UKCES
UK COMMISSION FOR EMPLOYMENT AND SKILLS

The UK Employment and Skills Almanac 2010

Evidence Report 26
March 2011

Intelligence > Investment > Impact

Data Disclaimer

The data included within the UK Employment and Skills Almanac has been sourced from the Office for National Statistics (including Labour Force Survey, Annual Business Inquiry, Annual Survey of Hours and Earnings, and the Inter-departmental Business Register), and other official UK Government sources, including employer skills surveys from England, Wales, Northern Ireland, and Scotland. International data has been sourced from Eurostat and the Organisation for Economic Coordination and Development (OECD).

Data reliability has been maintained by adhering to the guidance provided by the administrator or owner of the data sets used. Neither the UK Commission nor Cambridge Econometrics are able to control or verify the accuracy of the raw data, therefore neither the UK Commission nor Cambridge Econometrics gives any warranty as to the accuracy or fitness for purpose of the data.

The data provided on economic performance, productivity, employment, skills, and inequality form just one part of the picture for sectors, regions, nations, and other socio-economic groups. The data does not constitute advice in and of itself, and should not be used as the *sole* basis for any business decision. Neither the UK Commission nor Cambridge Econometrics take responsibility for or shall be liable for any use of the data, nor for any decisions taken on the basis of the data.

UK Employment and Skills Almanac 2010

Graham Hay, Rafie Faruq, Lucas Lilja, Yuee Zhao
Cambridge Econometrics

Professor Rob Wilson, Dr Anne Green, Dr David Owen
Warwick Institute of Employment Research

Genna Kik – Project Director
Debra Dhillon – Project Manager
UK Commission for Employment and Skills

March 2011

Contents

Tables and Figures

Foreword

The UK Commission for Employment and Skills aims to help raise UK prosperity and opportunity by improving employment and skills levels across the UK, benefiting individuals, employers, government and society. Research plays a fundamental role in the work of the UK Commission as we provide impartial analysis on the scale and extent of the UK's skills needs and demands. To provide an authoritative evidence base, our research is robust and transparent; rigorous in its design and execution; based on a common framework of labour market analysis; informed by reviews of best practice; and draws on international benchmarking and analysis.

Sharing the findings of our research and policy analysis and engaging with our audience is very important to the UK Commission if we are to achieve our aim. Our Evidence Reports are our chief means of reporting our detailed analytical work, ensuring transparency. Other products include accessible summaries of these reports; Briefing Papers and Praxis papers. All our outputs are accessible in the Research and Policy pages at http://www.ukces.org.uk/our-work/research-and-policy.

This Evidence Report works alongside the *Almanac Online 2010* website to provide a comparable, comprehensive and robust labour market information resource. This report and accompanying website acknowledge the need to develop a more agile and responsive skills and employment system, in which there is an increasing emphasis on the need for robust labour market information (LMI). Four key themes are identified which are used to structure the report: productivity, employment, skills, and inequality. Indicators are presented across UK nations, regions, sectors, sector skills councils, and various socio-economic groupings, with international benchmarking for the UK undertaken where possible.

Professor Mike Campbell
Director of Research and Policy Directorate

Lesley Giles
Deputy Director of Research and Policy Directorate

Acknowledgements

Several individuals and organisations have been involved in the production of this report and accompanying workbooks.

The report was commissioned by the UK Commission for Employment and Skills (UK Commission). Cambridge Econometrics (CE) was the lead contractor on the study and was responsible for the management and production of the report, contributions to most chapters and the assembling of the data workbooks which accompany this publication. Additional work that supported the authors was carried out at CE by Francesco Capponi, Paul Chaplin, and Richard Lewney. CE was supported by the Institute for Employment Research (IER). The focus of IER's contribution was the Skills and Inequality chapters of the Almanac, along with the spotlight features and the paper on depths limits and gaps. IER also supported CE in the collection and preparation of data for the workbooks.

For the UK Commission, the project was directed by Genna Kik and managed by Debra Dhillon. The project team would like to thank Genna and Debra for their support and direction over the course of the project, and for helping the project team get access to key data and personnel.

Part of the work for this report involved gathering, processing and assembling data for presentation. We would like to acknowledge IFF who reprocessed data from Employers Skills Surveys into up-to-date SSC footprint definitions.

Thanks are also due to Lee Davis and Ken Manson (both UK Commission). *Almanac Online* development has been led by Ken Manson with support from Lee Davis. Ken Manson has also supported final preparation of the publication.

Lastly, a Steering Group chaired by the UK Commission oversaw the direction of the report and provided comments and guidance in relation to various issues. On the Steering Group were Lesley Giles, Genna Kik, and Mark Spilsbury of the UK Commission.

Executive Summary

Background to the study

Last year the UK Employment and Skills Almanac developed and deployed a framework to organise and collate a detailed and comprehensive labour market intelligence (LMI) evidence base:

- to allow the UK Commission for Employment and Skills (the UK Commission) to become more strategic and intelligent in its use of official data;
- to provide a new resource to the wider research and policy community.

The evidence base provided by this updated study aims to support the UK Commission to meet its high-level goals and its core responsibilities (listed in the introduction to this report). This publication and a set of accompanying workbooks (hosted on the *Almanac Online* site) are the core components of the evidence base, and together they organise and present data on a broad range of themes and measures of interest to the UK Commission at a national, regional and sectoral level.

