less than a week.

*Over 30 per cent of people participated in workplace-based training but...*

*...such training often lasted less than one week.*

**Figure 3.9: Participation in training over previous 13 weeks**



**Source:** Labour Force Surveys.

- 3.68 *Table 3.8* provides a more detailed picture of the receipt of training. A number of findings emerge:
- although young people are more likely to engage in training, the proportion of older people engaging in training is increasing more quickly;
  - women are more likely to have received training and the gap between men and women has increased over time;
  - non-permanent staff are more likely to have received training, perhaps reflecting induction training;
  - the percentage receiving training amongst the most highly qualified has remained constant but the percentage of people with no qualifications receiving training is stable and may even be in decline;
  - professionals, associate professionals, and those in personal service occupations are most likely to have been in receipt of training.

*Training is more likely to be received by...*

*...young people,*

*...women,*

*...non-permanent staff, and*

*...the more highly qualified and those in professional jobs.*

3.69 The distribution of training and FE remains skewed towards the better qualified, with a large number of people with no or low qualifications, despite overall high rates of participation in education and training. Such patterns are not unique to this country, but there is evidence that the degree of skewing is greater here than elsewhere.

3.70 The LFS is not the only source of data relating to the incidence of workplace-based training. NESS05 also provides these data but from the employer's perspective. Overall the data reveal:

*Around 65 per cent of workplaces engage in some form of training but...*

- 65 per cent of workplaces engage in some form of training;
- 46 per cent engage in off-the-job training;
- 51 per cent engage in on-the-job training;
- 45 per cent of establishments have a business plan;
- 33 per cent of establishments have a training budget.

*...small employers are less likely to engage in training than larger employers.*

The smallest employers are less likely to provide training than are bigger employers. Around 50 per cent of workplaces with 2-4 employees provided no training, compared to 9 per cent with 500 or more employees. Where training is not provided the reason tends to be that the workforce is fully proficient (71 per cent of workplaces not training provided this rationale).

**Table 3.8: Proportion who had received training in the previous 13 weeks**

	1996 %	2001 %	2006 %
All	25.3	29.0	28.2
Age			
16-24	34.4	38.8	36.7
25-49	27.0	30.6	29.4
50-59	17.2	22.6	24.6
60-64	9.8	12.6	15.6
Gender			
Male	23.4	26.0	24.8
Female	27.6	32.6	32.2
Ethnicity			
White	25.3	28.8	28.1
Non-white	24.8	29.6	29.5
Full-time/Part-time			
Full-time	26.6	30.3	29.0
Part-time	21.1	25.2	25.9
Permanent/Temporary			
Permanent	27.1	30.8	30.1
Not permanent in some way	30.8	33.3	33.8
Qualifications			
NQF 5	40.7	44.4	40.8
NQF 4	41.0	41.9	38.2
NQF 3	35.8	29.5	28.6
NQF 2	29.2	26.7	25.3
NQF 1	27.3	23.6	22.2
No qualification	13.2	10.8	10.8
Occupation			
1 Managers and Senior Officials	27.0	29.7	26.2
2 Professional occupations	42.9	44.7	42.4
3 Associate Professional and Technical	35.4	39.0	39.2
4 Administrative and Secretarial	25.3	28.1	24.1
5 Skilled Trades Occupations	17.2	20.2	18.1
6 Personal Service Occupations	28.1	36.8	42.8
7 Sales and Customer Service Occupations	17.9	21.4	22.5
8 Process, Plant and Machine Operatives	12.9	17.3	14.6
9 Elementary Occupations	16.6	20.4	16.5

**Source:** Labour Force Surveys.

- 3.71 The scale of training activity is substantial. In 2005, employers collectively reported that they had provided training over the previous 12 months for 13.1 million workers. This represents 61 per cent of the total workforce and 70 per cent of the workforce in establishments that provide any training. In total they had provided 130 million training days (see Table 3.9). *In 2005, over 13 million workers received training.*

**Table 3.9: Training days**

		<b>Train both on- and off-the-job</b>	<b>Train off- the-job only</b>	<b>Train on- the-job only</b>
<i>Base: All employers (weighted)</i>	1,390,155	454,803	186,624	259,467
<i>Base: All employers (unweighted)</i>	74,835	31,425	9,879	13,562
Total training days (millions)	161.8m	130.4m	6.1m	25.3m
Per capita training days (total workforce)	7.5	9.6	2.8	8.6
Per capita training days (training employers' workforce)	8.7	9.6	2.8	8.6
Per trainee training days	12.3	12.6	6.6	13.6
Days off-the-job training per off-the-job trainee	6.1	6.1	6.3	-
Days on-the-job training per on-the-job trainee	10.8	10.1	-	14.1

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All employers

**Notes:** The 'per trainee training days' row uses the derived employer engagement measure of number of trainees which models 'don't know' responses. The 'days off-the-job training per off-the-job trainee' and 'days on-the-job training per on-the-job trainee' rows use the total numbers trained off- and on-the-job respectively and 'don't knows' are excluded. Hence the slight discrepancy between the per training days per trainee among those training off-the-job only and the days off-the-job training per off-the-job trainee among the same employers. The equivalent effect happens for on-the-job training days.

- 3.72 Of the 13 million employees who had been trained, 2.5 million (19 per cent) had been trained towards a nationally-recognised qualification. Just under half of these had been training towards an NVQ (1.2 million). Working towards an NVQ was more common in larger workplaces: among the largest establishments that trained, almost half (49 per cent) had trained at least one member of staff towards an NVQ compared to 16 per cent among the smallest *Less than 20 per cent of people receiving training were working towards a recognised qualification.*



establishments. Where training had been provided, 28 per cent had used an FE college, and 53 per cent a private training provider. Overall, there was a high level of satisfaction with the training received from these two sources (Shury *et al.*, 2006).

## Training expenditure

- 3.73 NESS05 collects information about employers' training expenditure over the last 12 months. The estimates are based on the employers' direct costs and do not include indirect costs such as the trainee's foregone income when training.
- 3.74 Estimates derived from NESS05 suggest that employers' expenditure is around £33bn each year on training (2005 prices), based on spending around £1,500 per employee, or £2,500 per employee in receipt of training (see *Table 3.10*).

*Employers are estimated to spend around £33bn per year on training.*

**Table 3.10: Training expenditure**

	All trainers	All off-the-job trainers	All on-the-job trainers
<i>Unweighted base</i>	7,059	5,437	5,861
<i>Weighted base</i>	896,639	636,249	709,521
<i>Training cost</i>	£33,331m	£16,807m	£16,524m
<i>Per capita training cost (total workforce)</i>	£1,550		
<i>Per capita training cost (training employers' workforce)</i>	£1,789	£1,071	£1,005
<i>Per trainee training cost</i>	£2,544	£2,167	£1,531

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All employers.

**Note:** Per capita and per trainee spend figures rounded to nearest £5.

- 3.75 The various items of training expenditure incurred by the employer are listed in *Table 3.11*. Labour costs account for the largest share of expenditure (estimated at £16bn)<sup>3</sup>, followed by the management of training (estimated at £5.1bn), and the costs of those delivering on the job training (6.5bn). These two costs account for 35 per cent of employer expenditure.

<sup>3</sup> Items a, l and k in *Table 3.11*.

**Table 3.11: Training cost components**

	Overall cost	%
<b>Off-the-job training: course-related</b>		
a) Trainee labour costs	£4,173m	13
b) Fees to external providers	£1,654m	5
c) On-site training centre	£2,287m	7
d) Off-site training centre (in the same company)	£381m	1
e) Training management	£5,100m	15
f) Non-training centre equipment and materials	£446m	1
g) Travel and subsistence	£337m	1
h) Levies minus grants	-£67m	*
<b>Off-the-job training: other (seminars, workshops etc.)</b>		
i) Trainee labour costs	£1,788m	5
j) Fees to external providers	£708m	2
<b>On-the-job training</b>		
k) Trainee labour costs	£9,998m	30
l) Trainers' labour costs	£6,526m	20
<i>Unweighted base</i>	7,059	
<i>Weighted base</i>	896,639	

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All trainers completing the Cost of Training survey (7,059 unweighted, 896,639 weighted)

**Note:** '\*' denotes a figure greater than 0 per cent but less than 0.5 per cent

3.76 The evidence shows that small employers spend a disproportionately large share of total training expenditure. Employers with fewer than five employees account for 14 per cent of all training expenditure but account for only 6 per cent of trainees. Those with 500 or more employees accounted for only 9 per cent of all training expenditure but for 15 per cent of employees. The data clearly reveal economies of scale in delivering training, which relatively benefits larger employers. This is further illustrated in *Table 3.12* which shows average expenditure per trainee by establishment size.

*Economies of scale in training benefit large employers and disadvantage small employers.*

**Table 3.12: Training expenditure by size**

	Mean cost per training establishment	Cost per trainee (all training)	Average off-the-job training costs per off-the-job trainee	Average on-the-job training costs per on-the-job trainee
Overall	£37,173	£2,550	£2,175	£1,525
<b>Fewer than 5</b>	£12,422	£5,650	£5,675	£3,300
<b>5 to 24</b>	£24,278	£3,225	£2,975	£1,850
<b>25 to 99</b>	£80,858	£2,475	£1,875	£1,600
<b>100 to 199</b>	£192,616	£1,975	£1,600	£1,250
<b>200 to 499</b>	£420,325	£1,900	£1,525	£1,225
<b>500+</b>	£1,409,038	£1,575	£1,350	£850

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All trainers completing the Cost of Training survey (7,059 unweighted, 896,639 weighted)

**Note:** costs per trainee rounded to nearest £25. Per trainee figures calculated using respondents' trainee numbers from main NESS05 data.

3.77 There are also sectoral differences in employer training expenditure (see *Table 3.13*). The 'non-SSC employer' category accounts for the largest percentage of expenditure but this is more or less in line with its share of employment. Of interest are those SSCs which reveal relatively high expenditure per trainee. These are:

- Lantra;
- Construction Skills;
- People 1st;
- Skills for Care and Development;
- SummitSkills;
- Asset Skills.

*Training expenditure is high in some sectors ...*

There are also SSCs where expenditure per trainee is relatively low:

- Energy and Utility Skills;
- Skillsfast-UK;
- GoSkills;
- Skillset;
- Improve Ltd.

*... but relatively low in others.*

**Table 3.13: Total training expenditure and per capita spend by SSC**

	<i>Unweighted base</i>	<i>Weighted base</i>	<b>Total</b>	<b>% of total expenditure</b>	<b>% of all employ- ment</b>	<b>Training spend per employee</b>
Overall	7,059	896,639	£33,331m			£1,550
				%	%	
Lantra	168	32,214	£766m	2	1	£2,675
Cogent	155	10,417	£413m	1	2	£975
Proskills	159	11,631	£413m	1	2	£1,150
Improve Ltd	112	4,874	£267m	1	2	£725
Skillfast-UK	75	8,901	£136m	*	1	£550
SEMTA	297	28,519	£1,790m	5	6	£1,475
Energy & Utility Skills	120	7,828	£109m	*	1	£450
ConstructionSkills	472	64,224	£2,520m	8	5	£2,450
SummitSkills	186	15,646	£457m	1	1	£2,150
Automotive Skills	247	26,980	£570m	2	2	£1,275
Skillsmart Retail	611	109,840	£3,025m	9	11	£1,325
People 1 <sup>st</sup>	532	82,427	£3,741m	11	7	£2,450
GoSkills	88	6,004	£264m	1	2	£675
Skills for Logistics	154	19,027	£556m	2	3	£875
Financial Services Skills Council	213	28,251	£1,708m	5	4	£1,875
Asset Skills	283	48,738	£1,450m	4	3	£2,075
e-skills UK	382	33,438	£1,054m	3	3	£1,600
Skills for Justice	55	3,050	£213m	1	1	£800
Lifelong Learning UK	283	14,595	£1,052m	3	3	£1,450
Skills for Health	243	29,601	£2,019m	6	7	£1,300
Skills for Care & Development	553	38,579	£1,856m	6	4	£2,325
Skillset	115	5,750	£90m	*	1	£700
Creative and Cultural Skills	125	11,842	£316m	1	1	£1,625
SkillsActive	161	11,161	£304m	1	1	£1,225
Non-SSC employers	1,253	234,696	£7,732m	23	25	£1,450

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All trainers completing the Cost of Training survey (7,059 unweighted, 896,639 weighted)

**Notes:** training spend per employee rounded to the nearest £25.

Employers covered by Government Skills SSC have not been shown due to a low base size. Per employee figures calculated using respondents' employment numbers from main NESS05 data.

\*' denotes a figure greater than 0 per cent but less than 0.5 per cent.

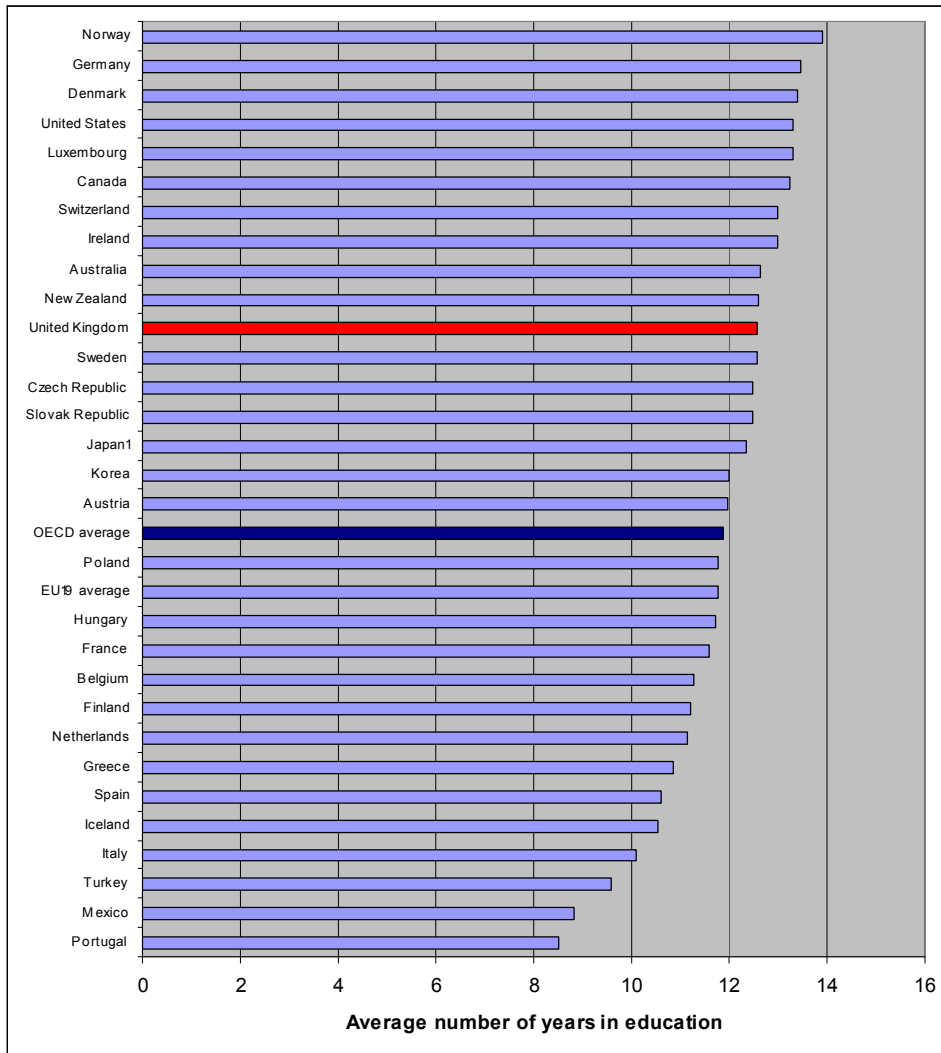
## International Comparisons

- 3.78 As the Leitch Review pointed out, skills supply needs to be seen in a global context (Leitch, 2006). It is no longer sufficient to report progress in the supply of skills in one's own country, it is also necessary to maintain a level of progress at least as good as one's main competitors. *Skill supply needs to be seen in a global context.*
- 3.79 The OECD provides detailed information about education systems and levels of educational attainment across much of the developed world in *Education at a Glance 2006* (OECD, 2006). *Figure 3.10 and Table 3.14* indicate that levels of educational attainment in the UK are above the OECD average. *Figure 3.10* shows the average number of years people actually spend in education and the UK ranks relatively highly. The UK records the highest number of expected years in education at 20.7 years – of any OECD country.<sup>4</sup> *People in the UK spend more years in education than in any other OECD country.*

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<sup>4</sup> The educational attainment of the adult population indicates the proportion of the population aged 25 to 64 years that has completed a specified level of education. In the case of *Figure 3.10*, educational attainment of the adult population is shown as the average number of years of successfully completed formal education by those aged 25 to 64. **Education expectancy** is defined as the expected number of years of education under current conditions (excluding education for children under the age of five). It includes adult persons of all ages who are enrolled in formal education.

**Figure 3.10: Educational attainment of the adult population: average years in the education system, 2004**



**Source:** OECD, 2006; Chart A1.A: ([www.oecd.org/dataoecd/document/6/](http://www.oecd.org/dataoecd/document/6/)).

**Base:** 25- to 64-year-old population.

**Note:** <sup>1</sup> Data for Japan relates to 2003.

**Table 3.14: Highest level of educational attainment, 2004**

	Pre- primary and primary education	Lower secondary education	Upper secondary education	Post- secondary non- tertiary education	Tertiary education	All levels of education
Australia	2	36	31	3	39	100
Austria	2	20	53	9	26	100
Belgium	16	19	33	1	29	100
Canada	5	11	32	12	53	100
Czech Republic		11	77		28	100
Denmark	1	16	51		32	100
Finland	13	10	43		34	100
France	15	20	41		32	100
Germany	2	14	53	6	25	100
Greece	31	11	30	8	20	100
Hungary	2	23	57	2	16	100
Iceland	3	29	37	3	28	100
Ireland	18	19	24	10	28	100
Italy	19	32	36	1	19	100
Japan <sup>1</sup>	2	16	52		46	100
Korea	13	13	49		38	100
Luxembourg	19	3	48	6	23	100
Mexico	51	26	8		24	100
Netherlands	8	21	38	4	29	100
New Zealand	2	22	48	10	33	100
Norway		11	53	3	32	100
Poland	2	16	65	4	32	100
Portugal	61	14	17	1	21	100
Slovak Republic	1	15	72	5	12	100
Spain	28	27	19	c	26	100
Sweden	7	10	53	7	43	100
Switzerland	3	12	49	7	28	100
Turkey	64	10	17	a	25	100
<b>United Kingdom</b>		<b>15</b>	<b>55</b>		<b>29</b>	<b>100</b>
United States	5	8	54	5	39	100
OECD average		30	42		25	
EU19 average		29	45		23	
Brazil	57	14	32		24	100
Chile	24	26	47		21	100
Israel	2	21	44		45	100
Russian Federation <sup>1</sup>	3	8	44	5	63	100

**Source:** OECD Education at a Glance 2006**Base:** 25- to 64-year-old population

3.80 OECD's *Education at a Glance* records significant improvements in participation rates and attainment over time in the UK as a whole, but points to a number of areas where the UK reports relatively weak performance:

*UK participation and attainment rates have been improving, but...*

- participation in higher education has grown over recent years but has now levelled off, whilst it continues to grow elsewhere;
- continued progression from compulsory schooling into further education is relatively weak, although the UK is relatively good at getting people back into education and training;
- labour market penalties from failing to complete upper secondary education are higher than elsewhere.

*...some weaknesses remain.*

3.81 The number of people who have entered tertiary education has increased over recent years. In 1998, the UK had the highest enrolment rate for entering first degree-level qualifications; but its position has slipped since then, mainly because the rate of enrolment has increased faster across the rest of the OECD countries. The OECD suggests that this might result from a better array of public funding arrangements for students being available in other countries. In 2004, 52 per cent of young people entered a first degree-level qualification compared to 53 per cent in the OECD as a whole. It must be noted, however, that the drop-out rate from higher education in the UK is much lower than many countries in the OECD. The record of the UK is also strong in relation to vocational tertiary education, where it records one of the higher enrolment rates.

*The UK has a strong record on participation in tertiary education – especially vocational tertiary education – but other countries are catching up.*

3.82 The United Nations Educational, Scientific and Cultural Organization (UNESCO) gross enrolment ratio (GER) is calculated as the number of pupils enrolled in a given level of education, regardless of age, expressed as a percentage of the population in the theoretical age group for the same level of education. For the tertiary level, the population used is the five-year age group following on from the secondary school leaving age. The GER for tertiary education in the UK increased from 58.2 in 2000 to 59.7 in 2005, a 2.6 per cent rise. Over the same period in France, where the GERs were only slightly lower than those in the UK, the tertiary GER grew by 6.8 per cent (from 52.8 in 2000 to 56.4 in 2005). GERs in India and China were considerably lower



than the UK in both 2000 and 2005 but the rate of growth was much higher. In India, the tertiary GER grew by 11.8 per cent (from 10.2 to 11.4) while in China the GER increased by 35.5 per cent (from 7.6 to 10.3).

- 3.83 The UK is relatively weak in terms of the proportion of individuals in the population who have successfully completed upper secondary education. Ranked by upper secondary educational attainment in the population, the United Kingdom occupies 13th position among 55 to 64 year olds in the 30 OECD countries (that is, those who completed school some 40 years ago) but only 23rd position among 25 to 34 year olds, who completed school a decade ago. The OECD concludes that whilst upper secondary attainment rates have increased in the UK, the increase has been greater in many other countries.
- The UK has a relatively poor record in regard to participation in upper secondary education.*
- 3.84 Looking at the situation of 17 year olds, enrolment in post-16 education has improved. In 1998, the 66 per cent enrolment in the UK was significantly below the OECD average of 78 per cent.<sup>5</sup> By 2004, the United Kingdom, at 81 per cent, was only slightly below the OECD average of 82 per cent. Much of this improvement was due to the inclusion in the statistics, for the first time, of young people taking part in Apprenticeship and Advanced Apprenticeship programmes (which now have a strong formal education component).
- There has been a recent improvement in the participation of 17 year olds in education.*
- 3.85 Although a relatively low proportion of 17–19 year olds continue in post-compulsory education, the evidence suggests that the FE system is relatively successful at enrolling them at a later age. For example, the rate of enrolment in the 20-29 age group, at 27.8 per cent, is above the OECD average of 24.7 per cent, while among 30-39 year olds the participation rate is 15.6 per cent, the highest in the OECD and compared to the average of 5.6 per cent. Amongst 40 year olds and older, the rate was 7.8 per cent compared to an overall OECD average of 1.6 per cent.
- The FE system is relatively successful at enrolling older people into education...*
- 3.86 In relation to on-going training and development, a mixed picture emerges for the UK. Around 27 per cent of those in employment take part in non-formal job-related education and training each year compared to the OECD average of 18 per cent. But the intensity of participation in non-formal job-related
- ... but the intensity of job-related education and training is often low.*

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<sup>5</sup> See Quintin *et al.*, 2007 for a description of the school to work transition across the OECD.

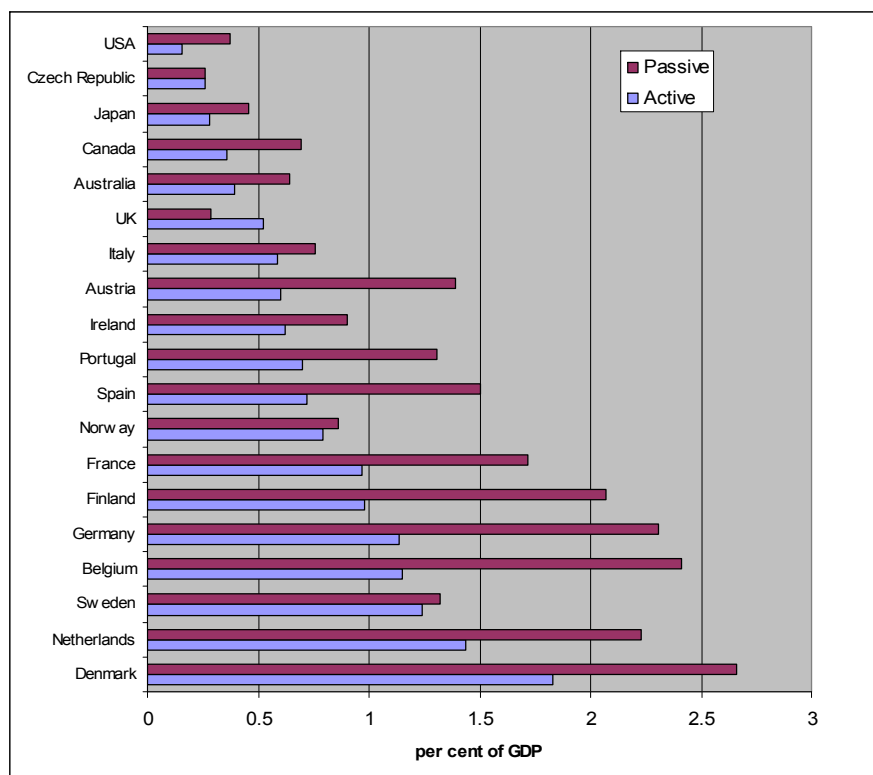
education and training is comparatively low: between the ages of 25 and 64 years, the total expected number of hours in non-formal job-related training per worker is 315, below the OECD average of 389 hours.

- 3.87 The OECD suggests that the provision of job-related education in the UK is lowest amongst those who need it most, insofar as those with relatively low educational attainment receive a lower number of hours of training. For example, those without an upper secondary education receive on average 103 hours as compared with an OECD average of 210 hours. The OECD (2006) comments "*These findings are important because they show continuing inequalities in terms of access to lifelong learning in the United Kingdom, as in other countries. They also suggest that continuing education and training currently do not succeed in making up for skill gaps emerging from initial education but, in fact, tend to reinforce disparities that result from initial education.*" (LSC, 2006).
- 3.88 A further international comparison relates to expenditure on labour market policies. With the introduction of the New Deal programmes the UK increased the level of activity in active labour market measures. *Figure 3.11* provides comparable data for 2004/05 on levels of public expenditure on each measure as a percentage of GDP. The data are sorted according to the level of expenditure on active measures. The USA spends least on either active or passive measures (0.16 per cent of GDP on active measures), and the Netherlands the most (1.44 per cent on active measures). There is no obvious relationship between the level of expenditure and unemployment levels. The Netherlands has a relatively low unemployment level, but this reflects historically different approaches to managing unemployment and economic inactivity. The current debate in Europe relates to the concept of 'flexicurity'.
- 3.89 Flexicurity is about achieving a balance: on the one hand, between employers being able to hire and fire (and thereby remove one barrier to job creation) and, on the other, providing workers with a degree of social protection and the education and training that will allow them to remain in, and progress within, the labour market. Denmark is often cited as the country that has most successively implemented flexicurity, having employment laws that allow employers to 'hire and fire' in combination with high levels of social

protection and active labour market policy to assist those in need (Bredgaard *et al.*, 2005; CEC, 2007). Provision of training to assist those out of work is an important element of the flexicurity model in countries such as Denmark and the Netherlands that record relatively high levels of expenditure on active measures and low levels of unemployment. Nonetheless, flexicurity is a contested concept. In a country such as the UK, which has low levels of social protection compared to Denmark, it could be argued that flexicurity takes the form of a dependence on a flexible labour market to provide economic security through high levels of economic growth and job creation, linked to welfare to work policies discussed below.

- 3.90 In future, international comparisons across the EU will be made easier by the introduction of a European Qualification Framework (EQF) for lifelong learning that is currently being considered by the European Commission. Further details can be found at: [http://ec.europa.eu/education/policies/educ/eqf/com\\_2006\\_0479\\_en.pdf](http://ec.europa.eu/education/policies/educ/eqf/com_2006_0479_en.pdf)

**Figure 3.11: Public Expenditure on Active and Passive Labour Market Measures**



Source: OECD Employment Outlook, 2006

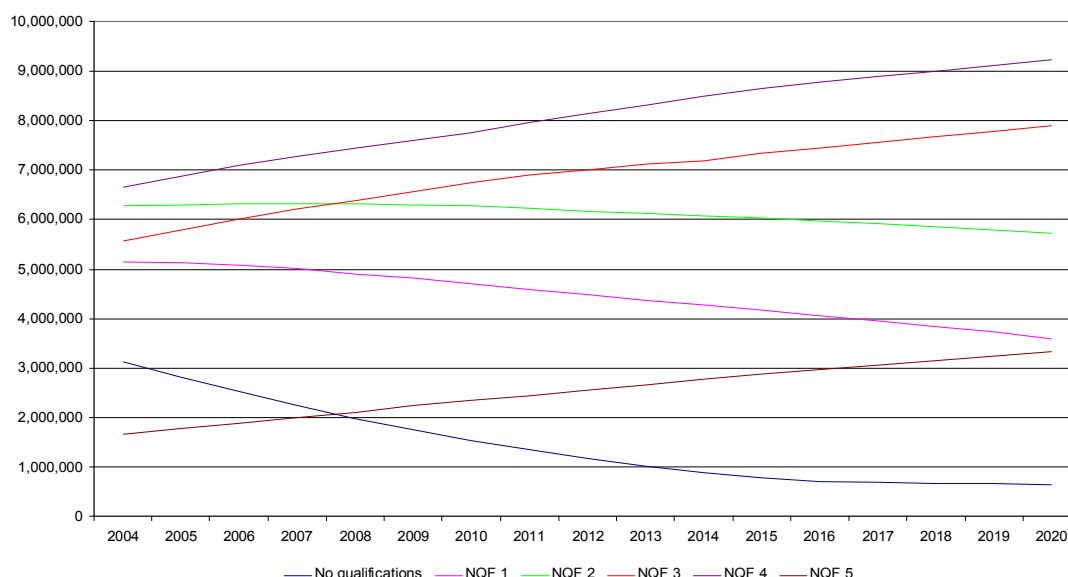
## Future Trends in Skills

3.91 Several projections of likely future developments in skills supply have been undertaken over recent years. These include a new analysis produced as part of the *Working Futures* (Wilson and Bosworth, 2006) series, as well as results incorporated into the Leitch Review.