How to use the UK Employment and Skills Almanac and Almanac Online

Data in the *Almanac* are structured around the same four organising themes, or outcomes of interest, identified in *Ambition 2020*: productivity, employment, skills and reduced inequality. These chapters present the key highlights of the data collected at a national, regional and sectoral/SSC level for the four outcomes.

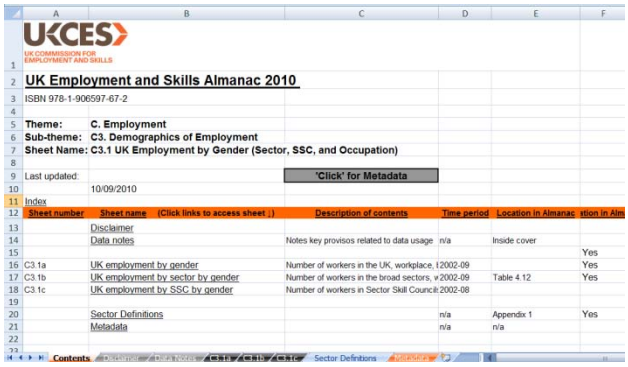
Each of these chapters relates productivity, employment, skills and inequality to a broader conceptual framework of drivers and the relationships that underpin them. This framework determines the rationale for the data collected and presented, and guides the way in which the data should be interpreted.

Within each chapter a discussion of the evidence for each outcome then follows, including recent international trends.

The tables and figures presented in the UK Employment and Skills Almanac are all available to download in Excel format from the *Almanac Online* project website: https://almanac.ukces.org.uk

The project website is arranged around the same four organising themes as the main report. A wide variety of indicators can be found under each of these themes (the range of which is greater than within the main report).

Each table and figure within the *UK Employment and Skills Almanac* main report (PDF publication) includes a 'Datalink' to the indicators in Excel workbook format, which are hosted on *Almanac Online*. Users can download these workbooks to analyse the data for their own purposes.



Each workbook has a contents page with hyperlinks to the datasheets, metadata, and any accompanying data notes.

Three spotlight features are available both within the *UK Employment and Skills Almanac* and on *Almanac Online*:

- Functional Economic Geographies
- International Labour Migration to the UK
- The Impact of the Recession on Young People

Summary of findings

Recent evidence

During much of the 2000s, the UK continued to enjoy robust economic growth bolstered by strong household expenditure and a surge in government spending, both on public services and capital investment. At the same time, the UK economy became increasingly traded. All of this supported an increase in the standard of living, and the UK gained in relative standing among the OECD countries.

During the 2008-10 recession, households curbed spending to rebuild savings, investment collapsed as credit was constrained and confidence undermined, and both imports and exports fell, as the global economy faltered. Consequently, the slowdown that emerged in the financial and business services sector, which accounts for a substantial proportion of the UK economy, developed into recession across all industry sectors.

UK GDP grew by a meagre 0.5% in 2008 and fell by 4.9% in 2009. GDP in the UK and the euro-zone was hit harder than the OECD average during 2009 and growth in both remained below that average in 2010. In the UK, the rescue measures implemented by the government during the recession, including emergency loans to recapitalise large banks, came at a time of sharply reduced tax revenue and so were funded by a large increase in the budget deficit. The Conservative-Liberal Democrat coalition has since announced cuts in government spending and increases in taxation to eliminate the structural deficit before 2015. The extent to which this will act as a drag on growth during the recovery is a matter of debate among economists.

The UK has one of the highest employment rates in the OECD. During the period of robust economic growth 2000-07, the UK annual employment rate remained consistently at around 72%, a similar level to that in the USA. More recently, employment rates in the EU and the other G7 and OECD countries have fallen because the global downturn has cut employers'

demand for workers. In the UK, the employment rate held up until 2008, but then fell to 70.5% in 2009 and to 69.0% in 2010, a sharper fall than for the rest of the EU as a whole.

Headline indicators of economic inequality show that, including the redistributive impact of taxes and benefits, income distribution in the UK is less equal than the OECD average, although has improved in recent years.[1] More recent data from Eurostat indicate that the level of income inequality in the UK fell slightly between 2005 and 2009 and during the recession; but it remains high compared to some of its EU neighbours, most notably the Scandinavian countries.

Productivity

In 2008, the economic downturn caused UK productivity growth to grind to a halt; having grown by over 2% pa during 2000-07, GDP per hour worked grew by just 1% in 2008 and then fell by 22.5% in 2009 because output growth slowed more rapidly than hours were reduced and jobs were shed.

Marked disparities exist in the productivity rates of the different UK nations and regions.[2] Within the UK, the data show that England has the highest productivity of the four UK nations. Looking at productivity over time, GVA per hour worked in Wales and Northern Ireland fell relative to the UK average, between 2000 and 2008. In Scotland productivity rose relative to the UK average over the same period.

In 2008, in only two of the English regions, namely London and the South East, did GVA per worker exceed the UK average; and that has been the case for over a decade. The variation in productivity rates across the nations and regions reflects industry specialisation, for example the concentration of high value-added financial and business services contributes to high productivity in London. It also reflects the pressure on costs (and therefore the value added per worker required for activities to be worth undertaking) in more urban regions.

On a number of measures of investment and innovation, key drivers of productivity, the UK continues to lag behind the performance of key competitors.[3] Business investment accounted for a smaller proportion of GDP in the UK in 2008 than in the US, France and Germany and the gap has widened since 2000. UK business expenditure on R&D (as a percentage of GDP) also remains lower than that of France, Germany and the US, and has done so since the early 1990s.

Overall, the international evidence indicates that compared to the OECD average the UK has made steady progress since 2000. In 2000 it was ranked 17th for productivity measured by GDP per hour worked, and by 2008 it had moved up to 11th. Nevertheless, the improvement against key comparator countries, like the US, France and Germany has been small, and against some countries the gap has widened.

Employment

The UK's employment rate is considerably higher than both the OECD and EU average. However, the UK labour market has become polarised in sectoral and occupational structure, a trend accelerated by the recession. As a result, wages and employment have themselves become polarised, affecting particular sections of society in different ways. England and Scotland have a higher employment rate than the UK average, whereas Wales

[1] See tables 6.1 and 6.2 in the inequality chapter.
[2] See tables 3.3 and 3.4 in the productivity chapter for further details and data.
[3] See section 3.4.1 and 3.4.2 for further data and details on investment and innovation.

and Northern Ireland's rates are below the UK average. The dominant pattern of employment is as a permanent full-time employee.

Public administration, education & health is the largest of the broad sectors (in terms of employment), followed by distribution, hotels & restaurants and then banking & business services. The service sector comprises more than three-quarters of workers. Manufacturing comprises just over a tenth and construction just under a tenth. A small proportion of workers are employed in primary industries, electricity or water. Manufacturing has seen the steepest decline in the number of workers in recent years.

The fastest-growing group of workers between 2007 and 2009 was those aged 65 or over, followed by those aged between 60 and 65. These changes reflect an aging population, coupled with increasing life expectancies. These trends have led to rising activity rates and declining unemployment rates among older sections of the population. The age group in the working age population with the lowest activity and employment rates is those between 16 and 24. This is also the group with the highest unemployment rate. Conversely, the age group with the highest activity and employment rate is those aged between 35 and 49.

While a higher proportion of males are employed compared to females in the UK (women have lower activity rates in the working age population), between 2007 and 2009 the number of women workers grew faster than the number of men. The White ethnic group has the highest activity and employment rates. The Black ethnic group has the highest unemployment rate.

Skills

Skills remain a key priority for the new Coalition Government. They are seen as central to the government's Strategy for Sustainable Growth.[4] While the UK continues to perform quite well at the level of higher qualifications (university degree level and equivalents), international comparisons suggest a continuing problem at intermediate and more basic levels.

The latest data confirm that, in terms of formal qualifications, the UK is continuing to see an improvement in the average levels of qualifications held by its workforce. The longer trend towards increasing numbers going on into further and higher education (and subsequently obtaining qualifications at National Qualification Framework (NQF)[5] Levels 4 and above) has if anything been accelerated. This may be further boosted in the short term at least as the state of the labour market encourages participation in education beyond formal schooling. However, this may be affected by cutbacks in funding to both higher and further education.

Until recently, the evidence suggests that the demand for higher level qualifications has more or less kept pace with the large increases in supply from the domestic population, which has also been boosted by significant inward migration). The recession is showing signs of dampening demand. However, it is also having an impact on some aspects of supply, including migration, so the overall impact on the balance of supply and demand remains more difficult to judge.

The recession has also had an impact on the changing industrial structure of the UK economy and, within sectors, the changing demand for skills as represented by occupational and qualification patterns. The longer term developments are driven by technological and organisational changes aimed at reducing cost and improving productivity and efficiency.

[4] See BIS and HM Treasury (2010) *The Path to Strong, Sustainable and Balanced Growth*. Available online at: http://www.bis.gov.uk/assets/biscore/corporate/docs/p/10-1296-path-to-strong-sustainable-and-balanced-growth.pdf
[5] See Box 5.2.

These influences have been reinforced by the initial impact of the recession in the private sector and the ongoing effects as the public sector retrenches and responds to the need to reduce the public sector deficit. There have been continued job losses in many intermediate and less skilled occupations. These have been partially offset by increases in the numbers and shares of employment in many managerial, professional and technical jobs. However, none of these has been immune from the effects of the recession.

The recession has, of course, dampened some of the demand pressures resulting in even fewer skills gaps and skills shortages, but there remain some acute and persistent problems in sectors where market forces are constrained or where there are other longer term structural problems. The tendency for a polarisation of the demand for skills, with growth for some low skilled jobs at the same time as increasing employment shares for higher level occupations and for those with higher level qualifications, remains a notable feature.

Inequality

Income inequality in the UK has been increasing over the last 30 years. The UK has a much more unequal income distribution than most of the other EU countries, and slightly more unequal than the OECD average.

The percentage of the working-age population in employment is much higher in the UK than in much of the EU, but well below that in most northern European countries. It is similar to the proportion in the United States. The recession has resulted in a sharp fall in the employment rate (in common with a number of other countries) but it remains 5-6 percentage points above the OECD average.

Participation in higher education has increased steadily over the last decade. More than half of young women now undertake higher education, but the increase has been much slower for young men.

Economic activity rates are higher for men than women, but the differential is narrowing. Participation rates for young people have fallen slightly, while those for older people have increased slightly. Recession conditions have depressed economic activity rates more for young people and men than for older people and women.

Employment rates are also higher for men than women, and are highest in the 35-49 age range. The percentage in employment remains lower for ethnic minorities than for white population, but there is slow convergence in employment rates. The recession has resulted in a fall in employment rates for young people and some minority ethnic groups.