3.92 While these projections of future labour supply differ in detail, they all suggest a substantial further increase in the number and share of people in the workforce with formal qualifications. The longer term trends identified earlier are projected to continue, with large increases in numbers qualified at NQF Level 4 and above, and reductions in the number and share with no formal qualifications (see *Figure 3.12*). The latter, although a diminishing share of the working population, are likely to become an increasingly isolated group, facing a relative decline in demand for their labour and increasing competition for low-skilled jobs from migrant workers (see Chapter 5).

*The number and share of people in the workforce with formal qualifications is projected to increase.*

**Figure 3.12: Long-term projections of numbers of qualified people**



**Source:** IER estimates as published in a contribution to the Leitch Review (Beaven et al., 2005).

## Policy Developments

### Welfare to Work and Labour Supply

3.93 Labour supply is dependent, amongst other factors, upon the operation of the welfare system. Compared to countries such as France and Germany, those out of work in the UK have more incentives to obtain work. They face relatively low income replacement rates compared with the United States, with an emphasis on targeted means-tested social security benefits, a range of in-work benefits to the low paid, and a range of active labour market measures to help connect people to work (Carcillo and Grubb, 2006). With respect to relative employment and unemployment rates, this has been a successful policy. Whilst many EU countries have been grappling with the problem of high unemployment, the situation in the UK is characterised by a high employment rate and a low unemployment rate (see *Figure 3.13*).

*The welfare system in the UK has sought to increase labour supply by boosting incentives to enter employment.*

3.94 With the introduction of the New Deal there has been greater emphasis upon equipping people with the skills and capabilities to enter and progress through the labour market (i.e. improved employability). Equal opportunities policy (in relation to gender, disability, ethnic group, and age) – sometimes acting in combination with work-life balance policies – also

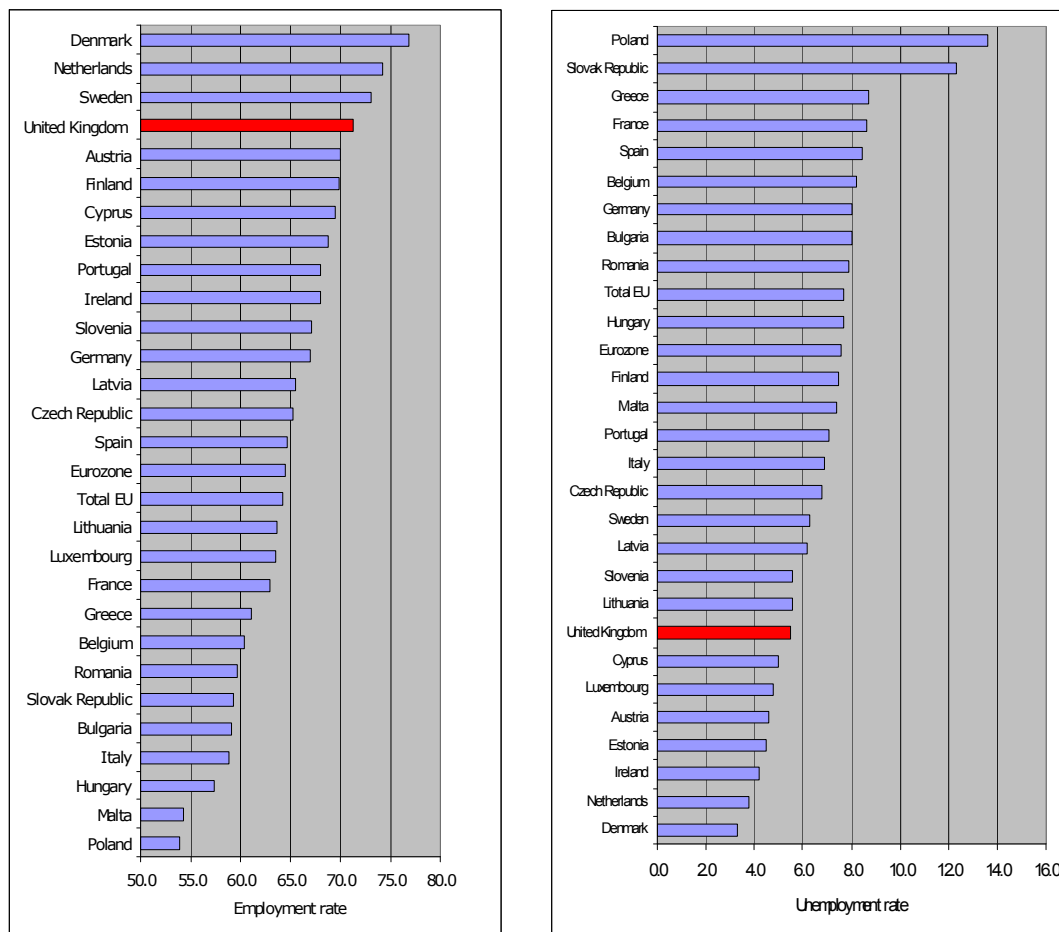
*The New Deal has aimed to increase employability.*

helps to stimulate labour supply by removing some barriers people face in finding and remaining in work.

3.95 Much recent policy debate has been in relation to the capacity of the Welfare to Work programme to increase the employability of those groups that are most likely to face persistent or recurrent unemployment or to exit the labour force (Finn, 2000; Peck and Theodore, 2000; Elias *et al.*, 2004). Current policy is based on the premise that if, for example, the long-term unemployed were assisted through a combination of subsidised work, training and employment advice, they would become more employable. In turn, it is anticipated that this will reduce wage pressures in the economy, since having more people with the skills and attributes required by employers would allow it to operate at a higher level of employment and output without adding to inflation (Layard 1997, 1998).

*Increasing the employability of the non-employed would bring significant macroeconomic benefit.*

**Figure 3.13: International employment and unemployment rates, 2006**



Source: [http://www.statistics.gov.uk/elmr/02\\_07/downloads/Table2\\_20.xls](http://www.statistics.gov.uk/elmr/02_07/downloads/Table2_20.xls)

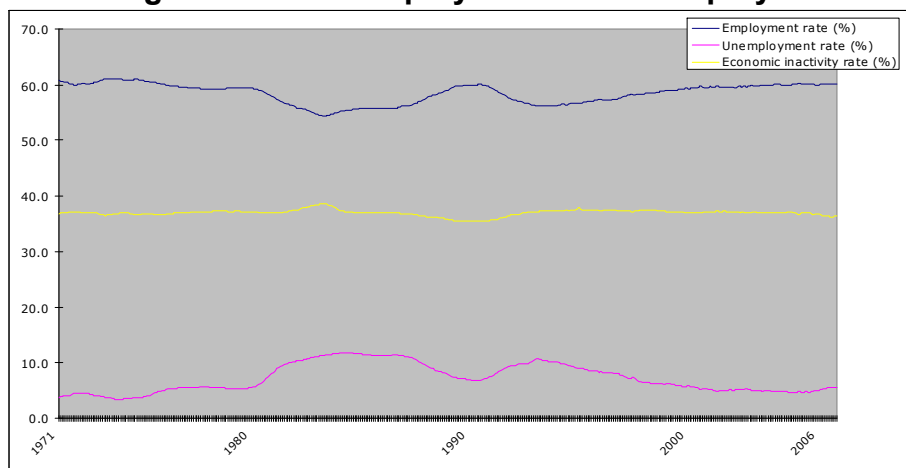
3.96 The Welfare to Work programme is based on a recognition that a set of inter-related policies are required to get people back into work, especially so where they face multiple disadvantage. These are based around increasing the incentives to work, increasing the rewards of working, and supporting people in finding work. The Budget in 2007 announced steps to implement the Leitch Review and ensure that support was not confined to helping someone into work, but should be extended to assisting them to stay in and progress in work. This will require the LSC and Jobcentre Plus to work closely together to ensure that low-skilled individuals obtain the skills that will allow them to develop a career.

*Lack of skills is often found in conjunction with other labour market disadvantage.*

3.97 In general, over recent years, Welfare to Work policies and measures have been successful in raising employment rates of most target disadvantaged groups closer to the average of all working age people. (The exception is the unqualified whose employment rate has declined in relation to that of the qualified: see Chapter 5.) Nevertheless, despite these successes, measures of economic inactivity show a degree of constancy (see Figure 3.14). Most recently this has prompted further consideration of how to increase labour supply from the long-term unemployed and economically inactive. The Leitch Review had much to say about this in relation to skills, highlighting the possible trade-offs between equity and efficiency. More pertinent to labour supply in general, rather than skill supply in particular, is the Freud Report.

*Leitch recommends increasing labour supply from the non-employed.*

**Figure 3.14: Long run trend in employment and unemployment rates**



Source: [http://www.statistics.gov.uk/elmr/02\\_07/downloads/Table2\\_01.xls](http://www.statistics.gov.uk/elmr/02_07/downloads/Table2_01.xls)

## The Freud Report

- 3.98 The Freud Report looked at how labour supply might be boosted to achieve an employment rate of 80 per cent: a rise of around 20 percentage points. How this might be achieved is very much based around assisting the most disadvantaged into work – a group described as having “complex and demanding” problems. Freud recognises that low skills are part of the problem but are far from being the whole problem. For those who lack qualifications, skills or work experience, worklessness is often associated with other aspects of disadvantage that limit their capacity to enter employment.
- The Freud Report examined how labour supply might be boosted to achieve an employment rate of 80 per cent.*
- 3.99 Freud’s recommendations in many respects are concerned with the mechanisms that will assist the disadvantaged to move into work from benefits – such as the role of Jobcentre Plus, personal advisors, skills coaches, etc. The report also, however, draws attention to the barrier to employment that a lack of basic skills (literacy and numeracy) creates for many people. The report re-emphasises Leitch’s view that policy needs to go much further than just helping people find a job. In relation to basic skills the Leitch Review set ambitious goals – given prominence in the Freud Report – that 95 per cent of adults should have basic skills and 90 per cent should be qualified to Level 2 by 2020.
- Freud’s recommendations focus on the unqualified and low skilled.*
- 3.100 So far the discussion has been concerned with how to increase labour supply, principally from those groups which face formidable barriers to entering work. The next section considers in greater detail policies to improve skills supply. This relates not just to the more disadvantaged in society, but to the population generally.

## The Skills Strategy

- 3.101 The Government’s Skills Strategy was set out in two White Papers: *21<sup>st</sup>-Century Skills: Realising Our Potential* (2003) and *Skills: Getting on in business, getting on at work* (2005). These White Papers provided the base for subsequent developments in policy. The core elements of the Skills Strategy are:
- Core elements of the Skills Strategy are set out in the White Paper.*
- a partnership-based approach between government, providers, employers and individuals;
  - ensuring that employers have a stronger voice in shaping the supply of training and that



provision be demand-led;

- supporting individuals through better information and guidance;
- helping all adults to gain the functional skills of literacy, language and numeracy and develop wider employability skills;
- establishing that first full Level 2 qualifications are publicly funded;
- tackling the obstacles that people face in gaining fair access to training and jobs, including the barriers between welfare and work;
- encouraging the role that trade unions play in addressing skills needs and raising demand for training;
- building on the existing strengths of universities, colleges and training providers.

3.102 The Skills Strategy also set out the Government's measures of success:

*The Skills Strategy also sets out measures of success.*

- to increase substantially the proportion of 14 to 19 year olds achieving full Level 2 qualifications;
- to increase educational participation at age 17 from 75 per cent to 90 per cent over the next 10 years;
- to increase the proportion of 18 to 30 year olds benefiting from HE towards 50 per cent;
- to increase by 75 per cent, between 2002/03 and 2007/08, the numbers successfully completing Apprenticeships;
- to help low-skilled adults to improve their literacy, language and numeracy, and achieve the platform of employability skills. The aim is for 2.25 million adults to achieve functional competence in literacy, language and numeracy, and over 3 million adults to achieve their first full Level 2 qualification by 2010.

Writ large throughout the Skills Strategy was a commitment to provide employers with a strong voice in determining skills supply.

## Recent Developments in Skills Policy

3.103 Since the Skills Strategy White Papers were published there have been a number of further developments:

- DfES intends to introduce a Diploma qualification for 14-19 year olds based around general education and applied learning;
- the Leitch Review has given further impetus to the need to raise skills supply, suggested challenging new targets, and proposed re-organisation of the institutions charged with responsibility for delivering the Skills Strategy;
- the Foster Report, and subsequent White Paper on the FE sector, suggests how this sector might more effectively contribute to raising skills supply;
- rolling out Train to Gain.

*There are a number of other new initiatives relating to skills....*

3.104 Related to the Skills Strategy are developments in the qualification system for 14-19 year olds. One of the major reforms currently taking place is the design and introduction of Diplomas that will give young people an alternative to traditional specialist academic learning by offering general education and applied learning. It is intended that Diplomas will provide young people with the basis for further progression to further or higher education, or into employment. The first diplomas to be introduced by September 2008 will be in (i) IT; (ii) Society, Health and Development; (iii) Engineering; (iv) Creative & Media; and (v) Construction and the Built Environment.

*...including reforming the qualifications system and introducing new Diplomas.*

3.105 The Leitch Review – *Prosperity for All in the Global Economy: World Class Skills* – sets out what the country must do to compete in an increasingly global market where the country's main competitors are improving their capabilities, and fast-developing economies such as India and China provide increased competition to existing markets. In many respects Leitch's target is how to improve employers' demand for, and utilisation of, the skills available to them: Chapter 2 considered this issue in greater detail. Nonetheless, because many of the public policy levers are essentially supply side ones, Leitch also has much to say about improving this too.

3.106 In relation to the supply side Leitch makes the following recommendations:

*Leitch made a number of recommendations relating to the supply of skills.*

- increasing skill levels so that by 2010:
  - 95 per cent of adults to achieve the basic skills of functional literacy and numeracy, an increase from levels of 85 per cent in literacy and 79 per cent numeracy in 2005;
  - more than 90 per cent of adults qualified to at least Level 2, an increase from 69 per cent in 2005;
  - the balance of intermediate skills to be shifted from Level 2 to Level 3 – 1.9 million additional Level 3 attainments over the period – and boosting the number of Apprentices to 500,000 a year;
  - more than 40 per cent of adults qualified to Level 4 and above, up from 29 per cent in 2005, with a commitment to continue progression and increase adult skills across all levels;
- route all public funding for adult vocational skills in England, apart from community learning, through Train to Gain and Learner Accounts by 2010;
- strengthen the employer voice and increase employer engagement and investment in skills principally through empowering the Sector Skills Councils (SSC);
- increasing employer investment in skills. A new ‘pledge’ for employers to commit voluntarily to train all eligible employees up to Level 2 in the workplace and increasing employer investment in Level 3 and 4 qualifications in the workplace;
- extend Train to Gain to Level 3 qualifications;
- improve engagement between employers and universities, increase co-funded workplace degrees, and increase focus on Level 5 and above skills (see the Lambert Review discussed in Chapter 2);
- increase people’s aspirations and awareness of the value of skills to them and their families.

It is evident from this list that Leitch has set challenging new goals for those charged with delivering the skills strategy.

3.107 Implementing both the Skills Strategy's and Leitch's ambitious targets is dependent upon an effective infrastructure capable of delivering the levels of participation and educational attainment specified. FE has a major role to play. But it has been an area of weakness in the system, insofar as a relatively low proportion of young people continues into post-compulsory education compared to other OECD countries (OECD, 2006). Over the years FE has been subject to much investigation and reform, with the emphasis upon how the FE sector can be more effectively utilised.

3.108 The 2006 White Paper *Further Education: Raising Skills, Improving Life Chances* suggested that a number of reforms will take place in FE. These include:

- that provision in FE should have a clear economic focus (i.e. be demand led);
- developing a clear mission for FE based around employability and progression of learners;
- setting up learner accounts to help people gain Level 3 qualifications;
- subsidised training to help young people gain a Level 3 qualification up to the age of 25 years;
- rolling out Train to Gain which places employers at the centre of determining training needs.

Following a period of consultation, these reforms are designed to bring about substantial improvements in FE provision by 2008.

3.109 Both Leitch and the demand-led consultation place considerable weight upon Train to Gain to deliver substantial improvements in skills supply. Based on the Employer Training Pilots that were piloted during 2004/05, Train to Gain will provide employers with partially subsidised training, leading to a Level 2 or 3 qualification for employees. Alongside Train to Gain, engagement in training will be facilitated through Learner Accounts. These will begin trials in September 2007.

3.110 Train to Gain emphasises the role of training in meeting an employers' business needs – whilst at the same time providing the employee with a nationally-accredited qualification encompassing transferable skills – at Levels 2 and 3. In summary, Train to Gain

*The 2006 White Paper Further Education: Raising Skills, Improving Life Chances suggested that a number of reforms will take place in FE.*

*Both Leitch and the demand-led consultation place considerable weight upon Train to Gain to deliver substantial improvements in skills supply.*

providers employers with advice, provided through a broker, who will:

- identify the employer's skills needs in relation to their business needs;
- identify the training required;
- agree a training package with the employer;
- find available funding and
- review progress over time.

The funding available might include:

- fully-funded training to assist employees gain a full Level 2 qualification or a Skills for Life first numeracy and literacy qualification;
- wage compensation to cover the costs of the employee when training (for employers with fewer than 50 employees);
- funded training to NVQ Level 3 and above.

Train to Gain is a departure from previous training initiatives in the emphasis it places upon the broker assessing the skills that will meet business needs and then designing an appropriate package of training that will benefit both employer and employee.

3.111 Foundation Degrees (FDs) aim to achieve a similar role in relation to Level 4 skills. They allow a degree to be tailored to an employer's business needs but accredited by an HE institution. FDs were introduced in 2001 and as of 2004/05 around 47,000 people were studying towards such a qualification.<sup>6</sup> For employers, research evidence suggests that FDs are beneficial because they provide theoretical training that relates directly to the company's needs - FD students solved problems that were applicable to their day-to-day jobs (Hogarth *et al.*, 2007). FDs were recognised by employers as an important source of training to assist with their employees' career development.

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<sup>6</sup> <http://www.foundationdegree.org.uk/institutions/index.shtml>

## Conclusion

3.112 The focus of the debate on the supply of skills over recent years has been to ensure the economy has the skills available to meet business needs – however defined – and provide individuals not only with the skills that will make them employable, but to allow them to progress in education and training as far as they wish to. Over the past thirty years there have been substantial advances, not only in levels of educational attainment but in providing individuals with a number of pathways through the FE system. Hence the increasing importance of providing guidance to individual learners.

3.113 The system of skills supply in England has many strengths that are highlighted above:

- continued increases in attainment;
- improvements in ‘success rates’ – *i.e.* people actually obtaining the qualifications for which they were studying;
- opportunities for people to re-enter the FE system later in life if necessary.

But there are a number of weaknesses too, some of which have been longstanding:

- relatively poor progression rates into continued education amongst 16-17 year olds;
- concern about the operation of the FE sector and whether this is providing a sufficient service;
- a relatively high proportion of workplace-based training being of short duration.

3.114 A number of policy initiatives over the period 2005 to 2007 have been seeking to remedy weaknesses in the FE system: the introduction of Train to Gain, reform of the FE sector, and setting more challenging targets – especially in relation to the employment rate.

# Chapter 4: Mismatches in Supply and Demand

## Overview and Summary

- 4.1 Over the past twenty years or so there have been substantial changes in the demand for, and the supply of, skills. Factors such as structural change in the economy, increased ICT use, and higher levels of competition – as detailed in Chapter 2 – have resulted in both different and higher levels of skill being required in many jobs (Felstead *et al.*, 2007). Over the same period there has been a transformation of the supply side; not just increased participation in HE, but much wider ranging changes to the structure and content of secondary level education including the introduction of new vocational qualifications. Given the level and pace of change on both demand and supply sides, has the latter been able to meet the needs of the former? This is an important issue. Over the 1970s and 1980s, skill shortages were demonstrated to both contribute to economic slowdown and inhibit growth during the recovery phase (Blake *et al.*, 2000).
- 4.2 This chapter looks at the extent of mismatch – or imbalance – between the supply of, and demand for, skills. In an economy experiencing growth and a modest degree of structural change, imbalances are likely to occur simply as a consequence of supply needing time to adapt to changes on the demand side. The key question is whether this happens fast enough and, if not, what constraints it places on economic growth. Moreover, mismatches indicate, better than any other measure, where future investments in skills need to take place.
- 4.3 The chapter provides a review of the latest evidence on mismatches based around:
- Relative wage levels -
- i. an examination of wage levels by occupation: where skills demand outstrips skills supply this should be reflected in relatively high rates of wage increase;
  - ii. the rates of return attached to obtaining a given qualification: again, where people with a qualification are in high demand this should be
- This chapter examines the extent of mismatch between the demand for, and supply of, skills.*
- Evidence related to relative wage levels and employers' unmet skill needs is presented.*

reflected in higher levels of income associated with its possession over the individual's lifecycle.

Employers' unmet skill needs -

- iii. the extent to which employers find it difficult to recruit the people they need from the external labour market, reflected in the number of hard-to-fill and skill-shortage vacancies reported by employers;
- iv. the extent to which employers report that their existing workforce lacks the skills necessary to meet their business needs, measured by the number of skill gaps.

4.4 There is now a comprehensive body of evidence which reveals a positive rate of return to the acquisition of skill. Occupations with relatively high skill content are associated with higher wage levels, a wage premium is attached to each additional year of education (though there may be diminishing returns at post-graduate level), and employers benefit from their investments in training. These are stylised facts and there are exceptions and uncertainties as detailed below.

*A comprehensive body of evidence reveals a positive rate of return to skill acquisition.*

4.5 The exceptions and uncertainties relate to:

- Level 1 and 2 qualifications, where some research shows positive rates of return to the individual investing in them, whilst other studies do not. There is a complication here insofar as these qualifications are often a step towards the next level of qualification;
- academic qualifications, which generate higher returns than vocational ones, especially new vocational qualifications;
- subject or discipline of study. Higher education graduates in subjects such as maths, engineering and medicine appear to earn more than their counterparts in the social sciences and humanities (Canny *et al.*, 2003; Purcell and Elias, 2006). There may well be a similar effect in post-secondary education and training;
- the extent to which employers fully benefit from their investments in training or whether the return is absorbed by employees through receipt of higher wages.

*There are exceptions and uncertainties related to the finding of positive returns.*



- 4.6 There is also a degree of uncertainty about the consequences of imbalances: to what extent do they slow the economy, what is their impact on productivity, and how do they affect wage inflation? The National Employers Skills Survey (NESS) series reveals that skill shortages and gaps inhibit organisational performance; but research has not been able, as yet, to systematically estimate these effects at a macro-level. Overall, the evidence suggests that supply and demand, at a macro-level, are broadly in equilibrium based on the high and stable rate of return from obtaining higher level skills. But there remain parts of the economy where skill shortages are relatively severe – in some industrial sectors, occupations and localities – and these are likely to have an impact upon economic development.
- There is some uncertainty regarding the consequences of imbalances.*
- 4.7 Finally, there are latent skill shortages to consider. Comparative international research demonstrates that England lags behind other countries – in selected ways – in the development of human capital formation because employers, individuals or the State have not sufficiently recognised the nature or scale of both current and future skill needs. This, in turn, leads to some sectors of the economy becoming locked into a low-skill trajectory, with long-term consequences for the survival and growth of the companies involved (Wilson and Hogarth, 2003; Collier *et al.*, 2007).
- 4.8 Overall, the evidence reveals that, for both individuals and employers, there is a benefit from investing in education and training. For the individual it is demonstrated in higher wage levels; for the employer the benefit lies in improved productivity and business performance. The benefits to the State are to be found not just in improved national economic performance, but also in a number of non-pecuniary benefits to society.
- The evidence shows that there are benefits arising from investment in education and training.*

## Introduction

4.9 This chapter is concerned with the mismatch between the supply of, and the demand for, skills. It consists of the following elements:

- an overview of how mismatches are measured;
- a discussion of wage differentials based on information from the Annual Survey of Hours and Earnings (ASHE) which replaced the New Earnings Survey in 2005;
- an examination of the returns to education and training with a review of recent evidence relating to individuals;
- a summary of the returns to employers from investing in skills and training;
- a discussion of over- and under-qualification with evidence from the latest *Skills at Work Survey*;
- an exploration of recruitment problems based on information from National Employers Skills Surveys (NESS) and other sources where available;
- a discussion of skill gaps within the workplace, also drawing on NESS.

Wherever possible international comparisons are provided.

## How to Measure Mismatches

4.10 As there is no direct measure of mismatches between the demand for, and supply of, skills, inferences about the balance between the two are typically made by observing changes in relative pay levels for various occupations. Rapidly rising wage levels amongst a particular occupation will reflect high demand for the skills associated with that occupation. This assumes that employers respond to difficulties in finding the skills they need by increasing wages. In reality, not all employers respond in this way to an excess demand for skills. Regulation regarding pay, collective bargaining and job-related risk factors will also affect wage rates, and non-wage incentives, including training, may be offered to potential employees to attract them to an

*Observing trends in wages for various occupations is a common method of measuring skills mismatches.*

organisation. There is also a more general question about the extent to which wage levels are responsive to the market. Evidence suggests that nominal wage rates are relatively more responsive in the UK than elsewhere, but this might be little more than a reflection of the demand for overtime (Pissarides, 2003).

- 4.11 Estimating rates of return from obtaining a qualification, where qualification is used as a proxy measure for skill, is another approach. If the returns to a skill or set of skills are found to be greater than the cost of obtaining these skills, then one can infer that demand for that particular skill or skill set is greater than the available supply. Typically, rates of return on investment in higher level qualifications have been relatively high in the UK, indicating an excess demand for such skills; but the evidence is a little more uncertain in relation to lower levels, especially vocational qualifications. In practice, a comparison of costs and returns is far from straightforward, especially where skills are informally acquired or non-accredited.
- Rates of return on investment in higher level qualifications have been relatively high in the UK.*
- 4.12 Employers' responses to surveys about their skill needs also help to identify areas where demand and supply are not in equilibrium. Employer surveys provide a starting point for identifying mismatches, but they may also reflect other problems in the business such as organisation and management issues.
- Employer surveys are also used to identify mismatches.*
- 4.13 In practice, there is a need to use a variety of complementary methods to identify skill mismatches. The evidence that follows is based on the range of approaches described above.

## Who Earns Most?

- 4.14 Occupation provides a proxy measure for skill. This section looks at wage differentials by occupation using data from the Annual Survey of Hours and Earnings (ASHE). Analysis of wage differentials by occupation may not necessarily reflect relative levels of skills because the determinants of wage levels are not exclusively related to skill or ability, and are likely to reflect a number of socio-political factors in the workplace.
- Analysis of wage differentials by occupation may not reflect skills.*

- 4.15 Data from ASHE reveals that managers earned the highest median gross weekly wages in 2006: £632 a week. Professionals earned the highest hourly wages of £18.52 an hour compared with £16.84 for managers. Sales and customer service occupations had the lowest median gross weekly wages of £168 a week (ONS, 2006).
- 4.16 *Table 4.1* shows the highest and lowest paid occupations, at a more detailed level, in 2006. Ranking occupations according to gross weekly wage results in few differences in the top and bottom 10 jobs from 2005 to 2006. In general, the changes between 2005 and 2006 reveal little more than a shuffling of jobs within broad occupational categories. The main finding is the way in which wages accord to an occupational hierarchy: skilled managerial and professional jobs are the best paid; relatively low-skilled personal service and elementary jobs are the worst paid.

**Table 4.1: Highest and lowest paid occupations, 2006**

Rank 2006	Rank 2005	Occupation	Gross weekly wage 2006 (£)
<b>Highest paid</b>			
1	(1)	Directors and chief executives of major organisations	1,811.30
2	(2)	Medical practitioners	1,231.50
3	(4)	Senior officials in national government	1,201.50
4	(3)	Aircraft pilots and flight engineers	1,129.40
5	(5)	Financial managers and chartered secretaries	1016.5
6	(6)	Police officers (inspectors and above)	974.9
7	(8)	Brokers	970
8	~	Air traffic controllers	967.3
9	(7)	Managers in mining and energy	907.8
10	~	Senior officials in local government	879.6
<b>Lowest paid</b>			
1	(6)	Leisure and theme park attendants	207.8
2	(9)	Floral arrangers, florists	209.3
3	(5)	Bar staff	214.4
4	(2)	Elementary personal services occupations n.e.c.*	217.7
5	(4)	Hairdressers, barbers	219
6	(3)	Waiters, waitresses	219.9
7	~	Market and street traders and assistants	221.1
8	(7)	Retail cashiers and check-out operators	226.2
9	(8)	Kitchen and catering assistants	229.6
10	(10)	Launderers, dry cleaners, pressers	237.9

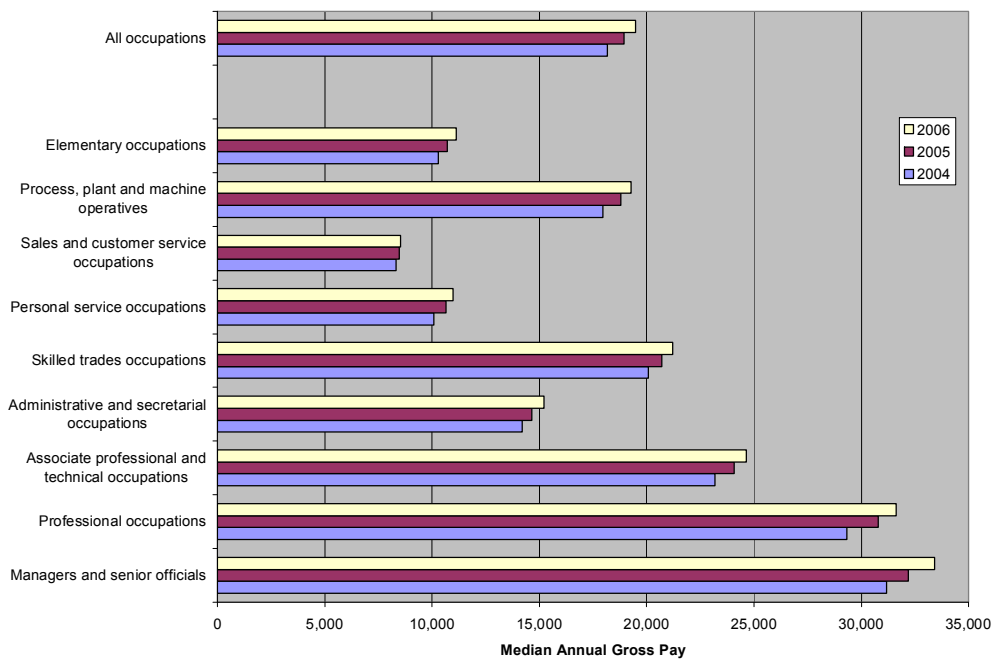
**Source:** ONS (2006) *2006 Annual Survey of Hours and Earnings*: (<http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=14123>).

**\*Note:** n.e.c. = not elsewhere classified.

4.17

*Figure 4.1* compares median annual earnings in the major occupational groups from 2004 to 2006. Over the last three years, managers and senior officials have earned more than the other major occupations. Skilled trade occupations, associate professionals and technical occupations, and professional occupations also received more pay than the average for all occupations. Sales and customer service occupations were the lowest paid in all three years.

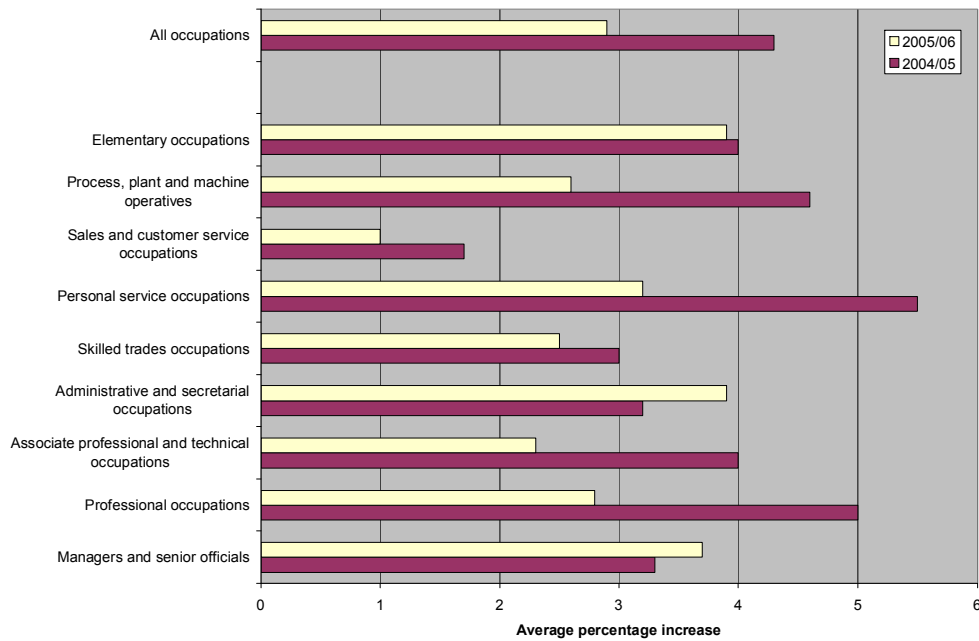
**Figure 4.1: Median earnings 2004–2006**



**Source:** ONS (2006) 2006 Annual Survey of Hours and Earnings

4.18 The annual percentage changes in median gross annual pay by occupation for 2004/05 and 2005/06 are presented in *Figure 4.2*. In all occupations, except administrative and secretarial, and managers and senior officials, the change in annual pay was lower in 2005/06 than in 2004/05. The largest percentage changes in 2005/06 were observed for elementary, and administrative and secretarial occupations. The smallest change occurred for sales and customer service occupations in both periods.

**Figure 4.2: Percentage change in median gross annual pay, 2004–2006**



**Source:** ONS (2006) 2006 Annual Survey of Hours and Earnings

# Returns to Education, Training and Skills

## Economic theory

- 4.19 Before providing findings about the returns to education and training it is worth considering the economic theory that underlies their measurement and interpretation. Human capital theory is the dominant economic theory related to wage determination and rates of return (Mincer 1957, 1958, 1962; Schultz, 1960, 1961; Becker 1962, 1964).
- 4.20 Human capital theory views education and training as investment goods rather than consumption ones. As consumption goods, people might undertake study for pleasure, but given the costs of education and the returns to qualifications, education and training is more readily seen as an investment in human capital. *Human capital theory treats education and training as investment goods.*
- 4.21 One of the implications of human capital theory for workers is that for an individual to be willing to meet the costs of education (tuition, forgone earnings, and so on) that worker must be compensated by sufficiently high future lifetime earnings. Additionally, for educated workers to obtain higher earnings, they must be more productive in the workplace than their less-qualified colleagues. If the marginal product of a skilled worker is not greater than that of an unskilled worker, then employers will not be compelled to pay higher wages to the skilled.
- 4.22 A common alternative to the ideas presented by human capital theory is the 'screening hypothesis'. This is also referred to as signalling or sorting (Spence, 1973; Arrow, 1973; and Stiglitz, 1975). The screening hypothesis suggests that education does not improve the productivity of workers but, instead, education signals intrinsic productivity to employers. Employers infer that job applicants with higher levels of education tend to have more desirable qualities and lower propensities to quit or be absent from work. Individuals who undertake additional study may also be more able and motivated than their less-educated counterparts. Such behaviours and characteristics are appealing to employers. As employers are usually unable to directly observe absence of undesirable lifestyle habits and inherent ability *The 'screening hypothesis' is an alternative to human capital theory.*

when considering an applicant for a position, the employer may then treat a potential employee's educational qualifications as a signal of underlying qualities. Thus, level of education is used to screen potential employees for unobserved characteristics.

- 4.23 From the point of view of an individual considering investment in education, there is no difference whether the screening hypothesis or human capital theory is valid. If the screening hypothesis reveals the true underlying process, then individuals may be able to anticipate employer behaviour and become educated to a level that reflects their own ability and underlying characteristics. Under either theory, the return to education is the same for the individual. For the public or social returns to education, these are lower if the screening hypothesis is valid rather than human capital theory. The actual public return to education is of particular importance when the government provides or subsidises education.
- An individual is indifferent to whether human capital theory or the 'screening hypothesis' is truly at work. The returns to education for society are lower if the 'screening hypothesis' holds.*

### Methods of estimating rates of return to education

- 4.24 In recent years there has been extensive research into the benefits of investment in education and training for individual pay levels. This has focused both on rates of return to such investments, and the wage premiums associated with possession of different qualifications. The former takes into account the full costs of acquiring qualifications (primarily earnings forgone during the period of education and training, but also other costs such as tuition fees). The latter, which is much more common, focuses on the increase in earnings associated with qualifications or additional years of education (holding all else equal). Both measures show significant benefits to the individual of acquiring formal qualifications, especially at higher levels.
- 4.25 The statistical earnings function or wage equation is commonly used to estimate the private returns to education or training (Mincer, 1974). *Box 4.1* presents the algebraic formulation and other technical details of this function.
- The statistical earnings function or wage equation is commonly used to estimate the private returns to education.*



#### Box 4.1: The earnings equation

Estimates of the private returns to years of schooling or particular qualifications can be obtained from estimation of regression equations known as statistical earnings functions. The usual functional specification includes the logarithm of (hourly) wages as a function of a number of personal characteristics including number of years of schooling or dummy variables to indicate whether or not an individual possesses a particular qualification.

A specification of the statistical earnings function is:

$$\ln w_i = \alpha + \beta_1 S_i + u_i$$

where  $\ln w_i$  is the natural logarithm of the hourly (or monthly) wage for individual  $i$ ,  $\alpha$  is a constant or baseline level of log wages for an individual with no schooling,  $S_i$  is the number of years of schooling completed by the individual (or a dummy variable indicating possession of a particular qualification), and  $u_i$  is a random error term.

The estimated coefficient,  $\beta_1$ , associated with the schooling variable indicates the percentage change in wages attributed to an additional year of schooling a person has over another with the same personal characteristics but no qualifications. The coefficient for the qualification dummy variable will indicate the returns to having a particular qualification compared to someone with no qualifications.

Indicators of age, work experience, region, and other personal characteristics are usually included on the right-hand side of the wage equation. The statistical earnings function will also contain explanatory variables indicating work experience (or age), ability, gender, and other personal characteristics. Dummy variables for private or public sector, union membership, occupation and industry are also often included.

4.26 Many estimates of the private returns to education use cross-sectional individual level data on wages, education and the other personal characteristics that are included in the functional form of the wage equation. Longitudinal, or panel, data are more useful for investigating the private returns to education as such data allow for the use of various techniques which can account for individual-level differences as well as examine changes in returns over time and changes in education for the same individual.

4.27 A number of methodological issues arise in estimating the returns to education. Some of these are presented in detail in *Box 4.2*.

4.28 The statistical earnings function does not consider non-monetary private benefits nor public and social benefits of education when used to estimate the returns to qualifications or years of schooling. Positive relationships between education and health, health of family members, schooling of children and crime reduction have been found (Owens, 2004). Other benefits include the possibility of productivity spillovers to other workers as well as expansion of technological possibilities (Eraut *et al.*, 2002, Green, Preston and Sabetes, 2003).

*The wage equation does not consider non-monetary private benefits nor the social or public benefits of education.*

#### Box 4.2: Issues in the measurement of returns to schooling

A number of methodological issues involved in the estimation of the returns to education/training have been identified by a number of authors (for example, Griliches 1977, Psacharopoulos and Patrinos 2004). A short description of the main concerns follows:

**Ability Bias:** it is widely believed that education and ability are positively correlated. Thus omitting ability from a wage equation would result in the estimated returns to schooling/education being upwardly biased. One approach to overcome this problem is to include an indicator of ability, such as IQ scores, in the specified wage equation, but data reflecting ability are not always readily available. An alternative approach is analysis of data for identical twins who, by definition, have the same innate level of ability.

**Omitted Variables:** there are a number of other variables that may be inadvertently (or intentionally) omitted from a wage equation. Education quality is an example of a factor that might reasonably be expected to influence earnings and the returns to education, but this variable is often left out of the specification due to lack of data related to quality.

**Selection:** in estimating wage equations, the sample used is not representative of the population in general. Only data on wage earners can be included in estimating earnings functions, as it is only for such people that wages are actually observed. This necessitates the omission of people who are unable to find employment, as well as those who have justifiable non-financial reasons for not engaging in the labour market. Overcoming potential sample selection bias can be dealt with in statistical analyses (Heckman, 1979).

**Other issues:** the majority of studies into wage returns to education utilise cross-sectional data. Panel data has an important advantage over cross-sectional data in that it allows for the study of the same individuals over time.

### Returns to individuals

4.29 There is now a great deal of evidence on the returns to education and training to the individual. Though a variety of data sources and methods have been used to estimate the relative benefits of obtaining an extra qualification or staying on in education for another year, a number of common findings emerge:

*A large body of evidence on the returns to education and training to the individual exists.*

- the return to adults participating in formal learning, in terms of the distribution of hourly pay, is significant and progressive, beyond NQF Level 2 (HM Treasury, 2005);
- returns below Level 2 are often zero or negative;
- returns are higher to academic rather than vocational qualifications (Dickerson and Vignoles, 2007);
- there are positive returns to obtaining generic skills (numeracy and literacy, IT, management).

Overall, the evidence suggests that, whilst the returns are highest for NQF Level 3 and above,

there is a significant pay premium for Level 2 qualifications, as well as for basic literacy and numeracy. It also needs to be borne in mind that Level 1 and Level 2 qualifications are often stepping stones to obtaining further qualifications.

4.30 Rather than repeat the findings from the various studies, many of which are reported in previous editions of *Skills in England*, the following section highlights the latest research that sheds new light on the relative benefits of education and training to the individual, and indicates where mismatches are occurring. The discussion starts with the returns to higher education (HE) and then looks at the evidence for other levels.

4.31 In general, obtaining an HE qualification is associated with a relatively high wage premium. On average, graduates earn 53 per cent more than those with an upper secondary school education (that is, more or less equivalent to obtaining 'A' levels). Of interest, however, is the change in the rate of return, especially given the increased numbers obtaining a degree each year. The *Class of '99* followed the early careers of over 9,000 people who graduated in 1999 (Purcell *et al.*, 2005). It is then possible to compare the experiences of the 1999 graduates with those who participated in one of the earlier longitudinal studies, *Moving On*, which followed those who graduated in 1995 (Elias *et al.*, 1999).

*A relatively high wage premium is gained from having an HE qualification.*

4.32 The data show that the real earnings in 2003/04 of those who graduated in 1999 had not kept pace with the earnings of those who had graduated in 1995, after a similar period of time in the labour market.

4.33 The figures in *Table 4.2* show the earnings differences between the two cohorts by gender when a number of factors have been controlled for (such as type of higher education institution attended, subject studied, entry qualifications, age, ethnic background, private or public sector). This table shows that 3.5 years after graduation, real annual earnings were 8.5 per cent lower for 1995 female graduates than for male graduates of that year. Similarly, in comparison to the annual real earnings of male 1995 graduates 3.5 years after graduation, the annual real earnings of 1999 graduates four years after graduation were 10.6 per cent lower for men and 18.6 per cent lower for

women. This confirms that there has been a real decrease in the earnings of 1999 graduates compared to 1995 graduates. The earnings of the later cohort have not only failed to keep pace with the earnings of their 1995 counterparts, but also, their earnings have not kept pace with earnings increases in the economy as a whole. The authors comment:

*“...it may be the first indication that the graduate earnings premium, which in the UK is high by international standards, is beginning to reflect a decline in the excess demand for graduate skills and knowledge that has characterised the situation prevailing through the 1990s.”*

**Table 4.2: Difference in real annual earnings of 1995 and 1999 graduates in full-time employment 3.5 to 4 years after graduation, by gender**

	Relative difference in real earnings 3-4 years after graduation	Standard Error	Level of Significance
1995 graduate, male	reference category		
1995 graduate, female	-8.5%	0.7%	5%
1999 graduate, male	-10.7%	0.9%	5%
1999 graduate, female	-18.6%	0.8%	5%

**Source:** Purcell *et al.*, 2005

**Base:** Graduates in full-time employment 3.5 years (1995 graduates) or 4 years (1999 graduates) after graduation.

**Note:** Other variables included in the model are: type of higher education institution attended, subject studied, method of study, further qualifications obtained, entry qualifications, age, class of degree obtained, work-limiting disability, measure of work motivation, whether or not a degree was required for current job, size of organisation, whether current job is in private, public or voluntary sector, ethnic background, sector of current job and the cumulative number of months employed between gaining first degree and the time of the interview.

- 4.34 The results above show differing returns to graduation according to gender, but there are other differences too, especially by subject of study. Graduates with degrees in Maths and Computing, and Engineering and Technology have done well in rates of return, while there has been greater moderation in the financial rewards for Arts graduates (O’Leary and Sloane, 2005). *The returns to a degree differ by gender and subject of study.*
- 4.35 It is possible to widen out the discussion to look at the wage premiums attached to other levels of qualification. A recent study looking at wage levels associated with different levels of qualification reported that (Dickerson, 2005):

- returns to academic qualification are higher than vocational ones at every level except Level 5;
- the returns to vocational qualifications at Levels 1 and 2 are negative, and low at Level 3;
- returns to academic qualifications at Level 1 are zero, but increase rapidly thereafter;
- there are increasing returns to higher vocational qualifications, so that by Level 5 they are greater than academic ones.

*A wage premium is attached to a number of qualification levels and higher qualifications also increase the probability of being in employment.*

The analysis also reveals that the higher the qualification attained, the higher the probability of being in employment.

4.36 Longitudinal research shows that an additional year of education contributes a 6.6 to 8.3 per cent increase in wages for men and 5.9 to 6.3 per cent for women. It needs to be borne in mind that it is not just about rates of return in the narrow sense: higher levels of educational attainment increase labour market participation, reduce the chance of being unemployed and, consequently, contribute to social cohesion and economic growth (Heinrich and Hildebrand, 2005).

4.37 The type of qualification is important. Whilst the overall rate of return is between 10 per cent and 15 per cent for an additional year of schooling, this varies by type of qualification (Powdthavee and Vignoles, 2006). Returns to vocational qualifications are lower than the returns to academic qualifications and even lower for newer vocational qualifications, but all types of qualification increase the probability of being in employment (Conlon, 2005; Powdthavee and Vignoles, 2006).

*Returns to vocational qualifications have been found to be lower than the returns to academic ones.*

4.38 Who provides training and whether or not it is accredited also determine the return obtained. Employer-provided training results in greater returns than self-financed training (Powdthavee and Vignoles, 2006; Booth and Bryan, 2005). Moreover, accredited rather than non-accredited training is associated with higher wages (with the current employer the returns are 1.91 per cent if accredited and 0.75 per cent if non-accredited), and is more transferable between employers. The wage return to employer-financed training is 2.4 per cent if obtained with the current employer and because the benefits of training are accrued over time during

which individuals might have moved onto a new job – 7.8 per cent with the previous employer (Booth and Brian, 2005). There is also evidence that the returns to work-based training are greater for individuals in the public rather than the private sector (Murphy *et al.*, forthcoming).

4.39 Obtaining a qualification is also a determinant of access to continuing education and training. Participation in training is positively associated with having a recognised vocational qualification (Almeida-Santos and Mumford, 2005; Conlon, 2005). In addition, those who already have an academic qualification are more likely to undertake further academic qualifications compared to their vocational counterparts.

*Qualifications influence access to continuing education and training.*

4.40 It is not just about rates of return – possession of qualifications also improves employability. A variety of studies find that education has a positive effect on labour force participation and reduces the probability of unemployment (Heinrich and Hildebrand, 2005). And it is not just about the benefits to young people continuing in post-compulsory education and training – late learning may have little impact on earnings but can have a large impact on employment (Conlon, 2005). Studies show that higher-skilled workers face shorter unemployment duration and have lower dismissal probabilities (Stahler, 2005).

### Returns to employers

4.41 The evidence about the returns employers obtain from investing in training and skills is a little more uncertain, with a wide range of studies revealing sometimes inconsistent findings. More evidence is now coming to light about the benefits to employers from engaging in training and skills development. Initially, research evidence tended to indicate that the main beneficiaries of training/skills development within the workplace were employees through increased wages (Bosworth, 2005; Booth *et al.*, 2003). Other evidence, from the USA, casts doubt on the relationship between training and productivity in the manufacturing sector (Lynch and Black, 2001). More recent evidence, however, has begun to reveal a positive relationship between training and firm performance (Collier *et al.*, 2007). If wage increases accrue to employees, then this necessitates, over the medium to long term, organisational productivity at least as great as the

*More evidence regarding the benefits to employers from engaging in training and skills development is emerging.*

increase in wages to the employees.

- 4.42 A series of studies on the costs and benefits of training people to NQF levels 2 and 3 under Apprenticeship frameworks indicated that the employers' net costs of training in areas such as construction and engineering were substantial, and only recouped in the longer term if the employer could retain the trainee once trained (Hogarth *et al.*, 2005; Hogarth and Hasluck, 2003; Hogarth *et al.*, 1998; Hogarth *et al.*, 1996). In many respects employer commitment to training and skills development is often based on belief, or what they consider to be self-evident logic – that without the skills they could not produce the good or service so they need to invest in skills – rather than empirical evidence that there is a positive rate of return (Bassi and McMurrer, 2006). Other research indicates that there are often spillover effects from organisational investment in skills development through knowledge being transferred to other people in the organisation, not just the trainee (Eraut *et al.*, 2002).
- Employer commitment to training and skills development is often based on belief rather than empirical evidence of a positive rate of return.*
- 4.43 Studies have shown that investment in training is positively related to output and employment growth, though the direction of the relationship is sometimes difficult to ascertain (Cosh *et al.*, 2003), and that it results in higher profits. A study by Institute of Fiscal Studies revealed that the productivity benefits from training were much greater than any increase in wages (IFS, 2000). Provision of training is also related to workplace survival (Collier *et al.*, 2007). Where organisations provided off-the-job training, all other things being equal there was a 9 percentage-point reduction in the probability of closure (Collier *et al.*, 2007). A one-level increase in the general level of educational attainment of the workforce resulted in 4 to 6 percentage-point reduction in the probability of closure.
- 4.44 A degree of caution is required when assessing statistical analyses of the effect of training or workforce development on firm performance or survival. Training and workforce development are often part of a wider range of measures that improve organisational performance (Work Foundation, 2005; Hogarth and Wilson, 2001). Training and workforce development are an important part of that package but without the other elements in place, the returns to investment in training are unlikely to be obtained. In reality, the problem is not one of identifying cause and effect,
- Training and workforce development are often part of a wider range of measure that improve organisational performance.*

do more successful firms invest in training or *vice versa* rather it is a process where the strategic vision, human resource practices, investment and innovation take place more or less simultaneously.

- 4.45 Mason highlights the importance of skills and training to firms' productivity and strategies in different industries (Mason, 2005). Skill deficiencies were cited as a barrier to increasing the share of sales in high value-added products by a number of firms; however, only firms in the logistics sector rank skills deficiencies as a top barrier. The bulk of high value-added activities were found to be skill-intensive in nature. Skill requirements, in type and quantity, were also found to vary substantially between industries. Mason found that skills alone are not sufficient to ensure success in the adoption of high value-added product strategies. Access to capital for investment in machinery, equipment, ICT systems, product development and sales and distribution networks are also essential. Capable senior management is also necessary to ensure that all inputs are combined in the most productive manner.
- Skills alone are not sufficient to ensure success in the adoption of high value-added product strategies.*
- 4.46 To some extent, the issue is related to the extent to which employers have a business plan (for example, a strategic vision) and the degree to which this incorporates human resource policy. The *Skills for Business Network 2005: Survey of Employers* reveals that 62 per cent of workplaces had a formal business plan (Ipsos MORI Social Research Institute, 2006). In relation to the specific business objectives that drove a workplace, this was often related to developing sales and turnover, but in around two thirds of cases (67 per cent) this was linked to the development of skills. In total, around 70 per cent of workplaces reported that their human resource strategy was closely linked to their business strategy.
- 4.47 At face value the results presented above are positive, but there is an issue around the performance of the workplaces that do not report skills development as part of their business objectives, or the 16 per cent of workplaces where human resource policy was not linked to their business strategy. Numerically this accounts for a large number of workplaces and an even larger number of employees.



## Other benefits of education

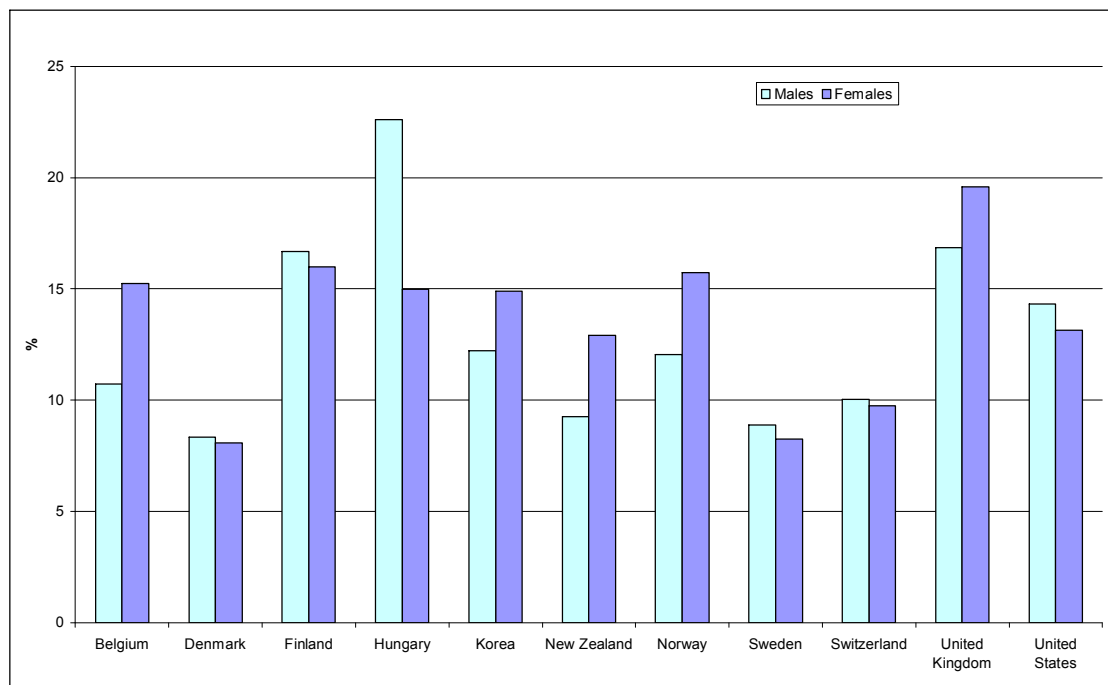
- 4.48 Thus far the discussion has concentrated on the pecuniary rewards to individual employees and employers, but there are other issues to consider. Education, training, and personal development have been found to be beneficial to the wider society. The social or public returns to education or learning range from improving public health and reducing crime to increasing social cohesion. *There are non-pecuniary benefits associated with education.*
- 4.49 According to the Centre for Research on the Wider Benefits of Learning (CRWBL), learning can have a causal impact on many factors including wellbeing, health, attitudes and behaviour. The wider benefits of learning are realised through not only qualifications and employment skills but also through the development of personal 'soft-skills', social interaction and the signalling of personal abilities through educational achievement. *Education can affect wellbeing, health, attitudes and behaviour.*
- 4.50 Attainment of at least 'O' levels results in a 6 per cent reduction in the risk of adult depression with potentially high mental health cost savings if people with no qualifications were to attain Level 1 (Chevalier and Feinstein, 2006). It is also suggested that education is associated with reduced crime levels. A study of two government interventions, the Reducing Burglary Initiative (RBI) and Educational Maintenance Allowances (EMA), found that juvenile convictions for burglary fell in areas where these initiatives were implemented relative to areas in which neither programme was introduced. Convictions decreased even more in areas where both RBI and EMA were introduced compared to areas in which only one of the programmes was introduced.
- 4.51 Individual and family-level benefits can also be attributed to education. According to CRWBL, learning has family and intergenerational benefits such as improving parenting skills, developing social support networks for families, and increasing self-awareness and confidence in parents. Other benefits of education include increased racial tolerance, and increased self-efficacy.

## International evidence on rates of return

4.52 A further question to address is whether imbalances are greater in this country than in those with which it competes. Relative to other countries, the rate of return from obtaining a higher level qualification in the UK is high. The private internal rates of return (RoR) for an individual obtaining a university-level degree (ISCED 5/6) compared to an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4) in 2003 are illustrated for a number of countries in *Figure 4.3 (OECD Education at a Glance 2006, Chart A9.1)*. The RoR in the UK is more than 16 per cent for men and nearly 20 per cent for women. These are higher than those obtained in the US where the RoR is less than 15 per cent for both men and women.

*Relative to other countries, the rate of return to higher level qualifications is relatively high in the UK.*

**Figure 4.3: Private internal rates of return (RoR) for an individual obtaining a university-level degree (ISCED 5/6) compared to an upper secondary and post-secondary non-tertiary level of education (ISCED 3/4) (2003).**



**Source:** OECD Education at a Glance 2006, Chart A9.1

4.53 The earnings premiums associated with higher levels of education may be indicative of the demand for skills as reflected by qualifications. *Table 4.3* shows trends in relative earnings from 1997 to 2004 for a number of countries (*OECD Education at a Glance 2006, Chart A9.2a*). The advantage of tertiary education over upper

*The earnings premiums associated with higher levels of education may indicate the demand for skills.*

secondary education in the UK grew from 53 per cent in 1997 to 58 per cent in 2004. Considering the countries for which data are available, six of the nine countries exhibited an increase in the returns to tertiary relative to upper secondary education. In France, New Zealand and Spain, the advantage for tertiary education decreased between 1997 and 2004. In France, this premium actually decreased from 49 per cent in 1997 to 47 per cent in 2004.