Unemployment rates tend to decline with age, and are higher for men than women. Unemployment rates for ethnic minorities as a whole are still at least twice those for the white population. The relative position of some ethnic groups has improved, but the unemployment rate for the black population has increased sharply during the current recession.

1. Introduction

1.1 Background to and need for report

1.1.1 Overall role of the UK Commission

The UK Commission for Employment and Skills (the UK Commission) was established in April 2008 as a result of Lord Leitch's 2006 review of skills[6]. The UK Commission's has the core goal of ensuring that good market intelligence drives increased investment to achieve greater impact on skills, jobs and growth.

In particular the UK Commission aims to:

- Provide outstanding labour market intelligence which helps businesses and people make the best choices for them;
- Work with businesses to develop the best market solutions which lever greater investment in skills;
- Maximise the impact of employment and skills policies and employer behaviour to support jobs and growth and secure an internationally competitive skills base.

1.1.2 The UK Commission's labour market information role

A key priority in delivering the UK Commission's high level objectives is to make and win the economic argument for greater investment in skills, underpinning this providing high quality and accessible labour market information.

The need to develop a more agile and responsive skills and employment system increasingly emphasises the need for robust labour market information (LMI). Technological change, globalisation, the shift to a low-carbon economy, ageing populations and the evolution of social structures all mean that both labour markets – and the skills people need – change ever faster.

High quality LMI provides a firm basis for the development of labour market intelligence that can enable individuals, employers, and providers to be more responsive in their decision making. The more well informed that individuals, employers, training/education providers and policy makers are about the labour market, the more effective their decisions are likely to be. First-class LMI, therefore, has real value to the efficient functioning of the labour market.

This brings greater demands in terms of LMI, with more high quality information needed on current and possible future trends in the labour market, skills and employment. A high quality, UK-wide LMI evidence base is crucial if the UK Commission is to be able to properly fulfil its roles in helping businesses and people making the best choices about where to invest and what jobs to pursue.

From the perspective of the UK Commission for Employment and Skills, LMI is also a crucial tool in providing the 'big picture' in terms of the skills and employment agenda across the UK. The evidence base must allow the UK Commission to monitor and assess progress not just at a UK level, but at an international, national and sub-national level, and across industry sectors and sector skills councils (SSC). Looking internationally, benchmarking the UK's

[6] HM Treasury (2006). *Leitch Review of Skills: Prosperity for all in the global economy – world class skills*. Available online at: http://www.official-documents.gov.uk/document/other/0118404865/0118404865.pdf

economic and skills position against that of its major international competitors and understanding our skills performance and challenges in an international context is key to making a strong case for investment in skills.

The time is now particularly ripe, therefore, for providing clear, accurate, comparable, timely and insightful LMI on a range of issues. This publication and its accompanying workbooks present and interpret labour market intelligence covering four key outcomes of interest: employment, inequality, productivity and skills.

This publication and accompanying workbooks are the core components of the evidence base, and together they draw and present data on a broad range of themes and measures of interest at a national, international, regional and sectoral level (subject to data availability).

1.2 Almanac content and structure

Employment and skills are not the only determinants of productivity and a fairer and more inclusive society; other external drivers include economic, technological, institutional and political factors and fall outside the remit of the UK Commission. This study has sought to recognise these other drivers and incorporate them into the evidence base where necessary and possible.

The latest data included within the Almanac runs to 2009, covering the recessionary period in part. Where relevant to the discussion the implication of the recession is noted, and we have included in our concluding chapter a spotlight feature on the impact of the recession on young people.

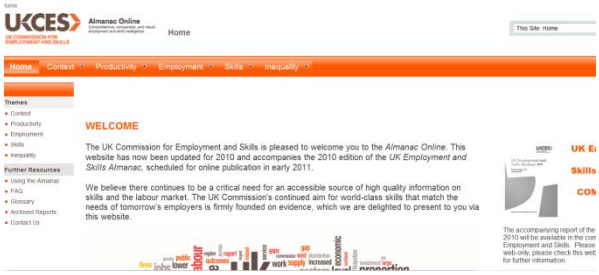
This report and accompanying workbooks hosted on the *Almanac Online* website form the evidence base. Both the report and *Almanac Online* website are structured around four organising themes, or outcomes of interest, identified in *Ambition 2020*[7]: productivity, employment, skills and reduced inequality. The data (both outcomes and drivers) that make up the evidence base are presented under one of these themes. This publication presents only a selection of the data that make up the evidence base. The full datasets and workbooks are available to view and download from the *Almanac Online* website.

This report is structured as follows:

- The final section of this chapter provides a methodological overview of the approach taken to develop the evidence base and its organising framework;
- In Chapter 2, the context for understanding trends in the outcomes of interest (productivity, employment, skills and reduced inequality) is provided in the form of an overview of policies and policy developments and of recent developments in the wider economy.
- In Chapters 3, 4, 5 and 6 we present a selection of the evidence related to each of the outcomes of interest: productivity, employment, skills and inequality. Each chapter begins by relating the outcome to the conceptual framework of drivers and the relationships that underpin it. This framework determines the rationale for the data collected and presented for the evidence base. This is followed by an overview of the evidence on recent international trends. There follows a selection of tables with evidence for the UK nations, regions and sectors (subject to the availability of data) accompanied by short commentary paragraphs discussing the outcomes of interest and underpinning drivers.