- 4.54 The wage premium related to tertiary education rather than secondary level education increased between 1997 and 2004 for six of the nine countries for which data are available. Hungary witnessed the greatest increase in this premium with the wages of those educated to tertiary level being 79 per cent higher than the earnings of those with secondary level education in 1997 and 117 per cent higher in 2004.
- 4.55 The relative wage penalty associated with being educated below the upper secondary level rather than having upper secondary or post-secondary non-tertiary education decreased between 1997 and 2004 in most countries for which data are available. The largest decrease in the wage penalty occurred in Spain where those educated below the secondary level earned 24 per cent less than those with secondary education in 1997 and 15 per cent less in 2004. The wage penalty associated with having less than secondary education increased in New Zealand and the US. The penalty in the UK fell from 36 per cent in 1997 to 33 per cent in 2004. As the OECD has pointed out on several occasions, the labour market penalty that stems from low educational attainment is relatively high in the UK (see Chapter 3 on supply and Chapter 5 on social exclusion). In summary, the rewards from high-level attainment are relatively good compared to the OECD average, but the costs of poor educational attainment are relatively high.

**Table 4.3: Trends in relative earnings: adult population (1997-2004)**

		1997	1998	1999	2000	2001	2002	2003	2004
Australia	Below upper secondary	79	m	80	m	77	m	m	m
	Tertiary	124	m	134	m	133	m	m	m
Belgium	Below upper secondary	m	m	m	92	m	91	89	m
	Tertiary	m	m	m	128	m	132	130	m
Canada	Below upper secondary	84	77	79	79	76	77	78	m
	Tertiary	127	141	141	145	146	139	140	m
Czech Republic	Below upper secondary	68	68	68	m	m	m	m	73
	Tertiary	179	179	179	m	m	m	m	182
Denmark	Below upper secondary	85	86	86	m	87	88	82	m
	Tertiary	123	124	124	m	124	124	127	m
Finland	Below upper secondary	97	96	96	m	95	95	94	m
	Tertiary	148	148	153	m	150	150	148	m
France	Below upper secondary	84	84	84	m	m	84	84	85
	Tertiary	149	150	150	m	m	150	146	147
Germany	Below upper secondary	81	78	79	75	m	77	87	88
	Tertiary	133	130	135	143	m	143	153	153
Hungary	Below upper secondary	68	68	70	71	71	74	74	73
	Tertiary	179	184	200	194	194	205	219	217
Ireland	Below upper secondary	75	79	m	89	m	76	m	m
	Tertiary	146	142	m	153	m	144	m	m
Italy	Below upper secondary	m	58	m	78	m	78	m	m
	Tertiary	m	127	m	138	m	153	m	m
Korea	Below upper secondary	m	78	m	m	m	m	67	m
	Tertiary	m	135	m	m	m	m	141	m
Luxembourg	Below upper secondary	m	m	m	m	m	78	m	m
	Tertiary	m	m	m	m	m	145	m	m
Netherlands	Below upper secondary	83	m	m	m	m	84	m	m
	Tertiary	141	m	m	m	m	148	m	m
New Zealand	Below upper secondary	77	76	76	74	74	m	76	75
	Tertiary	148	136	139	133	133	m	126	129
Norway	Below upper secondary	85	84	84	m	m	84	80	m
	Tertiary	138	132	133	m	m	135	126	m
Poland	Below upper secondary	m	m	m	m	m	m	m	78
	Tertiary	m	m	m	m	m	m	m	163
Portugal	Below upper secondary	62	62	62	m	m	m	m	m
	Tertiary	176	177	178	m	m	m	m	m
Spain	Below upper secondary	76	80	m	m	78	m	m	85
	Tertiary	149	144	m	m	129	m	m	132
Sweden	Below upper secondary	90	89	89	m	86	87	88	m
	Tertiary	129	130	131	m	131	130	130	m
Switzerland	Below upper secondary	74	75	76	78	m	77	75	75
	Tertiary	152	153	151	157	m	156	156	161
United Kingdom	Below upper secondary	64	65	65	67	67	m	69	67
	Tertiary	153	157	159	159	159	m	162	158
United States	Below upper secondary	70	67	65	65	m	66	66	65
	Tertiary	168	173	166	172	m	172	172	172

Source: OECD Table A9.2a. [www.oecd.org/edu/eag2006](http://www.oecd.org/edu/eag2006)

4.56 A number of inferences can be made based on the relatively high rates of return to obtaining higher level qualifications in this country:

- employers are faced with, other things being equal, a relatively high labour cost in relation to the skills they require;
- in order to afford the skills they need, notably in the traded sector, they need to obtain higher levels of productivity compared to those countries where the wage premium is less;
- employers may choose to substitute technology for skill because of the relatively high cost of skills.

Whilst much evidence has been collected on the rates of return to acquiring skills, however defined, there is much less evidence about how this affects the behaviour of employers.

## Over-qualification

4.57 Usually a distinction is made between over-qualification and over-education. The former refers to people whose educational attainment surpasses that required to carry out their job, whereas the latter tends to refer to all forms of learning for whatever purpose. The interest in over-qualification stems from the Government's policy to raise levels of educational attainment (*cf.* the *Leitch Review*, PSA qualification targets), and the extent to which this meets the needs of the economy. Whether there is a useful distinction between over-qualification and over-education is a moot point, given that most people consider education and training as an investment good (Felstead *et al.*, 2007).

*There is usually a distinction made between over-qualification and over-education.*

4.58 Over-qualification has been typically measured by asking people whether:

- they needed a given qualification to obtain their job; and
- whether they actually used the skills acquired in obtaining the qualification in their current jobs.

Using this approach, studies in relation to higher education have shown that most graduates, after an initial period in the labour market, use the skills they

acquired in obtaining their degree (Purcell *et al.*, 2005).

- 4.59 Where there is a genuine mismatch between the skills possessed by the incumbent and those required by their job, the costs to the individual can be high. Where the individual is over-qualified they are likely to experience lower productivity, lower job satisfaction and higher turnover (McGuinness, 2006). The key question, of course, is: how many people are over-qualified? *A genuine mismatch between a person's skills and those required by a job can be costly for the individual.*
- 4.60 Using a method of the type described above, the *Skills Surveys* have sought to measure the extent of excess supply or demand at various levels of qualification (Felstead *et al.*, 2007). Data are available for 1986, 1992 (Gallie *et al.*, 1998), 1997 (Ashton *et al.*, 1999), 2001 (Felstead *et al.*, 2002), and 2006, and therefore capture the period over which the drive towards higher educational attainment gathered pace. In general, the data indicate an over-supply of people with qualifications at each level (see *Table 4.4*). *Skills Surveys have sought to measure the extent of excess supply or demand at various levels of qualification.*

**Table 4.4: Qualifications Demand and Supply, 1986 - 2006**

	1986			1992			1997			2001			2006		
	D (000s)	S (000s)	D - S (000s)	D (000s)	S (000s)	D - S (000s)	D (000s)	S (000s)	D - S (000s)	D (000s)	S (000s)	D - S (000s)	D (000s)	S (000s)	D - S (000s)
<b>Level 4 or above</b>	4,260	3,820	440	5,793	4,988	805	5,805	6,324	-519	7,292	7,359	-67	7,445	8,495	-1,050
<b>Degree</b>	2,048	2,319	-271	3,002	2,979	23	3,376	3,877	-501	4,321	4,774	-453	4,805	5,928	-1,123
<b>Professional qualifications</b>	2,214	1,501	713	2,791	2,009	782	2,430	2,447	-17	2,973	2,585	388	2,641	2,567	74
<b>Level 3</b>	3,215	4,905	-1,690	3,759	4,124	-365	3,292	6,209	-2,917	4,074	6,379	-2,305	4,081	6,126	-2,045
<b>Level 2</b>	3,920	4,080	-160	4,309	7,276	-2,967	5,081	5,255	-174	3,985	5,302	-1,317	3,788	5,617	-1,829
<b>Level 1</b>	1,631	2,198	-567	1,125	2,269	-1,144	2,213	3,754	-1,541	3,031	3,549	-518	2,808	3,248	-440
<b>No qualifications</b>	8,201	7,748	453	7,702	5,831	1,871	7,588	3,274	4,314	6,651	2,881	3,770	6,990	2,232	4,758

**Source:** Felstead *et al.* (2007), Table 4.6.

**Note:** D indicates the number of jobs with highest qualifications requirements at each level plus the number of estimated vacancies at each level; S indicates the number of people holding highest qualifications at each level.

- 4.61 Three key findings are apparent from *Table 4.4*:
- the excess supply of people qualified at all levels in 2006 (much greater than the level of excess supply in 1986);
  - the excess demand for people with no qualification resulting from the decline in the percentage of people without qualifications;
  - the excess supply of people educated at Level 4 and above (this stood at just over 1m in 2006).

4.62 At face value, the findings suggest over-supply or over-qualification on a substantial scale (around 6 million people). But these findings are, apparently, at odds with other studies, such as those by the OECD, which reveal substantial wage premiums associated with higher levels of educational attainment (OECD, 2006). They are also at odds with the current policy to raise further educational attainment.

4.63 Rather than being a supply side problem, it may be a demand side issue, resulting from the under-utilisation of skills that are available to employers. As the supply side transforms, employers need to adapt their human resource strategies accordingly, but this will take time so there will always be a lag between the supply of skills and the full deployment of them. Moreover, because the supply of workers with qualifications at all levels is increasing in volume each year (see Chapter 3), one would not necessarily expect the gap between supply and demand to close. Indeed it may be beneficial for the supply side to be one step ahead of demand, especially if employer demand is focused on the present rather than the future.

*It may be beneficial for the supply side to be a step ahead of demand.*

4.64 On balance, the evidence that rates of return have remained high and relatively stable over time suggests that supply is keeping pace with demand, rather than there being a problem of over-qualification. As the data on returns to individuals highlight, however, there may be a problem of over- and under-supply in relation to some subjects.

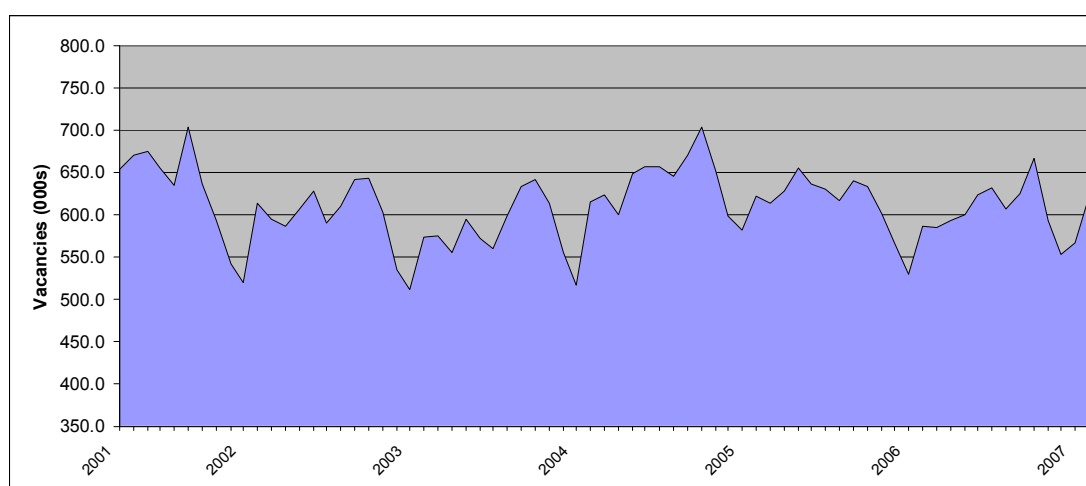
*The evidence on rates of return suggests that supply is keeping pace with demand.*



## Employers' Recruitment Problems: NESS and other sources

- 4.65 Employer surveys provide valuable evidence about the current balance between the demand for, and the supply of, skills. The type of mismatch revealed is essentially one of excess demand for labour since this will manifest itself as a skill-shortage vacancy. They reveal much less about situations of excess supply. Employer surveys reveal:
- the extent of recruitment problems;
  - the nature of recruitment problems (whether they are due to a shortage of skills);
  - their skill content (that is, the types of skill in short supply);
  - their causes and consequences.
- 4.66 Viewed over a long period of time, surveys of employers' recruitment needs begin to reveal evidence about the extent to which shortages constrain national economic performance. Time series analysis of CBI Industrial Trends survey data conducted as part of the Skills Task Force enquiry revealed how, over time, skill shortages had constrained performance, contributed to a slow-down in the economy, and prevented a quicker recovery (Blake *et al.*, 2000).
- Over time, employer surveys reveal evidence about how shortages constrain national economic performance.*
- 4.67 Before looking at the extent of recruitment problems it is worth looking at the trend in vacancies. The ONS Vacancy Survey provides an indication of the extent of vacancies on a month-by-month basis (see *Figure 4.4*). The data reveal a highly cyclical pattern in the reporting of vacancies, with sharp peaks near the end of each year, followed by sharp troughs at the beginning. The data are important because they reveal the seasonal element to reporting of vacancies.

**Figure 4.4: Vacancies 2001 - 2007**



**Source:** ONS Vacancy Survey

- 4.68 In relation to recruitment problems, the NESS series from 2003 to 2005 provides comprehensive information about employers' experiences of recruiting labour and the difficulties they encounter. The series also provides information relating to skill gaps, that is, the extent to which employers regard their existing workforce as proficient to meet the needs of their business. As well as providing information about the extent of recruitment problems and skill gaps in the economy, the NESS series also looks into the causes and implications of these. This section reports on the NESS series and supplements this information using other sources such as the CIPD Recruitment Survey (CIPD, 2006).
- 4.69 There is now a substantial series of surveys that have collected data about employers' skill needs. The series started with the *Skill Needs in Britain* surveys, conducted almost annually between 1992 and 1998 but then replaced by the *Employers Skill Surveys* (ESS) in 1999, 2001 and 2002. NESS carried on the tradition of these surveys: NESS03 was the first survey in the new series and subsequently two further surveys have been carried out, NESS04 and NESS05 (Shury *et al.*, 2006). NESS2007 is currently underway at the time of writing.

## Definitions used in National Employers Skill Surveys

- 4.70 The NESS series uses precise definitions to describe employers' skill needs. *Employer skill needs are defined as hard-to-fill vacancies and skill-shortage vacancies in the NESS.*
- **Hard-to-fill vacancies** (HtFVs) are those vacancies self-classified by the respondent as hard to fill.
  - **Skill-shortage vacancies** (SSVs) are defined as HtFVs resulting from applicants not having the skills, experience or qualifications the employer requires.
- 4.71 The NESS series data are weighted to ensure that it is representative of the population of employers and employees in the economy based on the most up-to-date population estimates.

## Summary of Findings from National Employers Skill Surveys

- 4.72 Before providing a more detailed analysis of skill deficiencies in England, *Table 4.5* provides the headline findings from ESS2001 to NESS05. Although there are some definitional issues that complicate comparisons across time, the overall picture revealed is one of stability: with around 4 per cent of establishments in all four years reporting SSVs (or 143,000 such vacancies in 2005). Stability might be expected given the stable macro-economic climate over the period. But a question arises about the extent to which recruitment problems are frictional, resulting from the level of labour turnover in the economy, or structural, resulting from qualitative changes in the demand for skills from employers.
- 4.73 NESS captures data on recruitment problems that exist at the time the employer interview takes place. In contrast, the CIPD recruitment survey (CIPD, 2005) carried out on a much smaller scale with 804 interviews captures data about the past twelve months. Using this reference period it reports that 81 per cent of employers had recorded recruitment difficulties. *The reference period for NESS and the CIPD recruitment survey differs.*

**Table 4.5: Overall incidence of skill deficiencies in England, 2003 – 2005**

	ESS2001	NESS03	NESS04	NESS05
<b>Vacancies and SSVs</b>				
% of establishments with any vacancies	14	17	18	17
% of establishments with any HtFVs	8	8	8	7
% with unprompted SSVs	4	4	4	4
% of all vacancies which are unprompted SSVs	21	20	17	17
Number of unprompted SSVs per 1,000 employees	8	6	5	5
% with unprompted or prompted SSVs	n/a	n/a	6	5
% of all vacancies which are unprompted or prompted SSVs	n/a	n/a	24	25
Number of unprompted or prompted SSVs per 1,000 employees	n/a	n/a	7	7
<b>Skill gaps</b>				
% of establishments with any staff not fully proficient	23	22	20	16
Number of staff not fully proficient as a % of employment	9	11	7	6

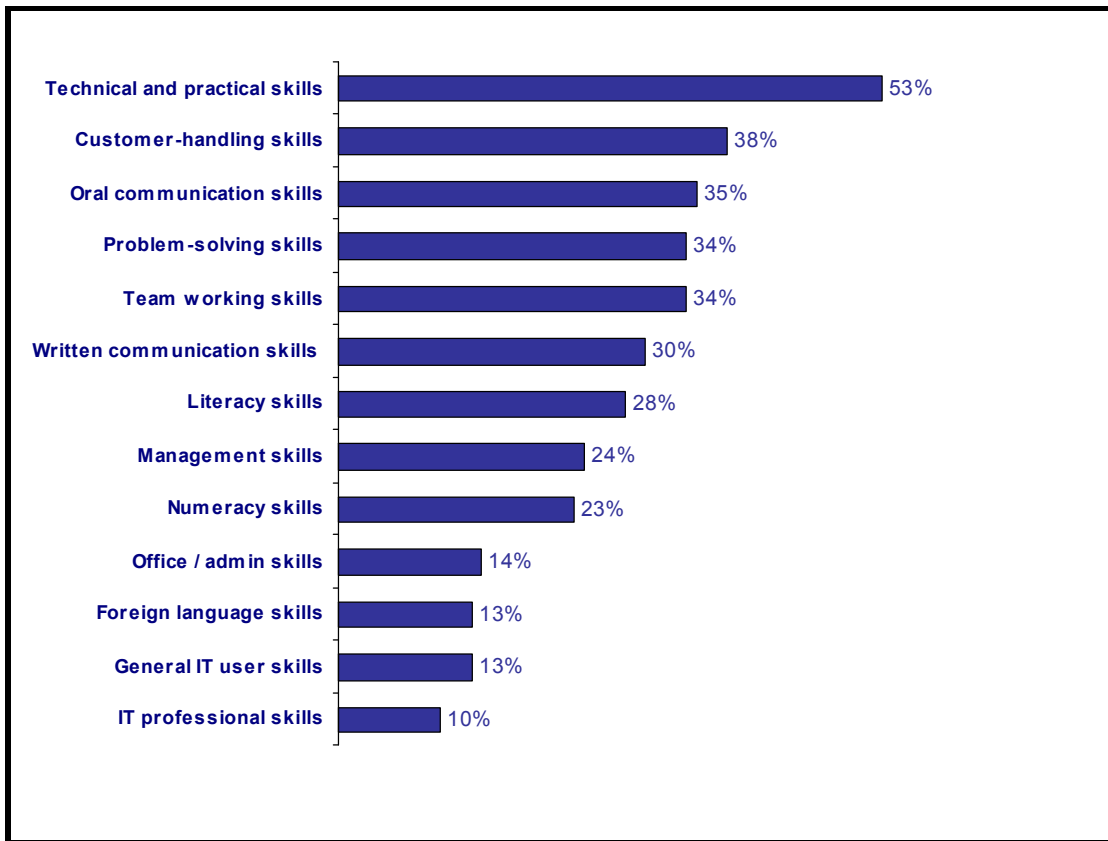
**Source:** NESS05 (Shury *et al.*, 2006)

- 4.74 The extent of skill gaps in the economy is substantially greater than recruitment problems. The survey evidence points to around 1.3 million employees – 6 per cent of all employees – who fall short of full proficiency in their existing job. There is, however, a strong indication that skill gaps have reduced over the four-year period. This might reflect the fact that employers now report longer periods in which to prepare people to carry out a job (Felstead *et al.*, 2007). If employers recognise the need for longer training times, they may be less likely to report skill deficiencies because they identify employees for longer as ‘trainees’ rather than fully experienced workers.
- Skill gaps are more prevalent than recruitment problems.*

## Recruitment problems in detail

- 4.75 A key issue is to identify the underlying skill needs giving rise to recruitment problems and the sectors of the economy where they are arising. *Figure 4.5* shows the percentage of SSVs arising from shortages of different types of skill. Difficulty finding applicants with the required *technical and practical skills* was one of the main reasons leading to a SSV. It is also apparent that softer, more generic skills also gave rise to recruitment problems. *Oral and written communication, customer-handling, team working* and *problem-solving* skills were reported as being difficult to find in relation to a relatively high percentage of SSVs. The data are important because they indicate where further skill development is necessary. The 2006 *Skills at Work Survey* also indicates significant increases in usage in some of these areas since 1997, especially 'influencing skills', which encompass communication as well as analysing and persuading skills. There is evidence, therefore, that shortages are arising in areas where the use of particular skills is growing.
- Difficulty finding applicants with technical and practical skills, as well as more generic skills, has given rise to recruitment problems.*

**Figure 4.5: Skills lacking in connection with skill-shortage vacancies**



**Source:** NESS05 (Shury *et al.*, 2006).

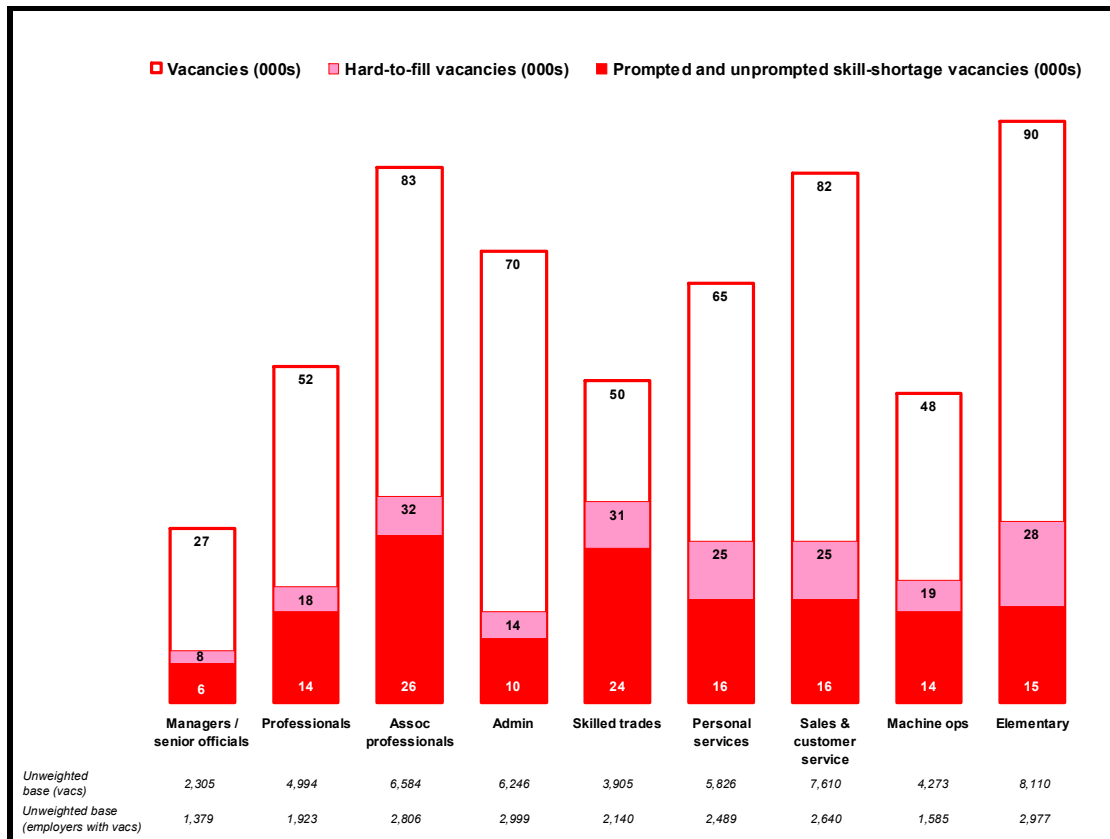
**Base:** All unprompted and prompted skill-shortage vacancies  
(weighted=143,124; unweighted=11,326; unweighted employer base=4,846).

## Occupational characteristics of recruitment problems

4.76 Occupation provides a proxy measure of skills, albeit an imperfect one. *Figure 4.6* and *Table 4.6* show how vacancies, and recruitment problems, are distributed across occupations. The data reveal that skilled trades and associate professionals recorded the highest proportion of SSVs in relation to the number of vacancies reported. In other words, it is occupations with a higher skill content that account for a disproportionate share of SSVs.

*Occupations with higher skill content account for a disproportionate share of SSVs.*

**Figure 4.6: Overall distribution vacancies by occupation**



**Source:** NESS05 (Shury *et al.*, 2006).  
**Base:** All vacancies.

**Table 4.6: Summary of skill-shortage vacancies by occupation**

	Vacancies	Unprompted SSVs	Prompted and unprompted SSVs	% of vacancies that are SSVs (unprompted and prompted)	SSVs (unprompted and prompted) per 1,000 employees
<i>Unweighted base</i>	50,757	7,946	11,326		
All England	573,900	99,500	143,125	25%	7
<i>Occupation</i>					
Managers and senior officials	27,150	4,975	6,350	23%	2
Professionals	51,625	11,250	14,400	28%	6
Associate professionals	83,225	18,425	26,050	31%	15
Administrative and secretarial	69,625	8,100	10,225	15%	3
Skilled trades	50,175	16,925	24,300	48%	16
Personal service	64,700	9,600	15,975	25%	10
Sales and customer service	81,550	10,975	16,175	20%	6
Transport and machine operatives	48,125	9,950	13,800	29%	8
Elementary occupations	89,575	8,800	14,975	19%	5

**Source:** NESS05 (Shury *et al.*, 2006)  
**Base:** All vacancies.

### Recruitment problems and size of establishment

4.77 When the number of SSVs is viewed in relation to the number of people employed, there is a clear tendency for SSVs to be more common in smaller workplaces (see *Table 4.7*). For example, there are 19 SSVs per 1,000 employees in establishments with two to four employees, compared with two SSVs per 1,000 employees in establishments with more than 500 employees.



**Table 4.7: Summary of skill-shortage vacancies by size of establishment**

	Vacancies	Unprompted SSVs	Prompted and unprompted SSVs	% of vacancies that are SSVs (unprompted and prompted)	SSVs (unprompted and prompted) per 1,000 employees
<i>Unweighted base</i>	50,757	7,946	11,326		
All England	573,900	99,500	143,125	25%	7
2 to 4	112,600	22,900	36,625	33%	19
5 to 24	175,775	33,725	46,900	27%	9
25 to 99	132,950	20,800	30,250	23%	6
100 to 199	50,150	9,025	11,900	24%	5
200 to 499	59,950	8,750	11,225	19%	3
500+	42,475	4,275	6,225	15%	2

**Source:** NESS05 (Shury *et al.*, 2006).  
**Base:** All vacancies.

### Recruitment problems by industrial sector

- 4.78 For NESS05, analysis in relation to industry has been carried out by reference to the SSC representing the workplace rather than conventional industrial sector based on goods and services produced.
- 4.79 The overall pattern of results by SSC is shown in *Table 4.8* and *Figure 4.7*. The main conclusion of the analysis is that relatively few sectors experience both a high *absolute number* of SSVs and a high *proportion* of vacancies which are hard to fill for skill-related reasons. The bulk of industry groups fall into the bottom-left quadrant where the absolute number of skill shortages is relatively low and the density of SSVs is also lower than average. *Relatively few sectors experience both a high absolute number of SSVs and a high proportion of vacancies which are hard to fill for skill-related reasons.*
- 4.80 It is industries in the top two quadrants where skill shortages are most likely to be inhibiting the growth and development of workplaces. The top-right quadrant of the figure contains the industries that could be said to be experiencing the greatest skill challenges in recruitment. Skill shortages as a percentage of vacancies and the absolute number of current SSVs are both high. These industries are those covered by ConstructionSkills and SEMTA.

- 4.81 The top-left quadrant of the figure contains those industries where the density of SSVs is high, but a relatively low number of vacant positions means that the absolute number of skill shortages is low. It may be that what prevents these industry groups from appearing in the top-right quadrant is a reluctance to recruit actively because of the poor prospects of finding people with the right skills. The industries in this quadrant particularly affected by a high density of SSVs are those covered by SummitSkills, GoSkills, Automotive Skills and Lantra.
- 4.82 The bottom-right quadrant contains industries experiencing a relatively low density of SSVs but where the sheer volume of employers looking to recruit means that the number of skill shortages is relatively high. Industries in this category include those covered by Skillsmart Retail, People 1st and Skills for Care & Development.