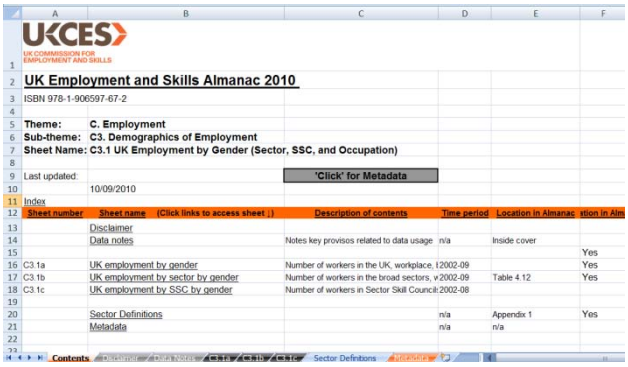
[7] For the most recent version see UKCES (2010) *Ambition 2020: World Class Skills and Jobs for the UK,: The 2010 Report*. Available online at: http://www.ukces.org.uk/reports/ambition-2020-world-class-skills-and-jobs-for-the-uk-the-2010-report

The workbooks which accompany this publication present the collected evidence (on outcomes and drivers) in all its detail are available to download from the *Almanac Online* project website: https://almanac.ukces.org.uk.



The project website is arranged around the same four organising themes, as the main report: productivity, employment, skills and reduced inequality. A wide variety of indicators can be found under each of these themes (the range of which is greater than within this main report).

Each table and figure within the *UK Employment and Skills Almanac* main report (PDF publication) includes a 'Datalink' to the indicators in Excel workbook format, which are hosted on *Almanac Online*. Users can download these workbooks to analyse the data for their own purposes.



Each workbook has a contents page with hyperlinks to the datasheets, metadata, and any accompanying data notes.

Finally, three spotlight features are available both within the *UK Employment and Skills Almanac* and on *Almanac Online:*

- Functional Economic Geographies
- International Labour Migration to the UK
- The Impact of the Recession on Young People

1.3 Methodological overview

In *Ambition 2020* (UKCES, 2009)[8] the UK Commission developed a policy framework to aid and inform policy deliberation and development, together with the establishment of appropriate measures of success, which aims to connect skills, employment and economic development policy, in pursuit of the 2020 ambitions.

[8] UKCES (2009). *Ambition 2020: World Class Skills and Jobs for the UK*. Available online at: http://www.ukces.org.uk/publications-and-resources/browse-by-title/ambition-2020-world-class-skills-and-jobs-for-the-uk.

Based on this[9] last year we identified a number of key outcomes and for each outcome we identified the objectives, outcomes of interest, conceptual frameworks (including drivers and processes), key variables, and empirical indicators. This method was used again for the Almanac 2010 and has provided the basis for specifying the data to be collected, for its presentation and interpretation, and for identifying data gaps and limitations.

Four key outcomes of interest were identified from the *Ambition 2020* policy framework: productivity; employment; reduced inequality; and skills (see Figure 1.1).

- The high level objectives (outcomes) of improved **employment** and **productivity** determine economic performance.
- **Reduced inequality** sits alongside employment and productivity indicating that it is a desired outcome in its own right and because success in improving employment and productivity outcomes will depend to some extent on reducing the inequality of labour market outcomes (by improving the employment and productivity of disadvantaged groups).
- **Skills** have a vital role to play in stimulating employment, productivity and cohesion. Skills are represented by the three further components of the framework:
- the **demand** side (in light orange) summarises the determinants of the required workforce, i.e. the skills needed;
- the **supply** side (in dark orange) summarises the potential workforce, i.e. the quantity and quality of skills available;
- and (in shaded grey) **jobs** matches and mismatches between supply and demand.

In order to set the role of skills in a wider context, and to reflect the role played by other external drivers that influence the development of employment and productivity, the framework set out in Figure 1.1 includes these other key drivers (dark orange outline) of employment and productivity, skills supply and demand. They are:

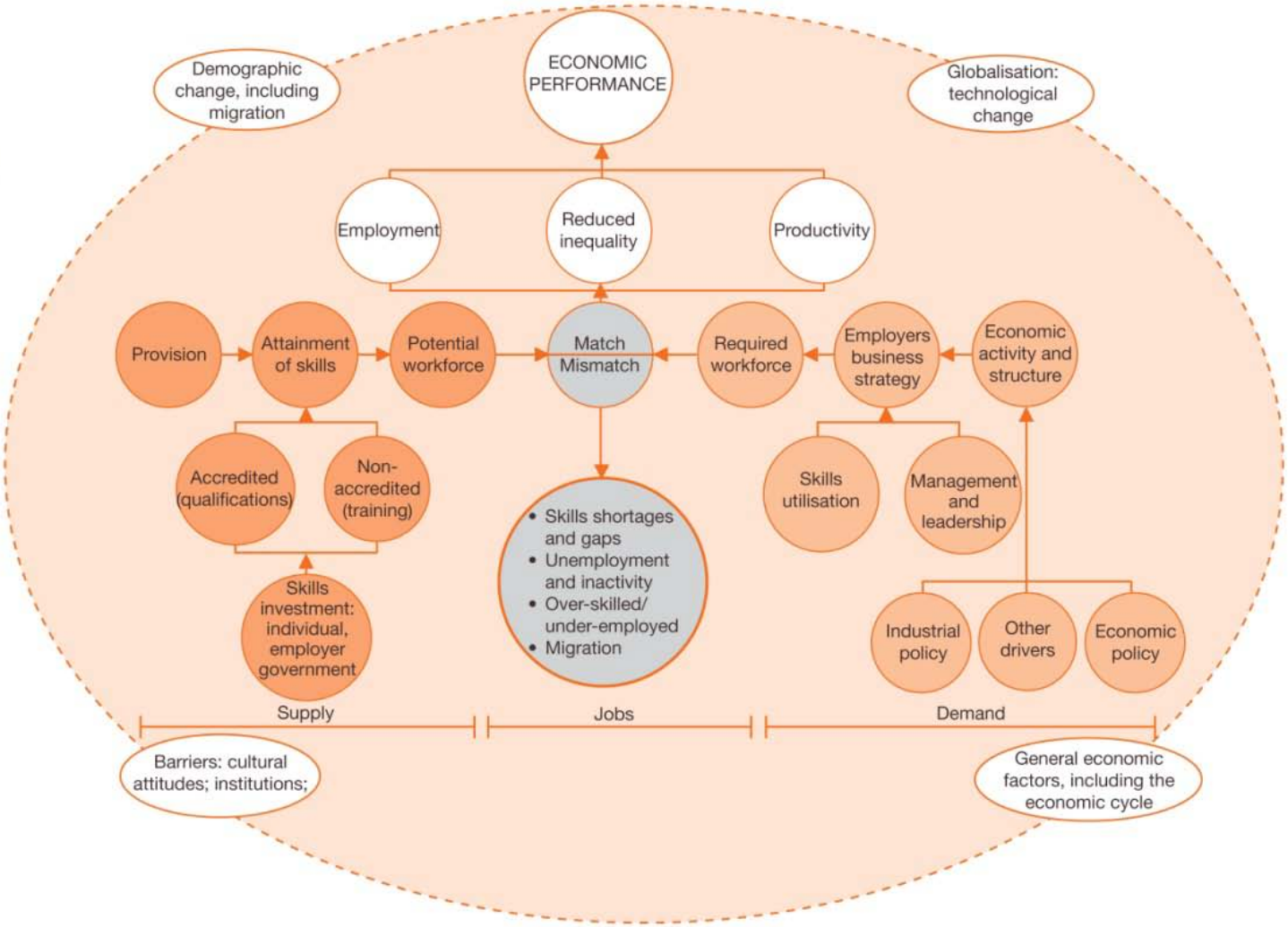
- globalisation, technology and the economic cycle affect productivity and also determine the activity and structure of the economy and employment [skills demand];
- demographic change (e.g. the age structure of population, historic trends in birth rates, annual fluctuations in international migration by age and gender, changing labour market participation rates) affects employment and the potential workforce [skills supply];
- barriers to participation exist in the form of factors such as cultural attitudes to learning and employment, and institutional structures; these affect employment and the potential workforce [skills supply].

The framework therefore includes not only measures of skills and employment, but also a wide range of additional indicators such as measures of output, trade performance, etc.

From chapters three onwards we present evidence related to each of the key outcomes of interest. To provide a sound basis for the interpretation of the evidence, each chapter begins by presenting our understanding of drivers and relationships that underpin that outcome.

[9] The organising framework (see Figure 1.1) used for the LMI evidence base in this report is an extension and modification of the UK Commission's *Ambition 2020* policy framework; it includes other external drivers of the key outcomes of interest and new elements that were not previously highlighted explicitly.

Figure 1.1 Ambition 2020 Policy Framework



2 Contextual Summary

2.1 Introduction

This section provides a brief summary of the policy environment and prevailing macroeconomic overview which provides the context for understanding trends in the key outcomes of interest discussed in subsequent chapters.

2.2 Policy environment

In this policy context section we describe the current policy environment with regard to employment, sustainable growth and skills, within which this work is positioned.

2.2.1 Employment

Responsibility for employment and benefits programmes in England, Scotland and Wales lies with the Department for Work and Pensions (DWP) and Jobcentre Plus. In Northern Ireland, it lies with the Department for Employment and Learning (employment) and Department of Social Development (benefits). The extent and range of support for unemployed people varies across the four UK nations.

The underpinning approach to employment strategy is informed by the welfare reform and complementary Work Programme described in *21st Century Welfare* by DWP[10] and the coalition government's *Spending Review 2010*[11]. The reforms to the welfare system are intended to improve incentives to work and reduce welfare dependency. The seven principles underpinning the welfare reform are set out in *21st Century Welfare*:

- ensure that people can see that the clear rewards from taking all types of work outweigh the risks;
- further incentivise and encourage households and families to move into work and to increase the amount of work they do, by improving the rewards from work at low earnings, and helping them keep more of their earnings as they work harder;
- increase fairness between different groups of benefit recipients and between recipients and the taxpayer;
- continue to support those most in need and reduce the numbers of workless households and children in poverty and ensure that interactions with other systems of support for basic needs are considered;
- promote responsibility and positive behaviour, doing more to reward saving, strengthening the family and, in tandem with improving incentives, reinforcing conditionality[12];
- automate processes and maximise self-service, to reduce the scope for fraud, error and overpayments. This could include a responsive and immediate service that saves the taxpayer significant amounts of money and ensures compliance costs for employers are no greater than under the current system; and
- ensure that the benefits and Tax Credits system is affordable in the short and longer term.