**Table 4.8: Number and density of skill-shortage vacancies by Sector Skills Council sector**

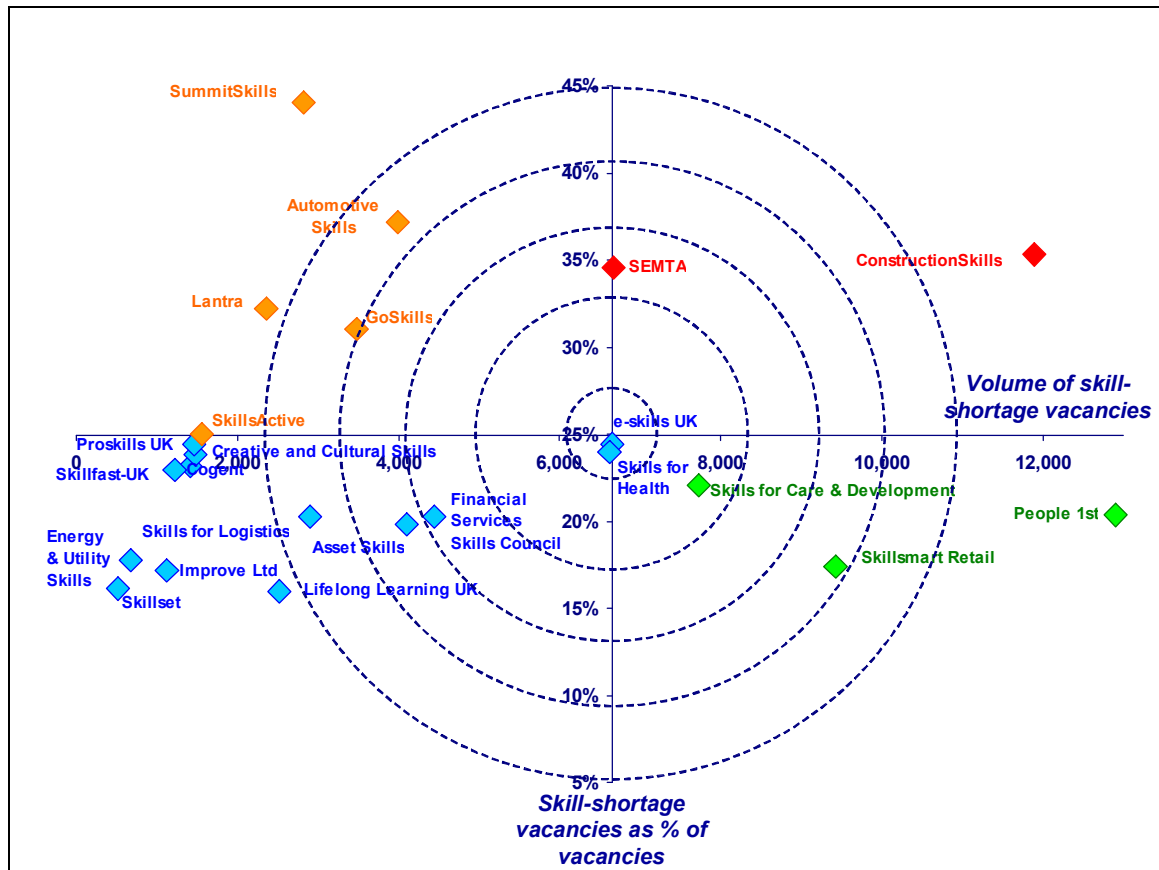
	Vacancies	HtFVs	Unprompted SSVs	Prompted and unprompted SSVs	% of vacancies that are SSVs (unprompted and prompted)	SSVs (unprompted and prompted) per 1,000 employees
<b>All England</b>	573,905	203,555	99,500	143,125	25%	7
<b>SSC:</b>						
Lantra	7,321	3,893	1,575	2,350	32%	8
Cogent	6,108	2,074	1,025	1,400	23%	3
Proskills	6,197	1,931	1,100	1,475	24%	4
Improve Ltd	6,572	1,657	875	1,125	17%	3
Skillfast-UK	5,331	1,923	925	1,225	23%	5
SEMTA	19,301	8,069	5,300	6,675	35%	5
Energy & Utility Skills	3,813	873	475	675	18%	3
ConstructionSkills	33,727	16,037	10,600	11,900	35%	12
SummitSkills	6,406	3,277	2,575	2,825	44%	13
Automotive Skills	10,734	4,703	3,400	4,000	37%	9
Skillsmart Retail	54,189	17,172	5,300	9,425	17%	4
People 1st	63,363	22,863	7,050	12,900	20%	8
GoSkills	11,200	4,965	2,775	3,475	31%	9
Skills for Logistics	14,374	4,494	2,000	2,900	20%	5
Financial Services Skills Council	21,903	5,829	3,125	4,450	20%	5
Asset Skills	20,740	6,675	2,650	4,100	20%	6
e-skills UK	27,208	7,754	6,025	6,650	24%	10
Skills for Justice	4,051	605	375	400	10%	1
Lifelong Learning UK	15,784	3,529	1,750	2,525	16%	3
Skills for Health	27,637	9,384	3,050	6,625	24%	4
Skills for Care & Development	35,000	13,754	4,025	7,725	22%	10
Skillset	3,178	659	375	500	16%	4
Creative & Cultural Skills	5,979	2,164	1,125	1,450	24%	7
SkillsActive	6,229	2,338	1,125	1,550	25%	6
Non-SSC employers	143,265	49,160	30,150	37,250	26%	7

**Source:** NESS05 (Shury *et al.*, 2006)

**Notes:** Figures rounded to the nearest 25.

The symbol ! is used where the base size was less than 25. Figures in italics denote base sizes of 25 to 49 and should be treated with caution.

**Figure 4.7: Summary of skill-shortage vacancies by Sector Skills Council sector**



**Source:** NESS05 (Shury *et al.*, 2006).  
**Base:** All skill-shortage vacancies (unprompted and prompted).  
**Notes:** Energy & Utility and Skillset SSC sectors have base sizes of 25 to 49 and should be treated with caution. Skills for Justice and Government Skills SSC sectors have bases of less than 25 and have are therefore not shown. Employers not covered by an SSC are not shown.

### Regional and local patterns of recruitment problems

4.83 The NESS series has generally shown only slight differences between regions in recruitment difficulties. In part, this stems from the varied characteristics of each region and the fact that they each encompass large parts of the English economy. Large regional variations in a country that is physically quite small would be unlikely given the flexible and free movement of people. The data reveal that SSVs as a percentage of vacancies are highest in the West Midlands and North West (31 per cent) and lowest in the South West (18 per cent) (see *Table 4.9*). If local training supply is expected to meet the challenge of filling skill shortages, indicative evidence, based on four

sectors, concludes that there exist significant gaps in training provision, especially short courses for adults (SSDA, 2005). There is also some evidence that at the regional level, SSVs are persistent, with the West Midlands, in particular, standing out as a region with a relatively large share of SSVs over the 2000s.

**Table 4.9: Vacancies and hard-to-fill vacancies as a proportion of employment by region**

Region	Vacancies	Vacancies % employment	HtFVs as % vacancies	Unprompted SSVs	Prompted and unprompted SSVs	SSVs as % vacancies
<b>Total</b>	573,900	2.7	35	99,500	143,125	25
West Midlands	56,250	2.5	39	12,000	17,325	31
East Midlands	39,725	2.3	30	5,975	8,175	21
Eastern	57,050	2.6	34	9,550	13,350	23
London	87,450	2.3	28	15,675	18,950	22
North East	23,775	2.5	36	4,175	5,525	23
North West	83,600	3.0	42	13,450	26,225	31
South East	99,150	2.8	39	17,850	25,600	26
South West	62,475	3.0	31	8,700	11,050	18
Yorkshire and the Humber	64,425	3.1	37	12,150	16,925	26

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All vacancies.

### Satisfaction with Young Recruits (16-24 year olds)

- 4.84 Thus far, the discussion has been about recruitment in general. Using NESS, it is possible to look at the recruitment of young people in particular. This gives an indication of the extent to which the education system (compulsory and post-compulsory) is delivering the skills that employers require. NESS05 reported that around a fifth of employers had recruited young people into their first job straight from education in the last 12 months. Out of this group, 35 per cent had recruited someone aged 16 years old, 53 per cent someone aged 17-18, and 45 per cent a graduate (aged under 24).

- 4.85 The overall impression is that employers are satisfied with their young recruits, but satisfaction rises with the age of the recruit so that employers are most likely to report that they are happiest with graduates. For instance, 31 per cent of employers who had recruited 16 year olds were not satisfied compared to 12 per cent of those recruiting graduates. In general, it was their lack of experience and their personal attributes, rather than skills, that employers found wanting. Employers might be satisfied with their recruits but this does not necessarily mean that they are immediately work-ready. Results from the *Skills for Business Network Survey 2005* found that 57 per cent of workplaces were of the opinion that the “education system does not supply people equipped with the skills they need to start working with us”.
- Employers seem to be satisfied with young recruits on the whole.*
- 4.86 Research undertaken on employers’ recruitment of recent graduates found that employers were generally satisfied with their graduate recruits and recognised that they brought to the organisation a specific set of capabilities, in particular that they could (Hogarth *et al.*, 2007):
- challenge how things are done/‘questioning’;
  - assimilate information quicker;
  - be flexible;
  - come at issues from a different perspective (often theoretical);
  - solve problems;
  - bring new ideas and energy;
  - use their initiative and act without waiting for instruction.
- Employers consider recent graduates to have a specific set of capabilities.*
- 4.87 The above study revealed that the extent to which employers found it difficult to recruit graduates of the type they wanted exhibited a ‘U’-shaped relationship with respect to business goals. Those organisations with the most demanding business strategies reported that they found it difficult to find people with the personal attributes they required, as these people were in heavy demand from many of the other major graduate recruiters. Similarly, those with the least demanding business strategies found it difficult to find people because
- The extent to which employers find it difficult to recruit graduates of the desired type is influenced by the employer’s business goals.*

of a failure to adopt suitable recruitment strategies and because they provided a relatively unattractive offer to potential graduate employees. Accordingly, they were often dissatisfied with the quality of their eventual recruit.

### Causes of recruitment problems and their consequences

- 4.88 The particular types of skill that employers found difficult to recruit have been described above (see *Figure 4.5*). The CIPD survey reports that the principal cause of recruitment problems was attracting people with specialist skills (62 per cent of those experiencing recruitment problems). In addition, it was reported that recruitment difficulties arose because it was difficult to appoint people who have the potential to grow in the organisation. The Skills for Business Network found that 58 per cent of all workplaces agreed with the statement: “When we are looking to take on new recruits we have problems finding people with the skills we need”.
- 4.89 Skills supply is not the only explanation for recruitment problems: around a third of workplaces (34 per cent) reported ‘pay difficulties’ as an issue. Recruitment also needs to be seen in the context of employers’ retention problems. The CIPD recruitment survey reported that just under a fifth of employers (19 per cent) experienced retention problems, though this was higher in the private sector (23 per cent) and highest in hospitality (45 per cent). The three main reasons for employee turnover were: change of career (46 per cent); promotion outside the organisation (45 per cent); and level of pay (34 per cent). *There are other reasons, not related to skills supply, leading to recruitment problems.*
- 4.90 Employees also appear to leave an organisation quite quickly after joining it: 19 per cent of employers reported that staff left within six months of joining and 45 per cent within two years. The CIPD reaches the tentative conclusion that this may result from employers failing to undertake sufficient induction training.
- 4.91 The costs to employers of not being able to recruit the staff they need tends to be explained with reference to increased workload for existing staff, delays in developing new products or services and loss of business to competitors. These are significant costs in themselves; but employers also have to develop the means to attract the staff they *There are a number of significant costs associated with employers not being able to recruit the staff they need.*

need through increasing expenditure on recruitment. The CIPD estimates that the costs of recruitment *per person* are around £3,600 and this increases to £8,200 when the costs of managing labour turnover are taken into account.

- 4.92 When looking at the implications of skill shortages there is also a need to consider how other countries fare. In the USA, the manufacturing sector reports a rather abject situation with a “serious shortage of qualified employees, which in turn is causing significant impact to business and the ability of the country as a whole to compete in a global economy” (Deloitte, *et al.*, 2006). In the US manufacturing sector, 81 per cent of employers reported that they were facing a moderate to severe shortage of qualified workers: skilled production workers, scientists and engineers and, to a lesser extent, unskilled production workers. The problem had developed because of changes in the supply side (concerns about science and technology curricula in schools), and on the demand side because employers were not providing sufficient incentives for people to join the manufacturing sector.

### Extent of skill gaps

- 4.93 It is not just in relation to recruitment that employers experience skills problems – there is also the issue of how to ensure that existing staff are competent to meet the needs of the workplace. Given the pace of technical and organisational change in many workplaces, many employees are faced with the challenge of either acquiring new skills or deploying existing skills in a new organisational context. Skill gaps are a measure of the extent to which existing employees are able to meet business needs. Skill gaps are defined in NESS as: the extent to which employers perceive their employees’ current skills as adequate to meet current business objectives. Respondents are asked to comment on an occupation-by-occupation basis about the extent to which employees were ‘fully proficient at their current job’.

*Skill gaps also measure the extent to which existing employees are able to meet business needs.*



- 4.94 Results from NESS05 reveal there were around 574,000 vacancies in England in total, of which 143,000 – some 25 per cent – were SSVs. This compares with 1.3 million employees who were not fully proficient in their current job.
- 4.95 While the *Skills for Business 2005 Survey of Employers* revealed that the percentage of employers reporting that the gap between the skills they possess and those that they need increased over the 2003 to 2005 period, the level of change was modest, increasing from 25 per cent to 29 per cent. *Table 4.10* shows the trend in skill gaps since 1999 based on ESS and NESS figures. There appears to have been a consistent reduction in the extent of gaps since 1999. Whilst caveats need to be made about the strictness of the comparisons between ESS (1999 and 2001) and NESS (2003 and 2004), the trend is clear. The narrowing of the skill gap is particularly marked in workplaces employing five or more people. The trend is apparent in both the proportion of employers who reported a gap and the scale of the gap reported. It was apparent across all occupational groups, sizes of workplace, and regions.
- There appears to have been a consistent reduction in the extent of skill gaps since 1999.*

**Table 4.10: Skill gaps 1999–2005**

	ESS1999	ESS2001	NESS03	NESS04	NESS05
<b>All establishments:</b>					
Percentage of establishments with a skill gap	n/a	23	22	20	16
Percentage of staff described as having a skill gap	n/a	9	11	7	6
<b>Establishments with 5+ employees:</b>					
Percentage of establishments with a skill gap	56	50	39	31	26
Percentage of staff described as having a skill gap	11	10	11	7	6

**Source:** ESS1999 and ESS2001 (DfES); NESS 2003 to 2005 (Shury *et al.*, 2006)

**Base:** First and third row all establishments; second and fourth rows all employment.

**Note:** ESS1999 and ESS2001 figures for the percentage of staff lacking proficiency are best regarded as estimates (as indicated in paragraph 4.43).

- 4.96 It is difficult to be certain about the reasons for the decline in skill gaps. Based on evidence from the *Skills at Work Survey* there is increased recognition from employees that they need to keep learning new things; but there is also evidence that employees now have much less discretion in their jobs, so increased levels of control over employees might also account for the decline in skill gaps. Whatever the reason, the scale of the decline in skill gaps warrants further investigation.

### Characteristics of skill gaps

- 4.97 Employers who had experienced skill gaps were asked to define what skills they felt needed improving for an occupation where staff were considered not fully proficient (see *Table 4.11*). The key areas in which employees were viewed as lacking skills can be classified as generic ones: team working (48 per cent); oral communication (42 per cent); customer-handling skills (46 per cent); and problem-solving (40 per cent). That said, technical and practical skills were lacking in 44 per cent of cases where skill gaps were followed up.

*The Skills at Work Survey indicates that employees are considered to lack generic skills as well as technical and practical skills.*

### Occupational characteristics of skill gaps

- 4.98 The occupations affected by skill gaps are outlined in *Figure 4.8*. The most striking feature is that skill gaps were frequently reported, proportionately, for sales and customer service occupations and elementary occupations. These are occupations that require a relatively modest level of skill but they account for the highest incidence of skill gaps. It is often assumed that skill gaps are most likely to be found in highly skilled jobs, since the range and depth of skills required are so extensive, but the evidence suggests that this is simply not so. In contrast, managers and professionals stood out as having disproportionately few skill gaps. There is a link here with access to training. Given that the more highly qualified are more likely to receive training and development, so they are able to keep pace with changes in their business. It might be expected that skill gaps emerge in occupations employing relatively less qualified people.

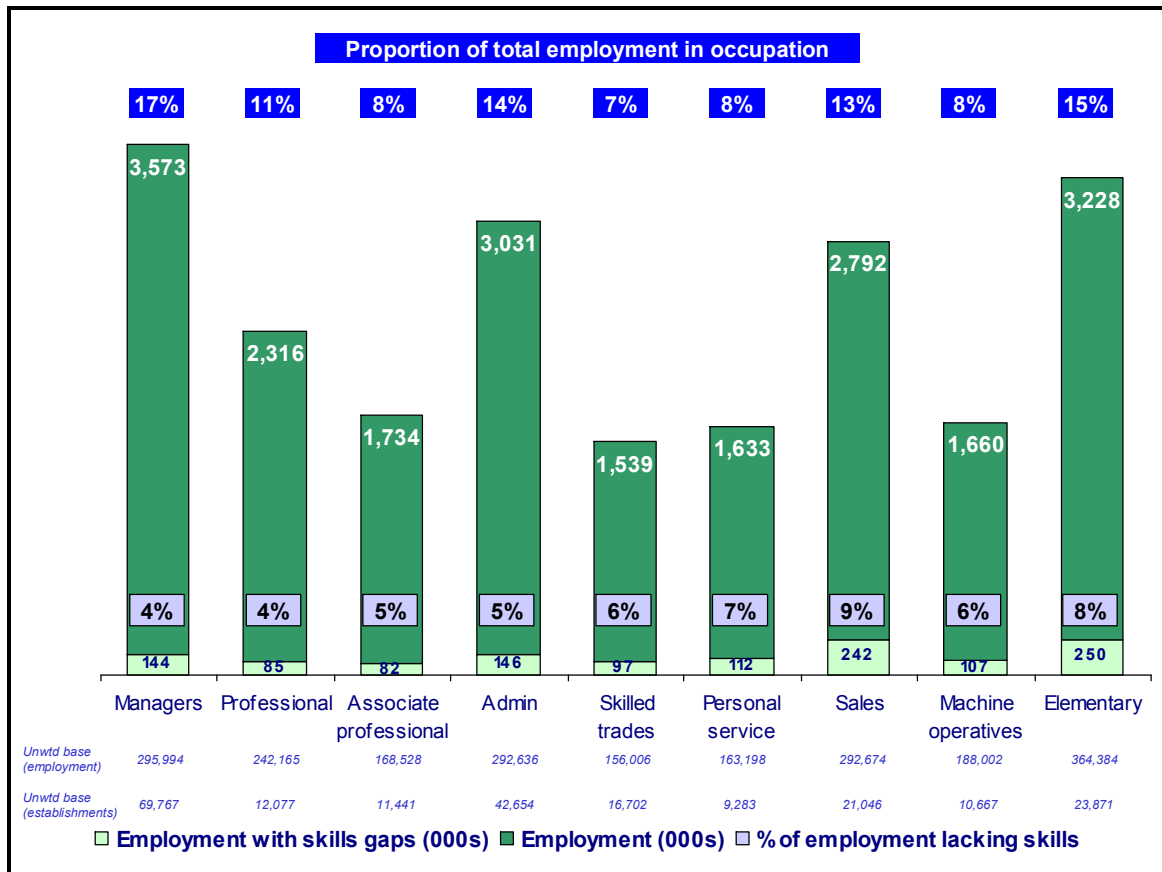
*The evidence suggests that skill gaps are most prevalent in sales and customer service occupations and elementary occupations.*

**Table 4.11: Skills lacking overall by occupation**

	All 2003	All 2004	All 2005	Managers	Professionals	Associate professionals	Administrative	Skilled trades	Personal services	Sales	Operatives	Elementary occupations
<i>Unweighted base</i>	112,789	85,175	109,310	10,661	8,413	5,284	10,883	8,133	9,020	21,627	9,769	25,520
<i>Weighted base (000s)</i>	1,176	1,241	1,059	115	69	65	114	81	91	218	81	226
<i>Skills lacking</i>	%	%	%	%	%	%	%	%	%	%	%	%
Team working	52	47	48	47	35	41	43	39	55	48	50	55
Customer-handling skills	55	47	46	34	30	39	52	33	47	63	29	51
Technical and practical skills	43	45	44	31	52	53	36	64	47	36	56	43
Oral communication	n/a	n/a	42	42	28	30	39	36	43	44	47	48
Problem-solving skills	47	40	40	45	36	41	44	43	41	38	43	38
Written communication	n/a	n/a	29	29	28	34	39	30	36	20	34	27
Management skills	32	25	26	76	30	23	23	18	16	23	11	15
General IT user skills	29	26	23	28	33	33	51	17	18	19	18	10
Literacy skills	24	19	22	10	18	22	24	23	32	16	27	27
Numeracy skills	21	16	21	14	16	17	18	19	21	20	28	26
Office admin skills	n/a	20	20	31	22	23	55	15	11	15	8	8
IT professional skills	13	12	12	19	26	21	29	9	8	7	5	5
Foreign languages	7	9	9	13	5	4	7	6	13	8	12	11

**Source:** NESS05 and NESS03 (Shury *et al.*, 2006; 2004)  
**Base:** All skill gaps followed up.  
**Note:** Column percentages do not sum to 100 per cent because of multiple responses.

**Figure 4.8: The distribution of skill gaps by occupation**



**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** All employment.

### Skill gaps by size of establishment

4.99 A higher percentage of larger employers reported skill gaps: 8 per cent of establishments with fewer than five employees reported skill gaps compared with 41 per cent with 500 or more employees. In contrast, the percentage of employees reported as having a skills gap varies little by size of establishment (at around 6 per cent). Across all size bands, the share of skill gaps is more or less in line with the percentage of the workforce employed (see *Table 4.12*). In absolute terms, most skill gaps are in workplaces with fewer than 200 employees. Evidence indicates that whilst many small employers are committed to training their workforces, they are faced with problems in overcoming skill gaps because they either lack financial resources to train staff, or have insufficient staff to cover for employees in training (BCC, 2007).

**Table 4.12: Incidence, number and density of skill gaps by size of establishment**

	% of establishments with any skill gaps	Number of employees not fully proficient (i.e. number of skill gaps)	% of staff reported as having skill gaps	Share of employment	Share of all skill gaps
		Row percentages		Column percentage	
				%	%
Overall	16%	1,265,000	6%	100	100
<i>Size:</i>					
Less than 5	8%	74,300	4%	9	6
5 to 24	23%	312,600	6%	24	25
25 to 99	35%	336,000	6%	25	27
100 to 199	39%	132,300	5%	12	10
200 to 499	44%	207,200	6%	16	16
500+	41%	202,500	6%	15	16

**Source:** NESS05 (Shury *et al.*, 2006)

**Base:** First column all establishments, remainder all employment.

**Note:** The number of employees not fully proficient has been rounded to the nearest 100.

### Skill gaps in relation to industrial sector

4.100 As in its analysis of vacancies, NESS05 explored variations in skill gaps in relation to industrial sector using SSC sector categories. *Table 4.13* summarises the results. The analysis showed, first, that skill gaps were a particular issue in the sectors covered by the following SSCs: People 1st, Improve Ltd, Skillsmart Retail, Cogent, Financial Services Skills Council and SummitSkills. In all these SSC sectors, employers were more likely than average to report having both staff that lacked proficiency and a higher proportion than average of staff that lacked proficiency. Secondly, the sectors where employers reported the lowest proportion of staff that were less than proficient were those covered by Skills for Justice, Skills for Logistics, Creative & Cultural Skills, and Asset Skills. In these sectors, fewer than 5 per cent of staff were reported as not being fully proficient.

*Skill gaps vary across the sectors covered by the Sector Skills Councils.*

**Table 4.13: Incidence and number of skill gaps by industrial sector**

	<b>% of establishments with any skill gaps</b>	<b>Number of employees not fully proficient (i.e. number of skill gaps)</b>	<b>% of staff reported as having skill gaps</b>	<b>Share of employment</b>	<b>Share of all skill gaps</b>
	Row percentages			Column percentage	
				%	%
Overall	16%	1,265,000	6%	100	100
People 1 <sup>st</sup>	20%	144,700	9%	7	11
Improve Ltd	21%	30,700	8%	2	2
Skillsmart Retail	20%	186,000	8%	11	15
Cogent	20%	33,500	8%	2	3
Financial Services Skills Council	20%	62,300	7%	4	5
SummitSkills	20%	14,000	7%	1	1
SkillsActive	18%	16,000	6%	1	1
Skills for Care & Development	20%	50,400	6%	4	4
Automotive Skills	19%	26,600	6%	2	2
SEMTA	19%	69,600	6%	6	5
ConstructionSkills	13%	57,200	6%	5	5
Lifelong Learning UK	19%	37,700	5%	3	3
Proskills	15%	18,500	5%	2	1
GoSkills	14%	19,500	5%	2	2
Lantra	11%	14,200	5%	1	1
Non-SSC employers	15%	264,000	5%	25	21
Skillfast-UK	13%	12,000	5%	1	1
Skillset	12%	6,200	5%	1	0
e-skills UK	12%	31,000	5%	3	2
Energy & Utility Skills	19%	11,000	5%	1	1
Skills for Health	18%	70,300	5%	7	6
Skills for Justice	19%	11,400	4%	1	1
Skills for Logistics	14%	27,000	4%	3	2
Creative & Cultural Skills	9%	8,100	4%	1	1
Asset Skills	11%	29,000	4%	3	2

**Source:** NESS05 (Shury *et al.*, 2006)  
**Base:** First column all establishments, remainder all employment.

4.101 *Table 4.14* shows the sectors where the share of skill gaps is disproportionately high or low compared with employment in that sector.

**Table 4.14: Sectors with a disproportionately high or low proportion of occupational skill gaps compared with employment**

	<b>Disproportionately HIGH share of employees with gaps relative to employment</b>	<b>Disproportionately LOW share of employees with gaps relative to employment</b>
<b>Managers</b>		Lantra (14% v 30%) ConstructionSkills (17% v 24%) SummitSkills (6% v 20%) Skillsmart Retail (9% v 16%) Automotive Skills (8% v 19%) People 1st (10% v 17%) Asset Skills (12% v 20%) Skillset (14% v 26%) Creative & Cultural Skills (15% v 26%)
<b>Professionals</b>		Asset Skills (2% v 10%) e-skills UK (9% v 15%) Skillset (3% v 9%) Non-SSC employers (14% v 20%)
<b>Associate professionals</b>	ConstructionSkills (19% v 10%)	e-skills UK (8% v 17%) Skills for Health (15% v 23%)
<b>Administrative occupations</b>	Skills for Justice (41% v 33%) Skillset (28% v 14%)	SummitSkills (7% v 13%)
<b>Skilled trades</b>	SummitSkills (60% v 47%) Automotive Skills (41% v 32%) GoSkills (16% v 9%) Skills for Logistics (9% v 3%)	Skillset (5% v 14%)
<b>Personal service occupations</b>	Lantra (11% v 5%) Skills for Health (39% v 28%) Skills for Care & Dev't SSC (59% v 45%)	
<b>Sales and customer service occupations</b>	Skillfast-UK (26% v 14%) e-skills UK (45% v 23%) Financial Services Skills Council (34% v 24%) Skillsmart Retail (64% v 53%)	
<b>Machine operatives</b>	Cogent (31% v 25%) SEMTA (36% v 28%) Improve Ltd (38% v 27%) Proskills (41% v 31%) Skillset (12% v 3%)	
<b>Elementary occupations</b>	Lantra (35% v 21%) SummitSkills (14% v 8%) People 1st (65% v 56%) Asset Skills (25% v 19%) Skillset (10% v 3%) Creative & Cultural Skills (18% v 12%) SkillsActive (27% v 20%)	

**Source:** NESS05 (Shury *et al.*, 2006)

## Local and regional patterns of skill gaps

- 4.102 The proportion of employers reporting skill gaps within their workforce also varied quite considerably by region, ranging from 13 per cent of employers in London to 23 per cent of employers in Yorkshire and the Humber, compared with the national figure of 16 per cent (see *Table 4.15*). When skill gaps were expressed as a percentage of employment, there was less variation. Only in Yorkshire and the Humber, and the South East were the proportions of skill gaps reported greater than the proportions of employment in the region.
- There are regional variations in skill gaps.*

**Table 4.15: Incidence and number of skill gaps by region**

	% of establishments with any skill gaps	Number of employees not fully proficient (i.e. number of skill gaps)	% of staff reported as having skill gaps	Share of employment	Share of all skill gaps
	<i>Row percentages</i>			<i>Column percentages</i>	
				%	%
<b>Overall</b>	<b>16%</b>	<b>1,265,000</b>	<b>6%</b>	<b>100</b>	<b>100</b>
Yorkshire and the Humber	23%	156,500	8%	10	12
North East	21%	53,300	6%	4	4
South East	18%	231,700	7%	16	18
North West	16%	165,000	6%	13	13
West Midlands	16%	110,200	5%	11	9
East Midlands	15%	106,700	6%	8	8
South West	15%	107,500	5%	10	8
Eastern	15%	115,100	5%	10	9
London	13%	218,800	6%	18	17

**Source:** NESS05 (Shury *et al.*, 2006)  
**Base:** First column all establishments, remainder all employment.  
**Note:** The number of employees not fully proficient has been rounded to the nearest 100.