[10] Department for Work and Pensions (2010) *21st Century Welfare, Cm7913*. Available online at http://www.official-documents.gov.uk/document/cm79/7913/7913.pdf

[11] HM Treasury (2010) *Spending Review 2010*, Cm7942. Available online at http://www.official-documents.gov.uk/document/cm79/7942/7942.pdf

[12] Individuals who are able to look for work or prepare for work should be required to do so as a condition for receiving benefit and those who fail to meet their responsibility should face a sanction such as a benefit reduction. This is known as conditionality.

It is confirmed in the *Spending Review 2010* that over the next two Parliaments the current system of means-tested working age benefits will gradually be replaced with the Universal Credit, an integrated payment that is designed to ensure work always pays with less scope for fraud and error. The Review announced that the DWP will receive £2bn over the period 2011-15 for implementing the Universal Credit. Other welfare reforms include reforming Employment and Support Allowance, controlling the cost of tax credits, and capping the amount a workless household can receive in benefits to no more than the national median after-tax income.

The reforms to the benefits system will be complemented by the new Work Programme that tailors back-to-work support, delivered by private and third-sector specialists, on an individual basis for the long-term unemployed and disabled people. Providers will be paid by results, on the basis of the additional benefit savings they secure. Support for the short-term unemployed will continue to be provided through Jobcentre Plus.

In Northern Ireland, 'Steps to Work' program[13], which subsumed the main New Deal programmes, was introduced in September 2008. The program is designed to offer personalised advice and guidance to participants on finding and remaining in work. The participants can be re-trained while remaining on benefits plus receive a weekly Training Bonus. Participants also have the opportunity to gain a recognised qualification, to improve exiting skills and to gain work experience.

An initiative called 'Step Ahead' started in October 2009. It is aimed at helping people on benefits who have been out of work for 30 months to regain work experience through a fixed term job.

In practice Northern Ireland has pursued a policy of parity with the rest of the UK, particularly in terms of the benefits system and social security.

In Scotland, 'Workforce Plus'[14] sets out an employability framework for Scotland. The programme targeted seven local government areas in Scotland. The six Workforce Plus themes are: early interventions; client focused interventions; employer engagement; sustaining and progressing employment; joined up planning and delivery of services; and better outcomes.

However the bulk of welfare to work activity in Scotland is delivered via DWP funded programmes and will therefore undergo changes in line with the Work Programme.

2.2.2 Strategy for Sustainable Growth

In July 2010 the government published its structural reform plans for the government departments. The plan for BIS[15] identified it as 'a department for growth' and put the private sector at the heart of a sustainable recovery. The plan set out the next steps to be taken by BIS over 2010-12 to rebalance the economy, not just sectorally and regionally, but also to ensure that it is not as reliant on debt as it had been prior to the recession. The plan continues the shift to a greener, more sustainable and more technologically advanced economy. The government's role in this is that of facilitator, putting in place the framework to allow business to succeed and supporting investment in capital, infrastructure, education, and innovation.

[13] See: http://www.delni.gov.uk/index/finding-employment-finding-staff/fe-fs-help-to-find-employment/stepstowork.htm
[14] See: http://www.scotland.gov.uk/Publications/2006/06/12094904/2
[15] Department for Business, Innovation and Skills (2010) *Draft Structural Reform Plan*. Available online at http://www.number10.gov.uk/wp-content/uploads/SRP-BIS.pdf

More specifically, the priorities identified for BIS included boost enterprise; create a positive business environment; stimulate exports and inward investment; rebalance the economy; support universities, science and research in building a strong, innovative economy; and, build an internationally competitive skills base.

The strategy for meeting the goals and objectives defined by these priorities was set out in *A Strategy for Sustainable Growth*[16] (BIS (July 2010)) and *The Path to Strong, Sustainable and Balanced Growth (HMT and BIS (November 2010))*[17]. These set out the government's plans for supporting the UK economy as it recovers from the recession and for shaping the economy to help deliver balanced and sustainable growth over the long term. It restates the government's role as that of an enabler, putting in place the right framework to support business and growth. In light of the constraints on government spending and the impact of debt on consumer spending, the importance of investment and net trade to the recovery is made clear.

The Government's vision is to build a broad-based economy rooted in higher levels of business investment, open and competitive markets and greater exports. The priority is to create the conditions for business to grow and for individuals to reach their potentials. In *The Path to Strong Sustainable and Balanced Growth* (HMT and BIS (November 2010)), the Government states its four-part commitment to the private sector:

- providing the stability business needs to plan and invest;
- making markets more dynamic by removing barriers to growth wherever possible;
- focusing the Government's own activities on providing the conditions for private sector growth and investment; and
- ensuring that strong growth is fairly shared and sustainable in the long-term.

As part of the commitment to focus the Government's activities on providing the conditions for private sector growth and investment, this includes (but is not limited to) support to individuals to fulfil their potential; developing an education system that supports sustainable growth; labour market reform and promoting opportunities across the country.

Towards promoting opportunities across the country, the government's Local Growth White Paper sets out the strategy for enabling local authorities, businesses and communities to drive growth in their own area. Through the creating of local enterprise partnerships, business, local authorities and other partners are given the responsibility for and ability to drive local economic growth. The strategy also allows local authorities to borrow against growth in their local business rates through tax increment financing (TIF). The £1.4bn Regional Growth Fund will be used to stimulate private sector expansion throughout England.