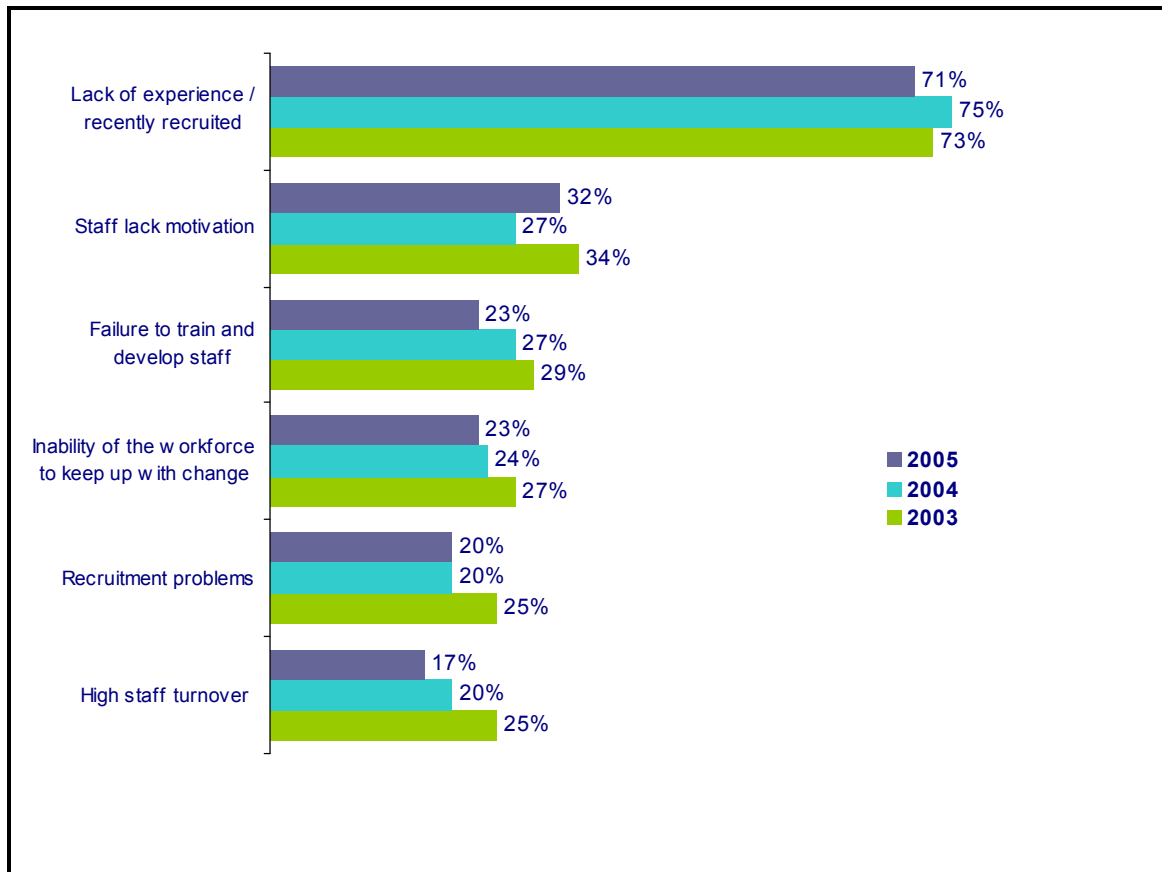
## Causes and implications of skill gaps

4.103 Employers who were experiencing skill gaps were asked what the main causes were of their staff not being fully proficient (employers were asked about the causes of skill gaps for *one* occupation only, selected randomly where more than one skill gap was reported). *Figure 4.9* shows, at an overall level, the reasons that were given. It should be noted that results are based on skill gaps followed up in detail during the interview rather than all establishments with skill gaps: that is, it uses an employee-based measure with results showing the proportion of skill gaps that are caused by various factors, as opposed to the proportion of establishments that report skill gaps with these causes. The results reveal that the main cause was *staff lacking experience* (71 per cent of all skill gaps). This, of course, leaves open the question of why staff members were lacking in experience: whether it was because of taking on many new staff, the introduction of new production processes or shifts into new markets. The remaining five causes were more specific and relate in many respects to failings of the employers, including:

- staff lacking motivation. Again, a question arises about why employers were unable to motivate staff;
- a failure by the employer to train and to ensure that staff kept pace with change;
- inability of the workforce to keep pace with change. This begs the question why the employer was unable to ensure this;
- recruitment problems and high labour turnover. A follow-up study to ESS2001 suggested that retention was sometimes given insufficient attention by employers faced with recruiting in tight labour markets (Hogarth and Wilson, 2002).

*Employers are asked about the main causes of skill gaps in NESS. The main reason was staff lacking experience.*

**Figure 4.9: Main causes of skill gaps**



**Source:** NESS05 (Shury et al, 2006).  
**Base:** All skills gaps followed up. (2005: unweighted=109,310; weighted=1,059,326 2004: unweighted=85,175; weighted=1,240,744 2003: unweighted=112,789; weighted=1,176,477).

4.104 Where employers reported skill gaps, just under two thirds of them reported that it had a major impact upon the business (62 per cent), with the main impact being an increased workload for other members of staff (reported by 54 per cent of workplaces). The evidence on skill gaps, however, needs to be viewed in context. Analysis of the ESS1999 revealed that there was a 'U'-shaped relationship between overall levels of skill deficiency and company performance (Bosworth *et al.*, 2000; Bosworth *et al.*, 2001). In summary, where workplaces were in decline they were consequently losing staff. Assuming that their best staff left first, this suggests that knowledge gaps will emerge. Businesses that were growing also tended to report high overall levels of skill deficiency because they were in a growth period with challenging product market strategies, which

*A significant number of employers report that skill gaps have a major impact on business.*

meant that human resource development was struggling to keep pace with other changes in the business (Hogarth and Wilson, 2001).

- 4.105 The evidence about skill gaps and performance also needs to be seen in the context of developing high performance workplaces (Phillpott 2006). If employers are expected to improve their productivity and hence raise their demand on skills, typically through a business strategy, then this will result in more skill gaps emerging. As workplaces raise their game there will be, at least over a transitional period, a gap between the skills extant in the workplace, which will have been developed to meet the old business strategy and those required to serve the new business strategy.
- As employers improve performance skills gaps are likely to emerge, at least temporarily.*

### Latent Skill Gaps

- 4.106 'Latent skill gaps' refer to the difference between what good practice suggests is necessary to prepare for future competition and that which is actually practised (Bosworth *et al.*, 2001). They are difficult to quantify, but insights have been obtained from international comparisons of matched plants undertaken by the National Institute for Economic and Social Research (Mason *et al.*, 2007).
- Latent skill gaps are difficult to quantify.*
- 4.107 In general, the evidence indicates that where it is possible to identify a latent skills gap, rectifying it is not simply a question of increasing skills levels, at least over the short run. Where companies have failed to keep pace with other 'good' business practices as well. In some respects they are locked into a vicious spiral where declining markets leave few financial resources to invest in skills, product or process development, which further erodes their market position. This has many of the hallmarks of the low-skills equilibrium argument (Finegold and Soskice; Wilson and Hogarth, 2003). Evidence from the latest international comparative research in relation to SSCs suggests that investment in skills is unlikely to allow the poorer performing sectors to catch up with their better performing international competitors in the short run without other aspects of the business being addressed simultaneously (Mason *et al.*, 2007)

## Conclusion

- 4.108 A detailed picture of skill imbalances has been provided above. Imbalances produce ‘winners’ and ‘losers’. Some individuals do well as a result of the excess demand for their services (that is, higher lifetime earnings) whereas others may do less well where there is excess supply. Similarly, some employers are able to capture a share of scarce skills (through a combination of recruitment and retention practices) and are able to capitalise upon the acquisition by charging a premium for their goods or services. These patterns appear to be persistent.
- 4.109 Do imbalances matter? A number of points can be made:
- there is little indication of wage-push inflation in the economy, so in this sense the wage premiums attached to higher level skills resulting from their relative scarcity is not a threat to macroeconomic stability;
  - imbalances (shortages), however, could impede successful operations by private and public organisations, resulting in a range of different costs (missed opportunities, long-term loss of business, and so on);
  - surpluses imply wasted investment, which could be significant if the education and training involved is particularly costly (reflected in skills being under-utilised, people moving abroad, and so on);
  - the evidence on rates of return to the individual suggests that on average, at current wage levels, these are sufficient to have made most investment in higher level skills worthwhile.
- 4.110 The evidence relating to the stability in the level of skill shortages over recent years suggests that skills shortages are mostly frictional, resulting from a natural aggregate rate of labour turnover in the economy rather than reflecting structural change as a result of significant changes in the pattern of demand for skills from employers. *Evidence suggests that skill shortages are mostly frictional.*
- 4.111 A strong qualification should be placed on the finding that the current level of imbalances between the demand for, and the supply of, skills is not an economic challenge at present. This is because of

the danger of looking at the situation in aggregate. A number of points can be made:

- there is a range of generic skills that are increasingly important in the workplace, such as influencing skills, which employers are experiencing difficulty in locating;
- there is a range of technical and academic skills that obtain a premium (notably those requiring high levels of numeracy);
- the vocational route through the FE sector is not generating rates of return comparable to the academic route. Employers appear not to value vocational qualifications as much as academic ones. The difficulty of establishing parity between academic and vocational pathways is one experienced throughout most of Europe;
- the LSC is working with partners to encourage more individuals and employers to take up Apprenticeships. More work is needed to increase the actual and perceived value of vocational qualifications to employers;
- there are regions and industrial sectors, important to the economy, which are disadvantaged by the current level of skill mismatch (notably, engineering and construction and the Midlands and North West);
- skill levels are increasing, with more awareness from employees that they need to update their skills, but a substantial percentage of employers do not provide training to their employees (see Chapter 3), thereby potentially increasing the level of (latent) skill gaps;
- differences with competitor countries remain. Recent SSSA research reveals that there are a number of SSCs finding that skill levels in their sector fall well behind those of competitor countries.

Skills mismatches and imbalance can have serious implications for the future if they are not addressed. The types of imbalance listed are a challenge to the future of the economy and need to be tackled if future economic performance is to be optimal.

# Chapter 5: Skills, Non-Employment and Social Exclusion

## Overview and Summary

5.1 Social exclusion represents a serious social issue: the divisions that result can lead to a breakdown in social and political order, with severe economic consequences. Social exclusion is particularly associated with economic inactivity and for that reason the best route to inclusion is employment. Employment, however, is no guarantee of social inclusion. Employment in poor-quality jobs, with low skills, low pay and low esteem, can pose almost as many problems as no jobs. While many people will undoubtedly benefit from expected future economic and technological developments, there is a danger that such change will polarise society into winners and losers. The high proportion of people with no formal qualifications, or who lack basic skills, raises important issues regarding the benefits to society that can arise from eradicating these deficiencies in the population. Low skills, low incomes and non-employment are often associated with poverty (especially child poverty), poor health, anti-social behaviour (including criminality) and these associated problems are often transmitted from one generation to the next. Improving social welfare and cohesion by equipping people with better skills would not only bring benefits in terms of the improvement in their employability but would also bring benefits to society well beyond the purely economic.

*Social exclusion is a major social issue with serious costs if not addressed.*

*Social exclusion is associated with a range of social problems.*

5.2 Ideally societies manage to achieve a balance between wealth creation and social cohesion. Ensuring that people acquire qualifications and skills as part of their formal education can address problems of poorly developed basic skills, unemployment and social exclusion. Research, however, on government-funded training programmes indicates that they tend to have only modest success at producing qualifications or employment outcomes for those currently out of work. Formal education is not the only way in which people acquire skills and there will be a growing need to train and re-train the adult workforce after the normal period of formal education.

*Helping people acquire skills and qualifications is an important way to tackle social exclusion...*

- 5.3 There is a strong link between low skills and lack of qualifications and social exclusion. Whether it is manifest in relation to access to paid work or retention and advancement in employment, people with low skill levels and without qualifications are at a considerable disadvantage in the job market. As has been demonstrated elsewhere in *Skills in England*, the level of skill used in most jobs – as reported by the 2006 Skills at Work Survey – is increasing, even in elementary jobs. Thus people with low levels of skills will be at an increasing disadvantage.
- ... since people without qualifications are particularly at risk of social exclusion.*
- 5.4 Despite the clear link between skills, qualifications and social inclusion, the acquisition of skills through education and training is unlikely to be sufficient on its own to combat worklessness or overcome other forms of social exclusion. People with low skills often face other barriers to work or job retention. These include poor job search skills, a lack of (desirable) jobs, a lack of affordable care provision for other household members and limited travel horizons. Some employers, as well, are reluctant to consider non-employed people for their vacancies or discriminate against some sub-groups in the labour market. In the past, such constraints on employment have been addressed through the provision of public employment services (Jobcentre Plus) and Welfare to Work initiatives. It was a key recommendation of the *Leitch Review* that the Skills Strategy and Welfare to Work initiatives need to be better aligned and integrated.
- Tackling low skills is unlikely to be enough on its own to combat worklessness.*
- It is essential to align policy on skills with Welfare to Work initiatives.*

## Introduction

- 5.5 Social exclusion is a term generally taken to describe situations where people or areas suffer from a combination of linked and mutually reinforcing problems – such as unemployment, poor skills, low incomes, poor housing, high crime, poor health and family breakdown (Hills et al., 2002). Social exclusion is thus a multi-faceted concept relating to a lack of, or limited, participation in key domains of modern life, including:
- work;
  - consumption;
  - wealth;
  - community life;
  - citizenship.
- 5.6 A key dimension of social exclusion is exclusion from
- Social exclusion is a multi-faceted concept.*

paid work. It is not the only manifestation of exclusion. But a lack of employment is a key indicator of exclusion and a factor reinforcing and exacerbating other aspects of social exclusion, including poverty, homelessness, ill-health, restricted mobility, and so on. Moreover, it should not be assumed that those who have been successful in entering work are free of the risk of social exclusion. Low pay and the increasingly episodic and insecure nature of many areas of employment have meant that even those in paid work also face the risk of social exclusion.

- 5.7 The importance of tackling social exclusion was emphasised by the formation of the Social Exclusion Unit (SEU) as one of the first actions of the newly elected Labour Government in 1997. In 2006, the SEU became the Social Exclusion Task Force (SETF) based in the Cabinet Office. The role of the new Task Force was to coordinate the Government's drive against social exclusion and provide a cross-departmental approach to social exclusion. The SETF's task is to identify the most at risk and focus on specific hard-to-reach groups including children in care, people with mental health problems, and teenagers at risk of pregnancy reflecting their low skill characteristics.
- 5.8 Miliband (2006) draws a distinction between 'wide' and 'deep' social exclusion. Wide social exclusion refers to situations where a large number of people are socially excluded on at least one indicator of exclusion. Non-employment is an example of wide exclusion. In Britain in 2006 around a quarter of working age people were not in employment, and of those around 80 per cent (or over 20 per cent of all working age adults) were classed as economically inactive, that is not seeking employment. While some are inactive through choice (in full-time education, for example, or retired on an occupational pension) many are not in employment because they are unable to obtain paid work or the returns to employment are insufficient. Where the non-employed experience additional disadvantages (multiple and overlapping disadvantages) their situation is one of deep exclusion.
- 5.9 Clearly there is more to social exclusion than non-employment; but non-employment is arguably the most fundamental aspect of exclusion in a market economy. Without employment individuals lack earned income and are likely to be dependent on state benefits; while households experience poverty



and its associated consequences (such as poor health, educational disadvantage and so on). Employment also has a social dimension: employment confers social status on individuals and non-employment is often associated with low self-esteem and an estrangement from society. It is beyond the scope of this section to examine the full complexities of deep exclusion. Instead this section is focused on that key aspect of wide exclusion. Exclusion from employment and examines the relationship between skills and qualifications (or lack of them) and non-employment (Levitas et al., 2007).

## Low Skill and Disadvantage

- 5.10 Based on an analysis using a nine-year sequence of Labour Force Survey data, Berthoud identified six sub-groups of people at high risk of non-employment (Berthoud, 2003). These were:
- men and women without partners (especially lone parents);
  - people with a disability;
  - people in their 50s;
  - those living in areas of weak labour demand;
  - members of certain ethnic minority groups;
  - those with low qualifications and skills.
- 5.11 When considering the labour market position of people with low skills, it is important to recognise that low skills are often associated with other risks of social exclusion. For instance, there are around 2 million people in the UK who are over 50 years of age and possess no qualifications, while 1.8 million people are disabled and possess no qualifications. While truly multiple disadvantage is less common, there are substantial numbers of individuals with three or more risk characteristics. Around 135 thousand people are disabled, a member of an ethnic minority, and possess no qualifications while around 73 thousand are ethnic minority members aged over 50 with no qualifications (House of Commons, 2007).

*The low skilled are one of a number of groups at high risk of exclusion but...*

*...low skills are often associated with other disadvantages.*

- 5.12 Low levels of skill and qualifications can be both a cause of disadvantage and a consequence. For instance, a lack of qualifications may arise from a disrupted education as a result of poor health or disability in childhood or as a consequence of becoming a single parent at an early age. Older people may lack qualifications because few in their age cohort remained in full-time education beyond the minimum school leaving age. They may also have obsolete skills or experience a work-limiting disability or ill health. Similarly, the disadvantage of members of ethnic minorities may be compounded by basic literacy and other language problems, or they may have unrecognised qualifications from outside the UK. In general, the more disadvantages faced by an individual, the greater the risk of social exclusion. Indeed, more than 90 per cent of people with all six disadvantages identified by Berthoud were non-employed (Berthoud, 2003). *Low skills can be both a cause and a consequence of additional disadvantages.*
- 5.13 While many of the processes leading to social exclusion are associated with individuals, it is often the whole household that is excluded. The proportion of households in the UK that contained no working adult peaked at almost 20 per cent in 1997 although the proportion has fallen since. While the majority of such households consist of single adults, a substantial minority are households containing a couple where neither works (Gregg and Wadsworth, 2003). Moreover, the reasons for worklessness amongst couple households have changed over time: unemployment was the most common reason during the 1980s, but in the past decade economic inactivity (where no paid work is sought) was the predominant reason for worklessness amongst couple households (Hasluck and Green, 2005). *Social exclusion is evident at the household level as well as that of the individual.*
- 5.14 The economic and social situation of households tends to reflect the characteristics of household members including their qualifications and skills. While individual and household skills levels are the same (by definition) in the case of a single person, the qualifications and skill levels of couple households tend to be related. There is evidence that individuals tend to pair with others of a similar social and educational level (a process referred to as assortative mating). As a result, workless households often contain partners who share an equal educational or skill disadvantage. Analysis of the Labour Force Survey has shown that more than a third (36 per cent) *People with low skills often live in households with other unskilled people.*

of all people in workless households have no qualifications, compared with just 7 per cent who have a degree or equivalent (Walling, 2004). Cohabiting couples represent a particularly dynamic household type, breaking up and reforming more frequently than married couples. Cohabiting couples are more likely to have left school early and are more likely to have lower level qualifications (Marsh and Perry, 2003).

- 5.15 Low-skill households are particularly at risk of social exclusion because the relative demand for unskilled and semi-skilled occupations has fallen in recent decades and such occupations often command only low wages (Wilson et al., 2005). This increases the risk of individual household members becoming unemployed while at the same time reduces the incentive to seek work, since out-of-work benefits are high relative to earnings in work. Nickell has argued that this weakening of the low-skill job market was in evidence with regard to men suffering a disability or long-term sickness and who were most vulnerable in a declining job market. This led to a large increase in the number of men claiming Incapacity Benefit. But it was also associated with an increase in the number of workless households, because low-skilled men often had partners who were also low skilled and vulnerable to unemployment (Nickell, 2004).
- The low skilled are at risk of worklessness because the relative demand for unskilled jobs has been declining.*
- 5.16 Another particularly vulnerable group are young people aged 16-18 years who are not in education, employment or training (NEET). The NEET group is small – estimated to have been around 10 per cent of the 16-18 population since 2001 and to number around 122 thousand in England at the beginning of 2006 (Connexions, 2007) – but very diverse. The NEET group includes: (i) young people with behavioural and social problems who come from households where worklessness is the norm; (ii) young people who lack direction or motivation and are NEET between spells in further education or employment without training; and (iii) young people who have taken a ‘gap year’ or similar break before progressing to further or higher education.
- The NEET group of young people is at particular risk of social exclusion...*
- 5.17 While the diversity of the NEET group makes generalisation difficult, a substantial element of it can be regarded as low skilled, having poor educational attainment and a record of persistent truancy. This poor educational attainment is often associated with other characteristics of disadvantage, for instance teenage pregnancy, drug abuse, disability and mental health issues and criminal and anti-social behaviour.
- ...although the NEET group is very diverse.*

Another key feature of the NEET group, and one that makes them difficult to target for policy, is the high level of 'churn' amongst 16-18 year olds, with young people moving rapidly between different education, training and employment options with spells of NEET in between. It has been estimated that just 1 per cent of those who were NEET at age 16 remain so over the entire period up to age 18 (PMDU, 2005).

- 5.18 The low educational attainment of many in the NEET group makes them vulnerable to changes in the nature of the demand for labour. The percentage of young people who are NEET is strongly related to the performance of the local labour market, with high proportions of NEETs in areas like the North East of England, North West and the West Midlands, lowest in the East of England, the South West and south East (LSC, 2006). Areas with a strong demand for skilled labour tend to have high levels of NEETs, as 16-18 year olds with no or poor qualifications tend to find it difficult to gain initial entry to the job market (a factor explaining the high level of NEETs in London) (Mayor of London, 2007).

### The low-skilled population

- 5.19 It is important to note that it is difficult to observe and measure skills, making the identification of the 'low-skilled' population problematic. Skills relate to an individual's competence to perform job-related tasks. Since such competencies are not normally directly observable, it is necessary to use a proxy measure for skill. A common proxy for skill level is level of qualification. It is acknowledged that qualifications are imperfect measures of skill level as they fail to take account of uncertificated skills such as those acquired through work experience on the job. Nonetheless, the range of jobs now requiring formal qualifications (on entry or subsequently) is increasing rapidly and, while imperfect, qualifications remain the only readily available measure (Bell and Hansboro, 2007).

*A proxy for lack of skill is a lack of qualifications.*

- 5.20 According to Annual Population Survey estimates, the number of people in the English working age population without any qualifications is around 4.3 million and a further 4.5 million have qualifications only at NQF Level 1. If NQF Level 2 is to be regarded as the minimum qualification and skill level for the future, this suggests that nearly 9 million people (or just over 30 per cent of the working age population) can be regarded as low skilled. The proportion of women who can be regarded as low skilled on this

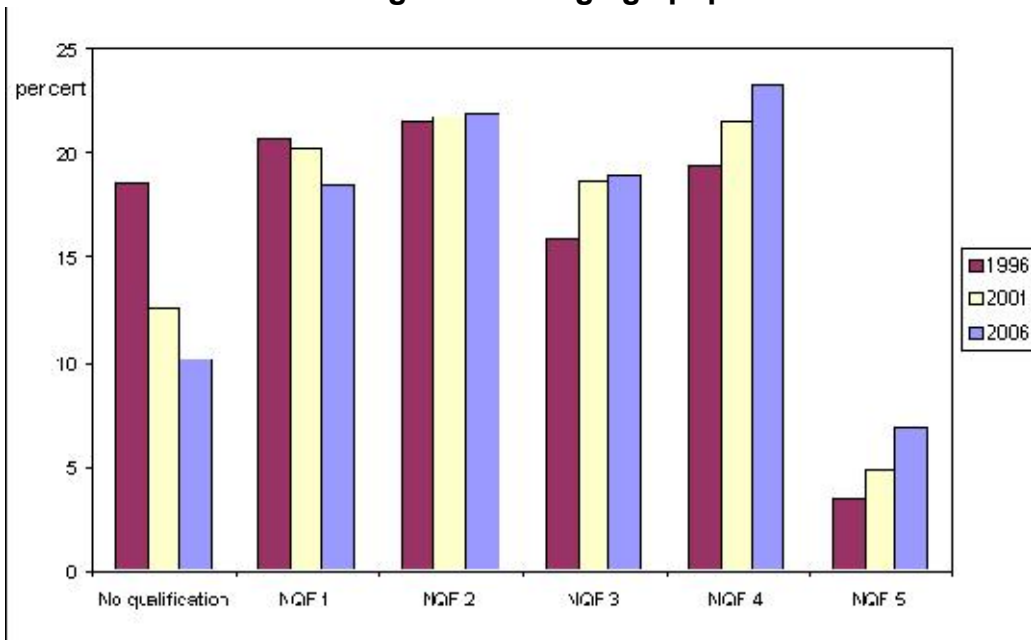
*Over 4 million people of working age in England have no qualifications.*

measure is slightly larger (at 32 per cent) than that of men (at 28 per cent).

5.21 While the proportion of low skilled in the working age population appears large, it should be noted that the proportion has been falling in recent years. This is partly the result of a cohort effect, as older and less well qualified people leave the working age group and are replaced by young people who are better qualified. This trend is evident in *Figure 5.1*, which indicates that the proportion of unqualified people has fallen from a little under 20 per cent in 1996 to around 10 per cent by 2006. The proportion of people with no higher than a NQF Level 1 qualification has also fallen (although proportionately not to the same extent) while the proportion of those with higher level qualifications (NQF Level 3 and NQF Level 4 or above) has increased.

*The proportion of unqualified people in the population has declined sharply in recent years.*

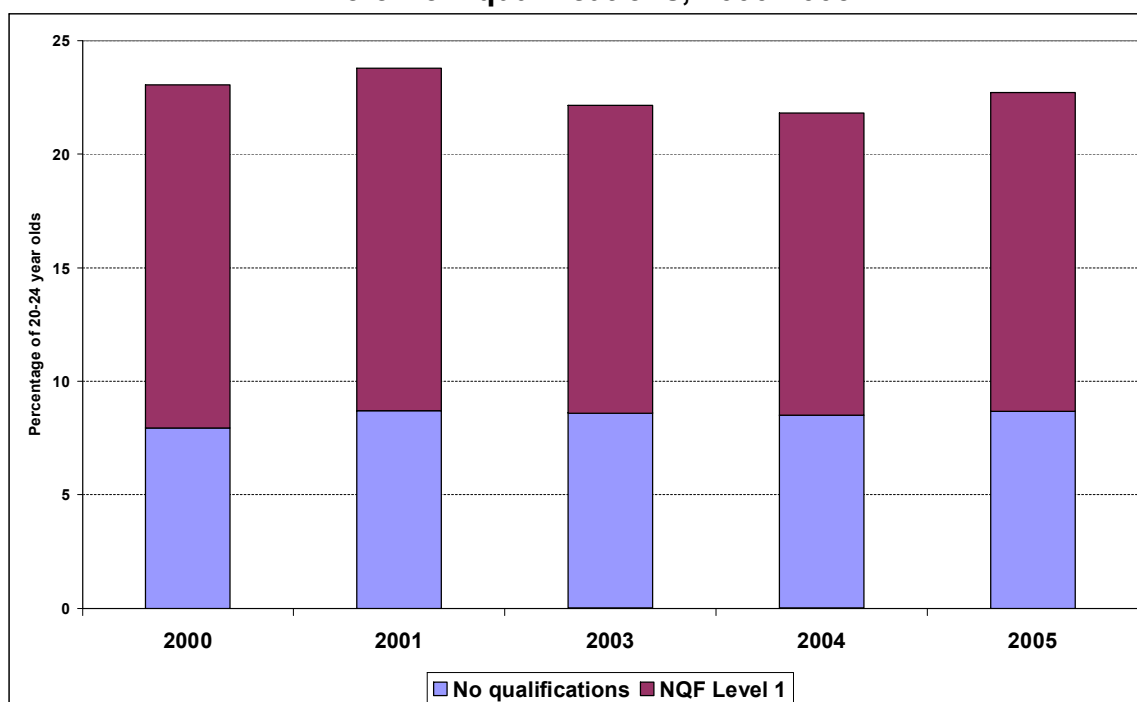
**Figure 5.1: Distribution of qualifications amongst the English working age population**



**Source:** Labour Force Survey

- 5.22 It might be reasonable to infer from *Figure 5.1* that the cohort effect will continue to reduce the proportion of unqualified people in the future. Nevertheless, a note of caution is required in this regard. First, it is evident from *Figure 5.1* that the fall in the proportion of unqualified between 2001-2006 was less than in the preceding period (1996-2001). Evidence from the Labour Force Survey/Annual Population Survey shows that the proportion of 20-24 year olds who hold no qualification has barely changed since 2000, remaining at around 8 per cent (see *Figure 5.2*). This suggests that the proportion of the working age population that is unqualified is not likely to fall much below 8 per cent even in the long term. Moreover, it is likely that the small proportion of working age people who remain unqualified despite the considerable efforts of the education system will be much more disadvantaged and difficult to help than previous generations of unqualified, many of whom did possess uncertificated skills.
- Around 8 per cent of 20-24 year olds hold no qualification.*
- 5.23 It is likely, therefore, that recent falls in the number of low-skilled people in the working age population represent a temporary and transitional effect as the older age groups with large proportions of unqualified are replaced by younger age groups with smaller proportions of unqualified people. Once this cohort effect works through, the composition of the working age population will stabilise at a new and lower level of low skilled. The low skilled (as indicated by a lack of qualifications at or above NQF Level 2) will, however, remain as a significant minority of the working age population of England for the foreseeable future and even after the full cohort effect has worked through (unless the level of unqualified amongst the young can be reduced still further). This is a cause for concern, not just because of the implications for productivity and competitiveness but also because of the strong association between low skill levels and social exclusion. This association is now considered in the remainder of this section.
- The recent fall in the number of unqualified may be temporary...*
- ...and those who remain unqualified may be the hardest to help.*

**Figure 5.2: Proportion of 20-24 year olds with no or low qualifications, 2000-2005**



**Source:** Labour Force Survey/Annual Population Survey

### Low skill and employment rates

5.24 Low employment rates are associated with lack of, or low levels of skill/qualification. *Figure 5.3* shows the employment rate for working age people between 2001 and 2006, grouped by broad level of qualification. The positive association between qualification level and employment rate is evident, with employment rates increasing as level of qualification increases. While people with low level qualifications (NQF Level 1) have low employment rates compared to other qualifications levels, it is the employment rate of people with no qualifications that is most markedly different from others in the working age population. It is also notable that the employment rate amongst people with no qualifications has actually been declining quite sharply in recent years.

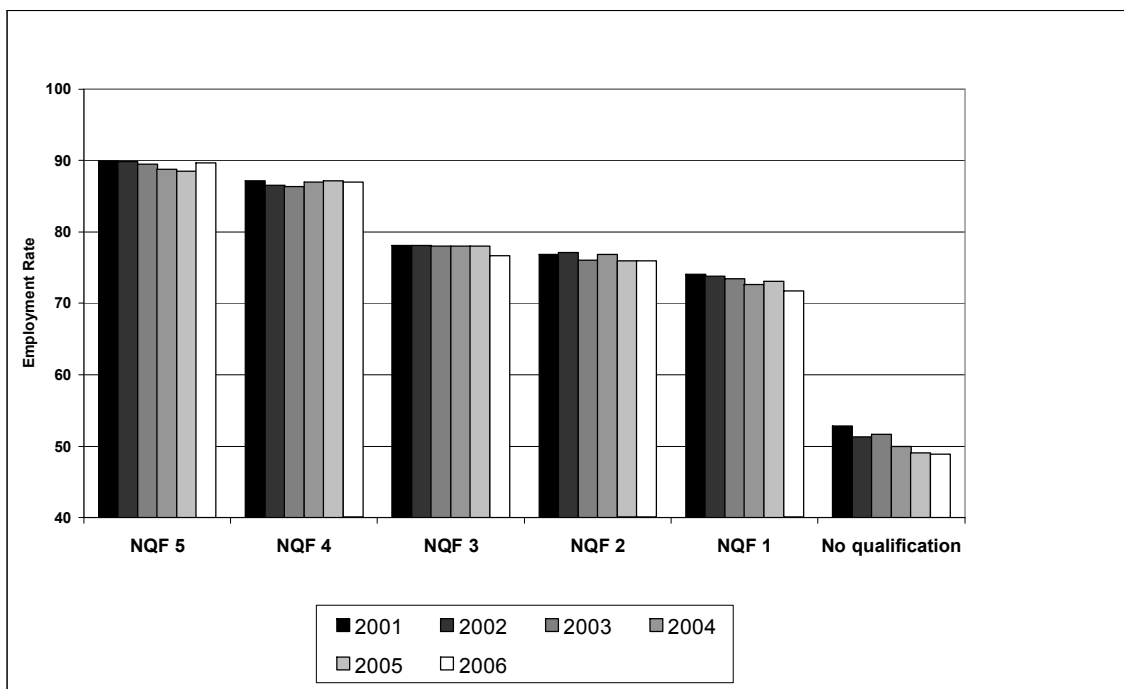
*The employment rate of people with no qualifications is very low.*

5.25 On average, women have a lower employment rate than men (see *Figure 5.4*). This low employment rate is particularly associated with motherhood (Berthoud and Blekesaune, 2007), with mothers having much lower employment rates than women with no children (while the employment rate of men is largely unaffected by fatherhood). The difference

*Unqualified women have a particularly low employment rate.*

in employment rates between women and men is greatest for those with no qualifications (15.9 percentage points in 2006) and smallest for those with higher (Level 4 and Level 5) qualifications (8.9 percentage points). This variation is likely to arise from differences in household structure, number and timing of children as well as differences in potential earnings and the ability to bear the costs of childcare. It should also be noted that the gender difference in employment rates has been diminishing over the past three decades, largely as the result of rising employment rates amongst mothers. This is probably a reflection of the rising proportion of mothers who hold higher qualifications.

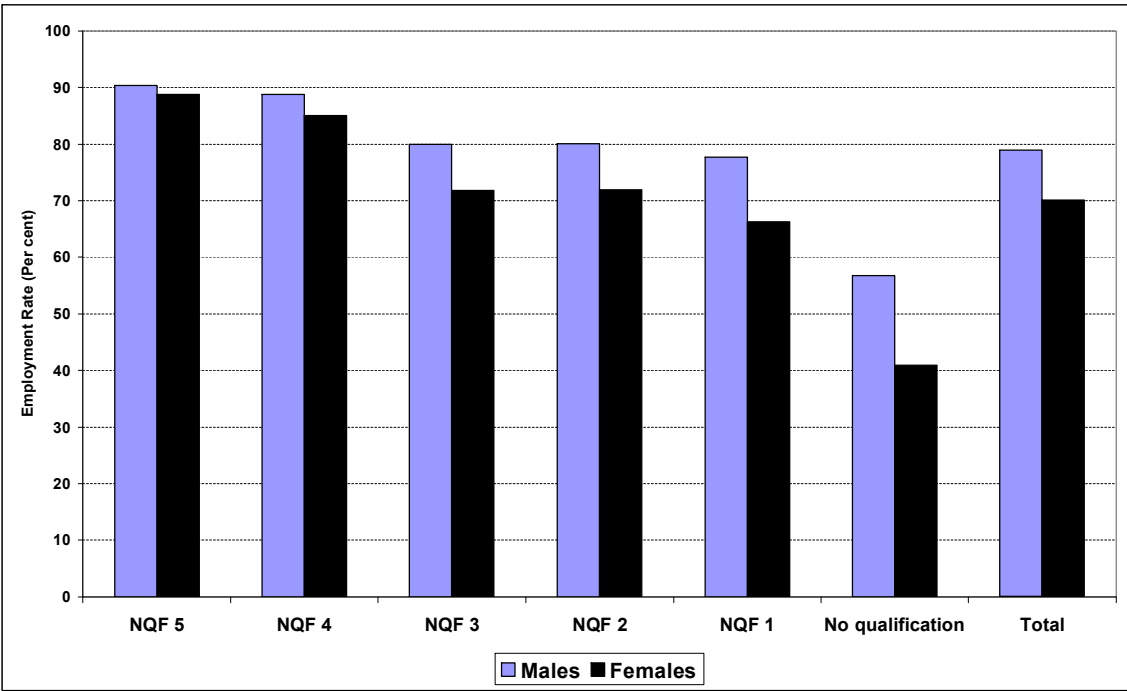
**Figure 5.3: Employment rates by level of qualification, England, 2001-2006**



**Source:** Labour Force Survey



**Figure 5.4: Employment rates by level of qualification and gender, England, 2006**



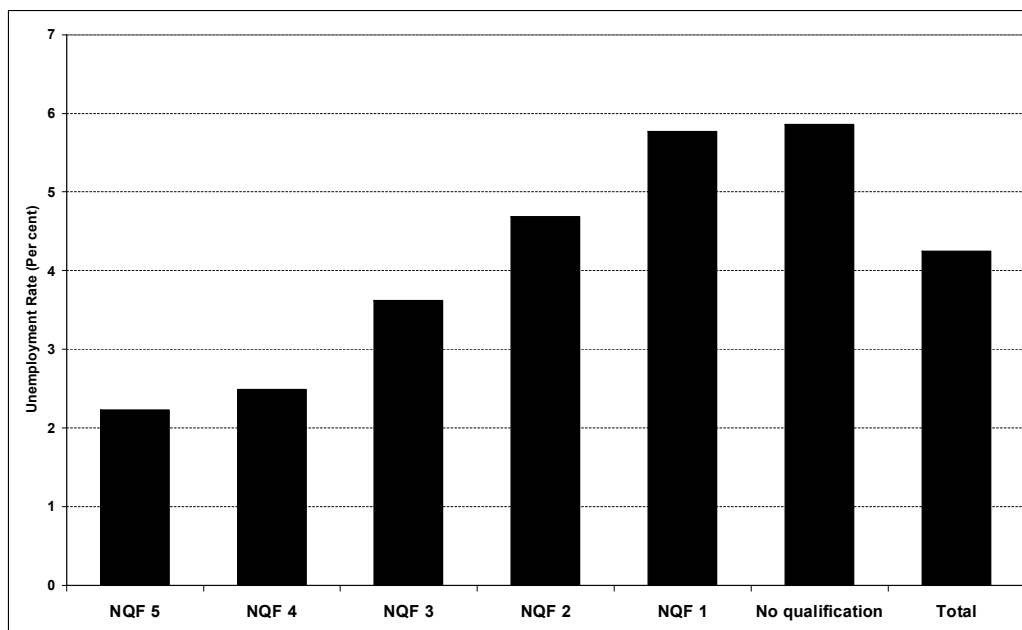
**Source:** Labour Force Survey

5.26 The pattern of gender differences in employment rates suggests, insofar as social exclusion is associated with non-participation in the labour market, that low-skilled women are particularly at risk of social exclusion, especially if they are single parents or partnered by another low-skilled person.

## Low skill and non-employment

- 5.27 The corollary of low employment rates is high non-employment rates. People with low skills tend to experience relatively high rates of unemployment: in 2006 the proportion of people with no qualifications who were International Labour Organisation (ILO) unemployed was 5.9 per cent compared with a national average of 4.2 per cent (see *Figure 5.5*). It is, however, the extent to which people with low skills have withdrawn from the labour market and become economically inactive that is most striking and of particular concern. Economic inactivity is strongly associated with social exclusion because it involves the cessation of attempts to seek paid work and signals a likely dependency on state benefits.
- Many unqualified people have withdrawn from the labour market.*

**Figure 5.5: ILO unemployment rates by level of qualification, England, 2006**

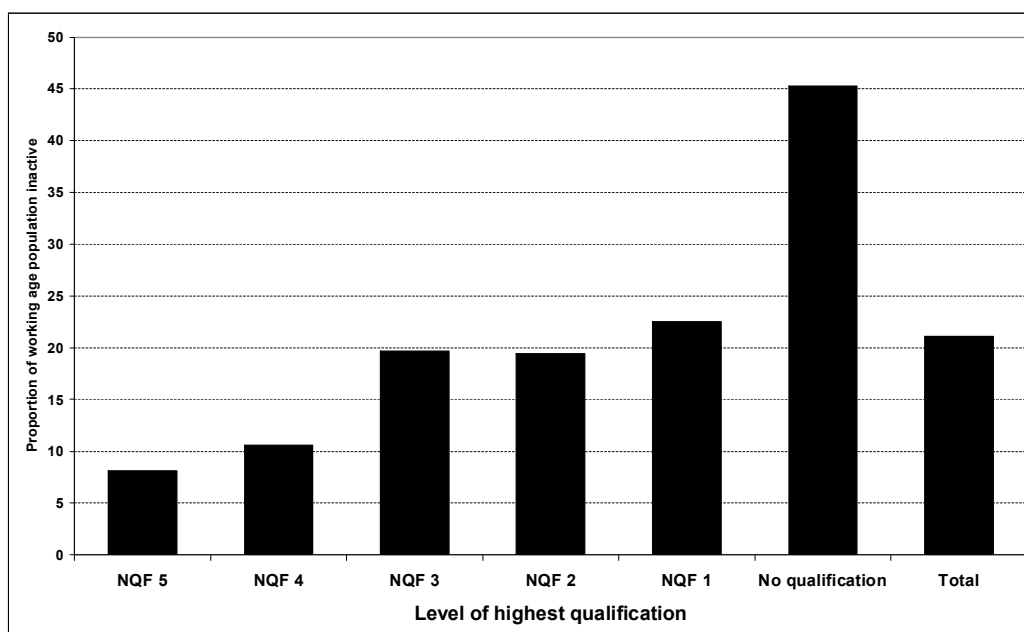


**Source:** Labour Force Survey

5.28 *Figure 5.6* highlights the high rate of economic inactivity amongst people with no qualifications compared to all other groups in the working age population (even those with NQF Level 1 qualifications). In 2006, over 45 per cent of the unqualified group were not in employment. Inactivity rates were much lower amongst people with qualifications, with inactivity rates declining as qualification level increased.

*Of the unqualified, 45 per cent were economically inactive.*

**Figure 5.6: Inactivity rates by level of qualification, England, 2006**

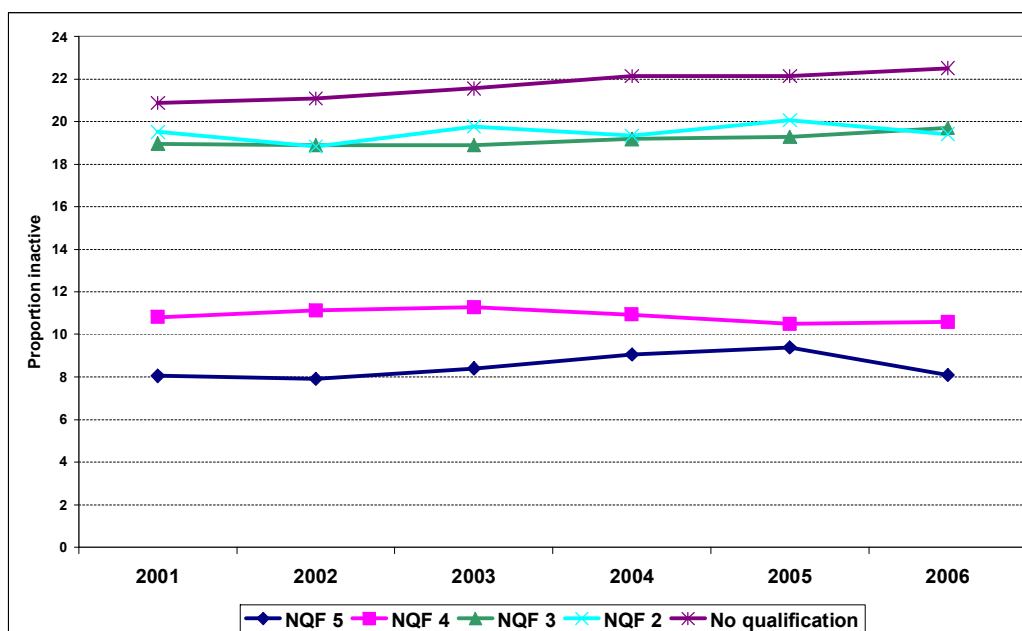


**Source:** Labour Force Survey

5.29 The overall pattern of economic inactivity has remained largely unchanged since 2001. But actually the inactivity rates of people with no, or low-level, qualifications have tended to increase slightly over the period, while those of the higher qualified have tended to fall slightly, widening the gap between the qualified and unqualified and suggesting something of a polarisation in the working age population (see *Figure 5.7*).

*The inactivity rate of the unqualified has risen slightly since 2001.*

**Figure 5.7: Inactivity rates by level of qualification, England, 2001-2006**



**Source:** Labour Force Survey

5.30 The reasons for economic inactivity are complex. In some instances individuals may be close to the ILO definition of unemployment but are classed as inactive because they fail on one or more aspects of that definition (they may not be actively seeking work or not immediately available for employment). In 2006 just over 3 per cent of working age people were inactive but were seeking a job and a further 22 per cent were not seeking a job but would like one. The great majority (74 per cent), however, were neither seeking a job nor wanting one. These people are furthest removed from the job market and it is amongst this group that the risk of social exclusion is greatest.

*Most of the unqualified inactive were not seeking work.*

5.31 The reasons for inactivity can be divided into a number of broad categories. These are:

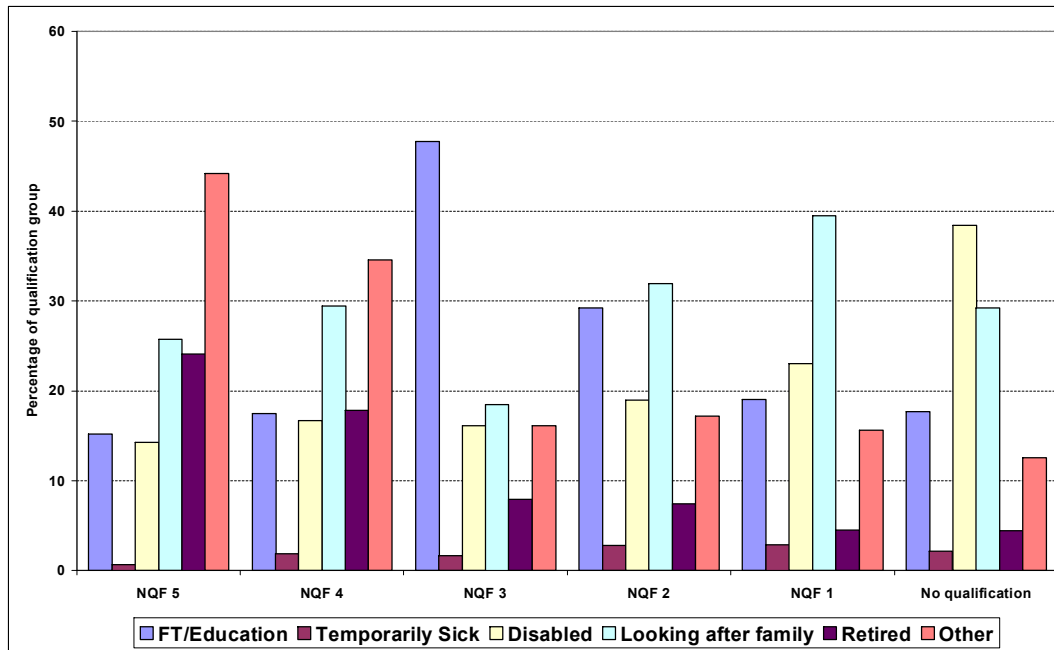
*There are many reasons for inactivity.*

- full-time education;
- caring for other family members;
- temporarily sick;
- disabled or chronically sick;
- retired;
- other.

While all of these reasons are cited by some people, irrespective of the educational attainment of the

individual, there are systematic differences across qualifications groups. The broad reasons cited by people for inactivity are set out in *Figure 5.8*.

**Figure 5.8: Reasons for inactivity by level of qualification, England, 2006**



**Source:** Labour Force Survey

5.32 Amongst people with no qualifications, the most commonly cited reasons for inactivity were disability/long-term sickness and caring responsibilities. These reasons were also significant amongst those with low-level qualifications (Level 1 and Level 2) but were much less so amongst people with higher level qualifications (for whom an assortment of ‘other’ reasons and retirement are most commonly mentioned). The reasons for inactivity cited by people without qualifications can be interpreted as a reflection of their disadvantaged position in the job market. Some may have been forced out of the market for low-skilled jobs by their disability or caring commitments. Others may have opted for inactivity because the alternative of employment on low pay was no more financially rewarding than life on welfare benefit.

*The main reasons for inactivity amongst the unqualified were disability or poor health or caring responsibilities.*

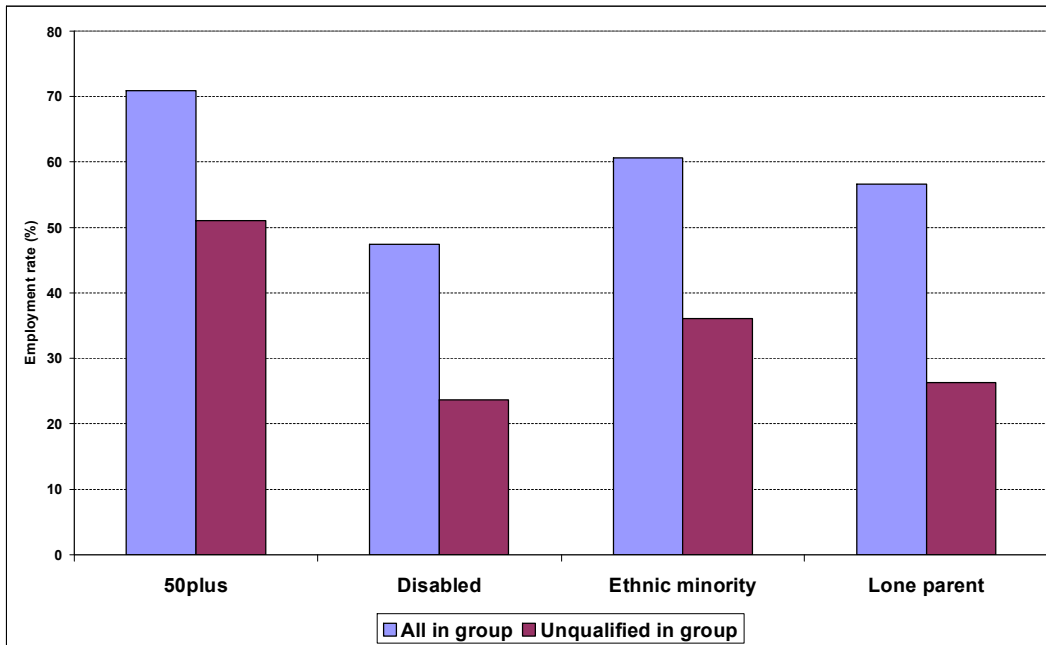
## Low skill and multiple disadvantage

- 5.33 Low skills and a lack of qualifications are often found in association with other disadvantages. Indeed, some disadvantages may be the cause, directly or indirectly, of the individual's lack of qualifications. Poor health in childhood may disrupt education while household poverty may limit educational attainment or increase the incentive to leave education to provide support for the household, and so on. In 2007 the House of Commons Select Committee on Work and Pensions presented evidence relating to overlapping disadvantage in Great Britain. It found that there were:
- 2 million people aged 50 plus who had no qualifications;
  - 1.8 million people with disabilities were also unqualified;
  - 553 thousand members of ethnic minority groups who had no recognised qualifications;
  - 357 thousand lone parents holding no qualification.
- 5.34 The impact of a lack of qualifications on top of another disadvantage is substantial. *Figure 5.9* shows the employment rates for four disadvantaged groups: people over 50, people with a disability, members of an ethnic minority group and lone parents. In each case the impact of low skills is to greatly reduce the employment rate, more than halving it in the case of lone parents and people with disabilities.

*Low skills are often associated with other aspects of disadvantage*

*Multiple disadvantage greatly reduces employment rates.*

**Figure 5.9: Employment rates for disadvantaged groups by qualification level**



**Source:** Commons Select Committee on Work and Pensions, Third Report, 2007

5.35 Despite the clear link between skills, qualifications, non-employment and, hence, social exclusion, the acquisition of skills through education and training is unlikely to be sufficient on its own to combat worklessness or overcome other forms of social exclusion. Many of the low skilled face other barriers to work, including poor job search skills, a lack of (desirable) jobs, a lack of affordable care provision for other household members and limited travel horizons. Some employers are reluctant to consider non-employed people for their vacancies or discriminate against some sub-groups in the labour market. Education and training may not only be ineffectual for the multi-disadvantaged without other forms of support but may actually be avoided by the unqualified, whose previous experience often suggests that any qualifications obtained are unlikely to lead to a job. In the past, such constraints on employment have been addressed through the provision of public employment services (Jobcentre Plus) and Welfare to Work initiatives. It was a key recommendation of the Leitch Review that policy for improving skills and Welfare to Work need to be better aligned and integrated.

*Multiple disadvantage means that the acquisition of skill is seldom sufficient on its own to combat the risk of exclusion.*

## The low-skill employment gap

5.36 As already indicated, around half of all people with no qualifications are not in employment and this is an employment rate that is significantly below the national average for working age people as a whole. In 2006 the gap between the employment rate of people with no qualifications and the average employment rate for people holding a Level 1 qualification or above was slightly below 30 percentage points. Reducing this gap has been an important Public Service Agreement (PSA) target for the Government and the Department for Work and Pensions. The Department is required to:

*“increase the employment rate of those with the lowest qualifications and significantly reduce the difference between the employment rate of this group and the overall rate” (DWP, 2006).*

In fact, the gap between the employment rate of the unqualified and the overall rate has remained persistently high and since 2001 has actually widened (see Figure 5.10), the only employment rate PSA target where performance has deteriorated.

5.37 Although the increase in the employment rate gap could be seen as an indication that policy has failed, it needs to be borne in mind that the employment rate in question relates to a shrinking number of unqualified people who are, arguably, increasingly the hardest to help and who face the greatest constraints on entering employment. Seen in this light, the increase in the employment gap could even be a consequence of success in reducing the number of unqualified people in the working age population. Nonetheless, it would appear that the ‘rump’ of unqualified people in England are becoming increasingly disadvantaged and distanced from the mainstream of the job market and increasingly at risk of social exclusion.

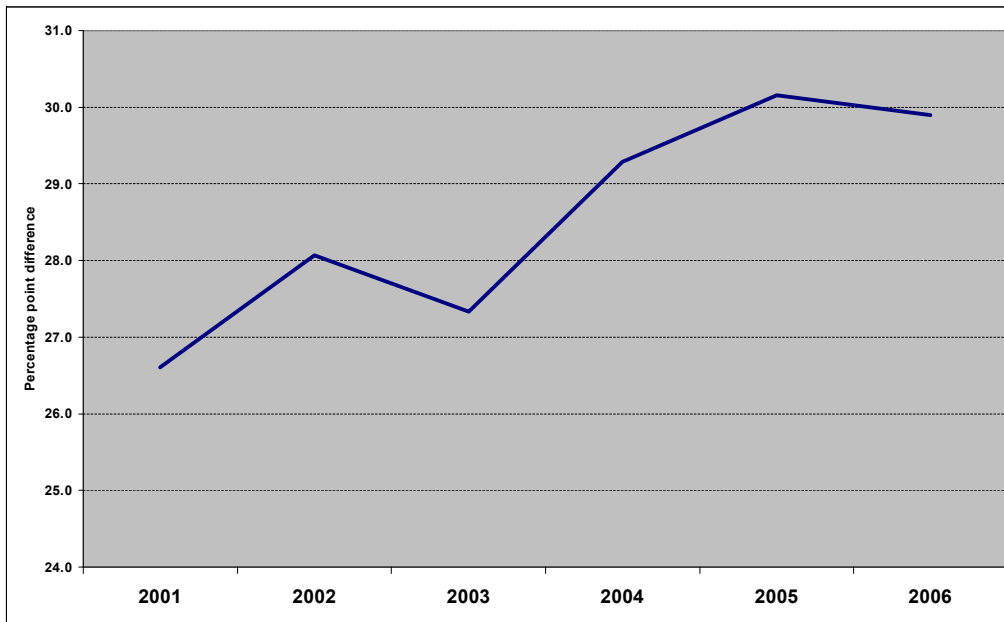
*Half of the unqualified do not have a job....*

*..and the gap between this group and others has increased.*

*While declining in numbers the unqualified represent an increasingly hard-to-help group.*



**Figure 5.10: Employment Rate 'Gap' for the Low Skilled, England, 2001-2006**



**Source:** Labour Force Survey

**Note:** The 'gap' is measured as the difference between the employment rate of people of working age with qualifications minus the employment rate of those with no qualifications.

### Low skill and sustainable employment

5.38 While an inability to enter paid work is one manifestation of social exclusion, the inability to retain a job and to advance within it is another. Each year large numbers of people flow from unemployment and economic inactivity into employment. Many of these return to non-employment within a short space of time. People who return to benefit within the first three months of employment tend to be those with low or no qualifications (Ashworth. and Liu, 2001). The Leitch Review estimated the number of repeat claims from people with no or low skills (qualifications) at around 800 thousand per year, or around a third of all annual Job Seekers Allowance claims (HM Treasury, 2006). The main reasons for this are that those with no or low qualifications tend to take low-paid and temporary jobs, have negative attitudes towards paid work, and often feel that benefits provide a more stable income stream than paid work (Carpenter, 2006).

*Even when the low skilled obtain work, they are at risk of entering unstable or low-paid jobs.*

5.39 The low skilled suffer from a double disadvantage when it comes to workplace training. In the first place they are less likely to be in employment. Second, even if in employment, the low skilled or poorly

*The unskilled are less likely to receive training when in employment...*

qualified are less likely than better qualified employees to receive any form of workplace training. According to Bell and Hansbro only just over 5 per cent of unqualified employees in Great Britain had received any training in the previous four weeks compared with 15 per cent of employees with Level 2 qualifications (Bell and Hansbro, 2007). Since training in the workplace is associated with increased employment stability (longer job tenure) and higher earnings, it is clear that the low skilled and unqualified are likely to be excluded from better quality jobs with prospects (Blundell et al., 1996). This suggests that the pattern of workforce training in the UK has, in the past, reinforced, rather than remedied, the past failings of the education system. This is a particular problem for England and the UK because the unqualified and low skilled group is such a large proportion of the workforce.

- 5.40 A further contributing factor inhibiting the acquisition of skills by low-skilled people is that the majority of working people with low skills (53 per cent) work for firms employing fewer than 50 staff. Such small firms are much less likely to provide training than larger firms: over 90 per cent of firms with more than 200 employees provide some off-the-job training while only 36 per cent of those employing less than 25 do so.
- 5.41 The variation in the volume of training received by different groups in the workforce is matched by a variation in type of training received. Low-skilled people are less likely to receive general, transferable skills than their more highly skilled colleagues. This leaves them with less flexibility and lower returns to training because they cannot easily progress up the jobs 'ladder'. *...and less likely to receive transferable skills*
- 5.42 There is a particularly notable gap between the amount of training received by those with no qualifications or only NQF Level 1 qualifications and the training received by those with qualifications at Level 2 or above. Once workers achieve basic skills and Level 2 qualifications, they appear more likely to receive training from their employers. This reinforces the point that basic skills and Level 2 skills are key for further progression and helping people to achieve Level 2 qualifications can significantly improve their prospects in the longer term.

## Promoting Social Inclusion through Improving Skills

- 5.43 Lack of skills, qualifications and work experience are associated with frequent or long periods of non-employment and, in turn, can lead to poverty, poor health, and social isolation. Facilitating entry to paid work has been a central element of the Government's strategy to tackle social exclusion. For instance, PSA objectives set for the Department for Work and Pensions have included:

- *Objective II: promote work as the best form of welfare for people of working age, while protecting the position of those in greatest need.*

Education, training and skills acquisition are seen as policy instruments that support the goal of increasing social inclusion as well as being vital for increasing productivity and economic competitiveness. As the Leitch Review concluded:

*"Skills were once a key lever for prosperity and fairness. Skills are now increasingly **the** key lever."* (p.3).

- 5.44 Elevating lack of skill to a key position in a strategy to reduce social exclusion raises two questions. First, is there a return to socially excluded individuals from the acquisition of additional skills and qualifications? Second, to what extent can the state help low-skilled individuals to improve their skills and does this improve their employment situation?

### The return to acquiring skills and qualification

- 5.45 It would appear self-evident that if a lack of skills (as measured by qualifications) is associated with an increased risk of non-employment, then the acquisition of qualifications and qualifications at a higher level should help reduce that risk and be associated with higher levels of employment in sustainable jobs. There is, indeed, a substantial body of evidence indicating an association between education level and qualifications, on the one hand, and the likelihood of being in employment and earning (see Chapter 4 for more detail).
- 5.46 The impact of qualifications on employment appears significant at an early age and is particularly evident for women. McIntosh found that unqualified school leavers who subsequently went on to obtain Level 2 qualifications were much more likely to be in

*Helping the unskilled obtain employment is an important policy goal.*

*There is strong evidence to indicate that qualifications increase the likelihood of being in employment.*

*Level 2 qualifications have a big impact on employment chances.*

employment than their peers who did not acquire any qualifications after leaving school (McIntosh, 2004). The impact of acquiring a Level 2 qualification was particularly great for female school leavers. A similar differential impact on the probability of women being in employment was noted by Dearden *et al.*, (2000; 2001) and Jenkins (2004).

- 5.47 Much of the impact of adult learning depends on the nature of the qualification obtained. Generally, vocational qualifications appear to have a lower impact than academic ones. This is particularly so in relation to low-level vocational qualifications. Both McIntosh (2004) and Dearden *et al.* (2000; 2001) found the impact of vocational qualifications on the probability of being in employment was substantially greater for Level 3-5 qualifications than for Level 1 or Level 2. In the case of Level 1 and Level 2, Dearden *et al.* actually found that the acquisition of such qualifications by men was associated with a reduced probability of being in employment.
- Vocational qualifications have a lower impact than academic ones.*
- 5.48 Once in employment, the impact of qualifications is less clear. Reports are mixed as to whether gaining a qualification leads to more sustained employment. Some US evidence suggests that non-employed people who entered employment after gaining a qualification during participation in a labour market programme were more likely to remain in employment for longer than similar non-employed participants who did not gain a qualification (Dench *et al.*, 2006). There is little strong evidence for the UK one way or the other but that which exists indicates that where unqualified people were helped into work by means of training and gaining qualifications, they often entered unstable employment.
- There is little evidence that low-level qualifications help obtain more stable jobs.*
- 5.49 As with the likelihood of employment, so too the evidence relating to the impact of qualifications on earnings is mixed. Jenkins, for instance, found that adult learning had little impact on the earnings of women who had gained a Level 2 qualification. Dickerson and Vignoles also find that there is little return to individuals from the acquisition of low-level qualification (Dickerson and Vignoles, 2007). They find the return to gaining a Level 1 qualification to be zero or negligible while the return to Level 2 qualifications depended critically on whether the qualification was an 'academic' or 'vocational' one. The returns were greatest if the qualifications were academic and much less if the qualifications were vocational.
- The financial returns to obtaining low-level qualifications appear low or negligible.*

- 5.50 Despite the rather mixed evidence relating to the returns to the acquisition of qualifications by low-qualified or unqualified people, there has been a long tradition of providing and/or subsidising education and training for this target group. This is deemed necessary in order to overcome the financial and other barriers that unqualified people face, especially when they are non-employed and outside the labour market. For this reason there have been, and continue to be, various policy initiatives that impact on the low skilled and potentially excluded. Such initiatives can be seen as operating at two levels. First there are broad, strategic policies that aim to improve the demand for, and supply of, skills across the board and are not specifically targeted at the socially excluded but intended to raise the whole distribution of skills across the workforce. Other policies are targeted to a greater extent on those with low skills or who are likely to be socially excluded. The latter are considered below.

*There is a strong tradition of providing training for the unqualified workless.*

### **Skills policy and the low skilled**

- 5.51 Since 1997 there have been significant reforms of both policy itself and the institutions charged with delivering learning and skills policy. The effects have been felt across the board, not only in the most obvious areas such as education and training but also in industrial, regional and economic development policy, urban and rural policy, business support, social welfare, and many other aspects of Government activity. The system for delivering skills and workforce development is complex, with many different agencies involved and constantly evolving.
- 5.52 To address issues of literacy and numeracy, a national strategy, *Skills for Life*, was launched in 2001. Reforms designed to improve the responsiveness of the supply of learning and training were set out in *Success for All*. Subsequently, *Realising Our Potential* offered a 'blueprint' for the delivery of future learning and skills policy. This White Paper explicitly addressed the criticism that the institutional framework for delivering skills policy has been uncoordinated and confusing. The strategy set out a number of partnership arrangements designed to improve delivery in this regard.
- 5.53 The Leitch Review set out a number of targets that must be achieved if the UK were to become a world leader in skills by 2020. The Review concluded that government, employers and individuals must all engage and invest more in skills development; and it

*Basic skills are addressed by Skills for Life.*

*The Leitch Review set targets for people with low skills.*

identified a range of necessary institutional reforms and simplifications. While the Leitch Review recommended increasing skill attainments at all levels, it set specific targets for people with low skills to be achieved by 2020. These were that:

- of working age adults, 95 per cent to have basic skills in both functional literacy and numeracy;
- more than 90 per cent of adults to be skilled to GCSE level or to vocational equivalents.

### Initiatives to raise skills

5.54 Within the broad context of learning and skills policy, there has been a wide range of initiatives that impact on participation in learning and seek to enhance the skills of working age adults. In terms of policy directly relating to the education, learning and skills of people of working age, the focus has been on providing support for those with no or low-level qualifications with the intention of helping them engage in post-school learning. Running parallel with the need to address basic and foundation level skills, government policy has also sought to encourage training and workforce development that would contribute to the reduction of skill shortages and increase competitiveness.

*Many policy initiatives contain an element of learning or training.*

5.55 Many labour market policies and initiatives have contained elements of training or skill development, even when this was not their primary purpose. Examples include the New Deal programmes: longer-term unemployed young people can engage in full-time education and training for up to 12 months, long-term unemployed adults may be referred to short courses in basic skills (key skills as well as 'soft skills'), while lone parents can receive training in a new job supported by an In-Work Training Grant. Where skill development is simply part of a portfolio of support for participants in a programme, the impact of skill development in itself is seldom considered in isolation but is subsumed as part of the overall impact of such programmes. In other instances, initiatives have as their main aim a specific learning or training focus for adults. Examples of such initiatives include:

*In addition, there are a number of initiatives which have training the unskilled at their heart.*

- Adult Basic Skills (Skills for Life);
- Work-Based Learning for Adults (WBLA);
- New Deal for Skills;
- Train to Gain;
- The Cities Strategy.

## Aligning Employment and Skills Policies

- 5.56 Several evaluations of labour market policy have highlighted a potential inconsistency between the approach of welfare to work programmes and the approach of skills policy. The highest priority for welfare to work initiatives is placing the individual into a job (sometimes referred to as a 'work first' approach). Partly this reflects a view that placing a person in a job is the best way of supporting them, since work experience of any sort enhances employability. It is also a reflection of the performance targets under which Jobcentre Plus operates. Such an approach can run counter to the skill needs of an individual, who may require time out from job search in order to undertake some form of learning and skill acquisition. Participants in New Deal for Young People, for instance, found it confusing to participate in a full-time education or training option in the expectation of gaining a qualification, and yet at the same time be urged to continue actively seeking a job that, if successful, would lead to the premature end of their training (Hasluck, 2000). Similar confusion was observed in regard to Basic Skills training (ECOTEC, 2003).
- In the past there have been inconsistencies between welfare to work and skills initiatives.*
- 5.57 This potential inconsistency was acknowledged in the New Deal for Skills, which created a new requirement for Jobcentres to give greater priority to helping unemployed and economically inactive people acquire the skills necessary for them to achieve sustainable employment. This was to be achieved through better cooperation between Jobcentre Plus offices and Information Advice and Guidance (IAG) partnerships to offer a more integrated skills service in Jobcentre Plus offices and to: (i) ensure a focus on obtaining qualifications that best support employability; (ii) the piloting of new incentives to encourage lone parents, incapacity benefit claimants and partners of the unemployed to re-skill; and (iii) the development of a Skills Passport that records skills and competencies gained.
- The New Deal for Skills sought a more integrated approach to policy.*
- 5.58 The Leitch Review went much further than the New Deal for Skills, concluding that the different aims of current skills and employment services meant that delivery was complex, with an array of agencies trying to give help and advice. People often did not receive the full support they needed and were unsure how and where to access it. In the light of this, the Review suggested that radical reform was required in order to
- The Leitch Review recommended a number of changes.*

produce an integrated employment and skills service and recommended:

- a new programme to help benefit claimants with basic skills problems (including the screening of all new benefit claimants);
- a new universal adult careers service, providing labour market-focused careers advice for all adults in a range of locations, including co-location with Jobcentre Plus, and drawing on Jobcentre Plus information and services, creating a national network of one-stop shops for careers and employment advice;
- a new integrated objective for employment and skills services of sustainable employment and progression. This objective will require all involved in such services to focus on people's long-term, as well as short-term, employment prospects;
- a network of employer-led Employment and Skills Boards to give employers a central role in recommending improvements to local services, mirroring the national role of the Commission for Employment and Skills. The Boards will work to ensure that local services meet employer needs and the workless are equipped to access work.

Leitch hopes that as the result of these recommendations, everyone claiming benefits will have their basic skills assessed and be offered help if they need it. When they find work, they will receive in-work support if required; and people who find it difficult to stay in work will be offered more intensive support, including help with their skills. All adults, including those in work, will be able to access work-focused careers advice, giving them the support needed to get on in work. This will contribute to increases in sustainable employment and progression, as well as reductions in social exclusion.

5.59 In 2007 the Freud Report presented an even more radical review of the welfare system and made a number of recommendations for the support received by workless people (DWP, 2007). These included:

- greater use of private and voluntary sector resources and expertise, so harder-to-help benefit claimants receive more employment support – particularly existing customers who

*The Freud report also made a number of radical recommendations.*



have been trapped on benefit for long periods;

- a new focus on long-term mentoring to tackle the problem of repeat benefit claimants – helping keep customers in work and encouraging them to progress to higher paid jobs rather than returning to benefit dependency;
- greater rewards for organisations that are successful in helping claimants find and stay in work, with higher payments based on sustaining customers in employment for as long as three years. This could be financed by savings to the taxpayer from having the customer in work rather than claiming benefit;
- greater personalisation of employment support, with higher financial incentives for organisations to target resources at the hardest-to-help who need more support before they are ready to return to work;
- retaining Jobcentre Plus's role in helping customers during the early stages of their period on benefit and creating a new role for the organisation to assess how much support individual claimants are likely to need before they are ready to return to work.

While none of these recommendations deals explicitly with people with low skills or lack of qualifications, these changes would have significant implications for such people because of the association between worklessness and low skills. The additional and more targeted support and the longer-term perspective envisaged by Freud are to be welcomed if that means that workless people are helped to acquire the skills they need to enter employment and are supported (through the proposed mentoring system and financial incentives to organisations) during those vulnerable early years of returning from welfare to work.

## Prospects for the Low Skilled and Social Exclusion

- 5.60 Many factors are responsible for social exclusion – including poverty, disability, poor health, family breakdown – and a lack of skills or qualifications is just one more factor in the process. The analysis presented in this chapter has shown that people with low skills, particularly those with no qualifications, are much more likely than others to be non-employed. When a lack of skill/qualifications is combined with other disadvantages, the effect is dramatic and employment rates are greatly reduced in such cases. Particularly significant from the perspective of social exclusion, people without skills/qualifications are likely to be economically inactive (rather than unemployed) and not even seeking work. Such a lack of intention to obtain employment and a dependence on state benefits can become a precursor to longer-term and deeper social exclusion, particularly where motivation is corroded and job readiness reduced by the passage of time.
- Economic inactivity amongst the low skilled can develop into longer-term social exclusion.*
- 5.61 Policy to address the issue of low skills has proceeded on a broad front, embracing reforms to full-time education and further education designed to encourage participation in learning. In addition there has been a range of programmes and initiatives designed specifically for benefit claimants and which include an element of learning designed to improve basic skills and raise skills. More recently, there has been an increased emphasis on improving the skills of the low skilled in work so that they can retain and progress in employment (initiatives such as Train to Gain for instance).
- Recent policy developments have emphasised skill acquisition in work.*
- 5.62 Despite the recent emphasis on workforce development, it remains the case that policy to raise skill levels in England remains disproportionately focused on young people. This is understandable since older workers are more difficult to reach and the returns from investing in young people are greater because of the cohort effect (older people will leave the workforce sooner than young people). Support to help the non-employed (at greatest risk of social exclusion) into employment tend to play down the role of long-term skill acquisition and qualifications and place more emphasis on short-term job search and related skills. While there is evidence that such support can help the non-employed into work, there is a strong suggestion in
- Policy remains focused on young people and is often short-term in nature.*

the evidence that such help is short lived and jobseekers often fail to retain employment and soon return to benefits. This suggests that greater emphasis still needs to be placed on helping people in the employed workforce to acquire better skills and accredit those skills by means of qualifications. This would both 'lock in' any gains made by helping non-employed people enter a job and address the need to improve the skills of the existing, older workforce.

- 5.63 Evidence reviewed in this chapter indicates that the number of people in England at risk of social exclusion because they are low skilled/unqualified has fallen sharply in the last decade. This undoubtedly reflects the impact of past and current policy on education and skills. Nonetheless, the proportion of the working age population without any qualifications still amounts to around 10 per cent even in 2006 and there is a basis for believing that the proportion may 'bottom out' at around 7-8 per cent in the future (given current trends in acquisition of qualifications amongst young people).

*Despite declining numbers, the unqualified will remain a significant minority in the population for the immediate future.*

- 5.64 For those in the working population who remain unqualified, the prospect of employment has actually worsened in the past few years and this is evidenced in the growth of the gap between the employment rate of the unqualified and that of people with qualifications. There are likely to be a number of reasons for this worsening situation. First, policy has probably been successful in helping those closest to the labour market but is likely to have left behind those who are particularly hard to help. This suggests that the unqualified is a group shrinking in size but increasingly disadvantaged (often with additional disadvantages on top of a lack of skills). Second, the demand for skills is steadily increasing and even elementary jobs now make demands on employees that some of the unskilled/unqualified are not able to meet. Finally, recent years have seen unprecedented levels of international migration, especially from new EU Member States. This new labour supply often has skills but competes at the elementary end of the job market, placing existing unskilled/unqualified at a significant disadvantage (see Chapter 3 for discussion of the impact of migration). It is unlikely that any of these factors are temporary, meaning that the employment prospects for the unskilled/unqualified and their risk of social exclusion can only worsen in the future.

*The unqualified are likely to face worsening employment prospects as demand for unskilled labour decreases and competition from migrant labour increases.*

# GLOSSARY

## **A8 Countries**

In 2004, 10 countries gained membership of the European Union. Lithuania, Latvia, Estonia, Czech Republic, Slovakia, Poland, Hungary, and Slovenia are referred to as the A8 countries, and they are subject to the Worker Registration Scheme (WRS). Malta and Cyprus gained membership at the same time but are not subject to the WRS. In 2007, Romania and Bulgaria gained membership: special rules apply to people from these countries wishing to work in the UK.

## **Active Labour Market Policy (ALMP)**

Programmes designed to counter the jobseeker's loss of motivation and skills in looking for work – they include training, job creation, assisting disabled people enter the labour market, *etc.*

## **Adult Learning Grant (ALG)**

ALG aims to support full-time adult learners aged between 19 and 30 who are studying for their first full Level 2 or Level 3 qualification through the offer of a means-tested monetary allowance. This is a key component in the Skills Strategy.

## **Annual Business Inquiry (ABI)**

The Annual Business Inquiry (ABI) is an integrated survey of employment and accounting information from businesses and other establishments in most industry sectors of the economy. The ABI was first conducted in 1998 and results for that year started to become available in 2000.

## **Apprenticeship**

Apprenticeship provides a combination of on- and off-the-job education and training. Apprentices work alongside fully experienced workers and off-the-job training is supplied by a local learning provider (usually on a day-release basis). There are two levels of Apprenticeship, for (i) apprentices and (ii) advanced apprentices. Apprenticeships for apprentices usually last at least a year and involve work towards an NVQ at Level 2, Key Skills and, in most cases, a technical certificate. Advanced Apprenticeships usually last at least two years: apprentices work towards an NVQ at Level 3, Key Skills, and a technical certificate.

## **City-regions**

City-regions comprise a central urban core, together with the associated commuting hinterland – i.e. they are defined in functional terms as the area over which economic markets (notably labour markets) operate.

## **Education at a Glance**

This report is produced annually by OECD and provides a series of indicators that look at who participates in education, what is spent on it, and at the results achieved. The latter includes indicators on a wide range of outcomes, from comparisons of students' performance in key subject areas to the impact of education on earnings and on adults' chances of employment.

## **Educational Maintenance Allowance (EMA)**

Paid to 16-18 year olds who are about to leave compulsory education, or who have left, and who want to continue into full-time further education, LSC-funded entry into employment programmes, or courses leading to an Apprenticeship, and whose household income is below a certain level. EMA provides income to students over the course of their studies.

## **Employment Rate**

The number of people in employment as a percentage of the labour force.

## **Employers Skill Survey (ESS)**

An establishment-based survey. Established by the Skills Task Force at the end of the 1990s, ESS was first carried out in 1999 and repeated in 2001 and 2002, providing data on recruitment problems and skill gaps. ESS was replaced by NESS in 2003.

### **Expected Years in Education**

A measure used by the OECD to compare levels of educational attainment across countries. Education expectancy is defined as the expected number of years of education under current conditions (excluding education for children under the age of five). It covers adults of all ages who are enrolled in formal education.

### **Foster Review**

*Realising the Potential: a review of the future role of further education colleges.* An independent review of the future role of FE colleges carried out by Sir Andrew Foster for the Department for Education and Skills and the Learning and Skills Council (LSC). The report was published in 2005.

### **Freud Report**

*Reducing dependency, increasing opportunity: options for the future of welfare to work.* A progress review of the Welfare to Work programme since 1997, taking account of evidence from the UK and international experience. The review concludes that the Government has made strong progress in its Welfare to Work agenda, but that further evolution is necessary. Published in 2007.

### **Generic skills**

A range of general skills, used across jobs, which include literacy, numeracy, IT, communication skills and problem-solving.

### **Hard-to-fill vacancies (HtFVs)**

Those vacancies that employers report as hard to fill, for whatever reason.

### **Information Advice and Guidance (IAG)**

The Skills Strategy and Leitch Review place an emphasis on IAG to help both young people and adults make decisions, both whilst looking for work and when in work.

### **Information and communications technology (ICT)**

ICT is seen as a driver of productivity growth, especially in the USA where its take-up has been particularly strong.

### **International Labour Organisation (ILO)**

The global body responsible for drawing up and overseeing international labour standards. Working with its Member States, the ILO seeks to ensure that labour standards are respected in practice as well as principle. The ILO sets out definitions for such measures as unemployment and employment rates for use in surveys and reports

### **International Standard Classification of Education (ISCED)**

ISCED was designed by UNESCO as an instrument suitable for assembling, compiling and presenting statistics of education, both within individual countries and internationally. The various levels are: Level 0 - Pre-primary education; Level 1 - Primary education or first stage of basic education; Level 2 - Lower secondary or second stage of basic education; Level 3 - (Upper) secondary education; Level 4 - Post-secondary non-tertiary education; Level 5 - First stage of tertiary education; Level 6 - Second stage of tertiary education.

### **Labour Force Survey**

The Labour Force Survey (LFS) is a quarterly sample survey of households living at private addresses in Great Britain. Its purpose is to provide information on the UK labour market that can then be used to develop, manage, evaluate and report on labour market policies.

### **Lambert Review**

*Lambert Review of Business-University Collaboration.* A review carried out for the Chancellor of the Exchequer to investigate how collaboration between universities and business might be stimulated. Published in 2003.

### **Latent Skill Gaps**

Used to describe the gap between an organisation's manifest skill gaps – that is, those the organisation recognises – and those actually required to compete effectively in their chosen segment of the market.

### **Learner Accounts**

The Leitch Review proposed the introduction of Learner Accounts for learners at Level 3 to give them technician, skilled trade and associate professional qualifications, subsidising the cost of courses at a provider of their choice, together with tailored information and advice.

### **Learning Entitlement**

The funding structure provides universal free entitlement to education and training for the 16-19 age group. This entitlement means that, subject to availability, a young person under the age of 19 can participate in any course of learning without charge.

### **Learning and Training at Work Survey**

Starting in 1999, these are a series of employer surveys which investigate the provision of learning and training at work. The most recent survey was conducted in 2006.

### **Leitch Review**

*Prosperity for All in the Global Economy – world class skills.* A review commissioned by the Chancellor of the Exchequer to identify the UK's optimal skills mix for 2020, to maximise economic growth, productivity and social justice, set out the balance of responsibility for achieving that skills profile, and to consider the policy framework required to support it. The report, published in 2006, proposed wide-ranging reform of the Vocational Education and Training (VET) system.

### **National Employers Skill Survey (NESS)**

An establishment-based survey. Replacing ESS in 2003, NESS has been conducted in 2003, 2004, 2005, and 2007 and collects data on recruitment problems and skill gaps. The surveys are sufficiently large to allow analysis at the sub-regional level and by SSC.

### **National Occupational Standards**

National occupational standards (NOS) are statements of the skills, knowledge and understanding needed for an individual to meet the standards expected of them in employment. The standards are industry-led and developed by representatives of employment sectors. They are also the basis for vocational qualifications and can be used for training, appraisal and recruitment.

### **National Qualifications Framework (NQF)**

Each accredited qualification has an NQF level. If qualifications share the same level this means that they are broadly similar in terms of the demand they place on the learner. Qualifications at the same level can still be very different in terms of content and duration. The current framework has five levels, from entry level (1) to post-graduate/specialist (5). A new eight-level framework has been proposed.

### **National Vocational Qualifications (NVQ)**

National vocational qualifications (NVQs) are work-related, competence-based qualifications. They reflect the skills and knowledge needed to do a job effectively, and show that a candidate is competent in the area of work the NVQ framework represents. NVQs are based on national occupational standards (NOS). See definition above.

### **New Deal**

New Deal covers a range of Government programmes – targeting different client groups – that aim to give unemployed people the help and support they need to get into work. Everyone on New Deal gets a personal advisor who is their point of contact throughout the programme.

### **New Deal for Skills (NDS)**

This has been developed to get people from welfare to work, working with people for whom low skills are a barrier to entering employment.

### **Passive Labour Market Policy**

Passive labour market policy relates to measures to support unemployed people, but excludes active measures (ALMP).

**Productivity**

Productivity is the amount of output or product per unit of input. The productivity of labour, for instance, is measured as the amount of output per worker or per hour of labour. Generally, the amount of output is measured in monetary terms, so that productivity is expressed as £ per unit of input.

**Rate of Return to Education**

A measure of the extent to which the investment in education (including the cost of foregone income whilst studying) generates a return higher than if the person had not made the investment in education (i.e. had not stayed on in education).

**Recruitment Problems**

Term used to refer to hard-to-fill plus skill-shortage vacancies.

**Replacement Demand**

Even in sectors of the economy where employment has been declining, there is a need to replace the workers retiring from the labour force or leaving for other reasons.

**Sector Skills Agreement (SSA)**

The process used to map out exactly what skills employers need their workforce to have and how these skills will be supplied – both now and in the future. SSAs are created by a process which involves a number of partners including employers, through their Sector Skills Councils (see below), trade associations and employer bodies, and organisations that supply and fund education and training.

**Sector Skills Councils (SSCs)**

SSCs provide employers with a unique forum to express the skills and productivity needs that are pertinent to their sector. Each SSC is an employer-led, independent organisation that covers a specific industry sector across the UK. There are 25 SSCs. Not all industry sectors are within the scope of an SSC.

**Skills Coaching**

Skills Coaching is intended to add value to existing Jobcentre Plus support for customers and help individuals, for whom a lack of skills was the barrier to sustained employment, to find the most effective route to improved employability.

**Skill Gaps**

The extent to which an organisation's workforce is not sufficiently proficient to meet their business aims.

**Skills for Life**

Refers to the basic skills related to employability (functional literacy and numeracy).

**Skill Needs in Britain**

The survey collected data, annually between 1990 and 1998, on employers' recruitment difficulties (numbers of hard-to-fill vacancies), the amount of training funded by employers, and information from employers on a range of training issues. The survey was establishment based and covered Great Britain.

**Skills Passport**

The skills passport scheme allows people to record their skills, qualifications and experience onto an electronic card, and allows employers to view this information online to verify competence and fitness for work.

**Skills Pledge**

The Skills Pledge is a voluntary, public commitment by the leadership of a company or organisation to support all its employees to develop their basic skills, including literacy and numeracy, and to work towards relevant, valuable qualifications to at least Level 2. The purpose is to ensure that all staff are skilled, competent and able to make a full contribution to the success of the company/organisation.

### **Skill-shortage vacancies (SSVs)**

Hard-to-fill vacancies that arise because of applicants lacking the skills, qualification, or experience the employer requires.

### **Skills at Work Surveys**

This series of surveys measures the extent to which workers use the skills they possess in their day-to-day jobs, as well as capturing information about the types of skill they deploy. Data are available for 1986, 1992, 1997, 2001 and 2006.

### **Social Exclusion**

Social exclusion is a term generally taken to describe situations where people or areas suffer from a combination of linked and mutually reinforcing problems – such as unemployment, poor skills, low incomes, poor housing, high crime, bad health and family breakdown. Social exclusion is thus a multi-faceted concept, relating to a lack of, or limited, participation in key domains of modern life.

### **Stern Report**

*Stern Review: the Economics of Climate Change* focused on the impacts and risks arising from uncontrolled climate change, and on the costs and opportunities associated with action to tackle it.

### **The Skills Strategy**

The 2005 White Paper – *Skills: Getting on in business, getting on at work* – sets out the Government's strategy for ensuring that employers have the right skills available to them to support the success of their businesses, and for individuals to gain the skills they need to be employable and personally fulfilled.

### **Total Factor Productivity**

Total factor productivity (TFP) is calculated as the quantity of output divided by the amount of all inputs, or factors, of production. This measure indicates the productivity of all factors of production taken together, including labour, capital.

### **Train to Gain**

TtG is designed to help businesses obtain the skills advice essential to choosing the best and most appropriate training for employees. TtG offers employers free, impartial and independent advice, assisting them to match training needs to training providers, and to ensure that training meets business need.

### **Unemployment (ILO definition)**

Unemployment is a count of jobless people who want to work, are available to work, and are actively seeking employment. The ILO definition is used internationally, so comparisons between countries can be made, and it also allows for consistent comparisons over time. Unemployment is calculated using data from the Labour Force Survey (LFS), so it is subject to sampling error.

### **Unemployment (claimant count)**

The claimant count measures only those people who are claiming unemployment-related benefits (Jobseeker's Allowance). It is generally a lower measure than the ILO one because some unemployed people are not entitled to claim benefits, or choose not to do so.

### **Vacancy Survey**

The Vacancy Survey, conducted by ONS, provides comprehensive estimates of job vacancies across the economy from April 2001. Estimates are available on a monthly basis, and as a three-month rolling average. Seasonally adjusted data are also available.

### **Worker Registration Scheme (WRS)**

From May 1 2004, most nationals of the A8 countries (see above) who wish to work for more than one month for an employer in the UK need to register under the WRS. Once individuals have been working legally in the UK for 12 months without a break, they will have full rights of free movement and will no longer need to register with the WRS scheme. Other restrictions apply to workers from Bulgaria and Romania.



**Working Futures**

Projections of future employment by occupation, industry and sector, produced for the LSC and the Skills Sector Development Agency (SSDA) by the University of Warwick Institute for Employment Research and Cambridge Econometrics. Available at:  
<http://www.ssda.org.uk/ssda/default.aspx?page=28>

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