The growth strategy also places emphasis on getting behind British businesses and places a focus on the specific barriers faced by different sectors. The government is inviting business to take part in a review of what each part of government is doing to address the barriers facing industries. The Growth Review will identify structural reforms with the potential to improve the business environment and benefit the whole economy and examine the barriers to growth that affect specific sectors and set out what government will do to address them. All sectors of the economy will need to be looked at but the government will start with the following six sectors: advanced manufacturing, digital and creative industries, business and professional services, retail, construction, and health and life science.

[16] BIS (2010) *A Strategy for Sustainable Growth*. Available online at http://interactive.bis.gov.uk/comment/growth/files/2010/07/8782-BIS-Sustainable-Growth_WEB.pdf
[17] BIS and HM Treasury (2010) *The Path to Strong, Sustainable and Balanced Growth.* Available online at http://www.bis.gov.uk/assets/biscore/corporate/docs/p/10-1296-path-to-strong-sustainable-and-balanced-growth.pdf

These policies and activities will require strengthened and improved access to Labour Market Information sources so that businesses, people, and providers make the best choices about where to invest and what jobs to pursue. Good Labour Market Information will be required to galvanise industries and sectors to improve the skills and productivity of their workforces, and to ensure the creation of more and better jobs.

2.2.3 Skills

The skills strategy for England, published in November 2010[18], committed to the ambition of a world-class skills base, but has removed centralised targets previously used to measure progress. The new strategy sets out to reform the skills system to deliver skills for sustainable growth. The key to the reforms is that the system becomes more responsive to individual and employer demand. Across all four nations a growing emphasis of skills policy has been on the contribution of improving skills levels to achieving economic growth (by helping to improve productivity and facilitating social mobility) and greater co-investment in training from individuals and employers. The new English skills strategy has also focused on the role of skills in promoting a fairer society (by minimising social exclusion).

The new strategy is expressed explicitly as promoting principles of fairness, responsibility and freedom:

- Fairness: the funding for adult education is refocused on those who need it most; adults who lack the basic skills for employment and the unemployed are ensured to receive support;
- Responsibility: rebalancing the role and responsibility of the state, individuals and employers, with the latter two taking greater responsibility for ensuring their own skills needs are met; the government's main role is to redress market failure in terms of information, training and finance provision.
- Freedom: improving the system's responsiveness to the market (individuals and employers) to become demand-led; promote choice and contestability; ensure that qualifications meet the needs of the labour market; ensure flexibility in the provision of training to suit individuals and employers.

There are a number of policies relating to these principles which put greater demands on LMI in the future.

Under the principle of *freedom* this includes:

- Placing Apprenticeships at the heart of the new educational system that the government will build, expanding the numbers of adult Apprenticeships available by up to 75,000 by 2014-15, leading to more than 200,000 people starting an Apprenticeship each year. Consequently, investment in Apprenticeships will be increased by up to £250m over the Spending Review period.
- Building a more flexible system of vocational qualifications that meet the needs of the economy.
- Reducing the reliance of some sectors of the economy on migration to fill jobs.
- Supporting employers in addressing their skills needs through a new Growth and Innovation Fund of up to £50m.[19]
- Giving greater power and freedom to colleges and training providers in return for more transparency and accountability,

[18] BIS (2010), *Skills for Sustainable Growth*. Available online at http://www.bis.gov.uk/assets/biscore/further-education-skills/docs/s/10-1274-skills-for-sustainable-growth-strategy

[19] For more information on the Growth and Innovation Fund see: http://www.ukces.org.uk/gif/

Under the principle of *responsibility* policies that may bring greater demands on LMI include:

- Offering every adult a Lifelong Learning Account, bringing information about available grant funding and learning opportunities as well as access to new government-backed loans for students in Further Education for intermediate and higher-level training.
- Establishing an all-age careers service providing high quality, professional careers guidance to young people and adults, with intensive support available for those with greatest need.

High quality labour market information will be required to inform information, advice and guidance and provide individuals, employers, and training providers with the best possible information to guide decision making.

More broadly labour market information will also have a role to play in providing the robust evidence base in supporting other policies under the principle of *freedom,* in particular to: develop employer collective actions to raise skills in their sector; support for employer initiatives to create high-performing workplaces; and in reforming the UK Commission for Employment and Skills to focus on providing leadership to employers on how to get the best from their workforces.

The Welsh approach to skills and employment, as outlined in *Skills That Work For Wales*[20], is an integrated one, linking skills initiatives with employment services and business support. The priorities addressed in the strategy and action plan are:

- improving the levels of basic literacy and numeracy skills in the workforce;
- ensuring everyone has skills essential to take up employment and maintain their employability within the labour market;
- increasing the demand for, and supply of, intermediate and high-level skills;
- addressing skills gaps and shortages in priority sectors and supporting economic development through our investment in post-19 skills; and,
- establishing effective and efficient learning provision.

In Scotland, the 2010 refreshed skills strategy, which builds on the original 2007 skills strategy, has a renewed focus around the skills required to accelerate economic recovery and to sustain a growing, successful country with opportunities for all of Scotland to flourish. It has a clear focus on providing the opportunities for skills to be developed and for these skills to be used effectively. The key priority themes in the strategy are:

- empowering people to ensure they have the opportunity to access the right advice, support and opportunities to acquire the skills and attributes to both contribute to and benefit from future economic success;
- supporting employers by better understanding and assessing the skills they need for future success, and ensuring that the supply of skills, training and qualifications can be responsive to this;
- simplifying the skills system to ensure that it is more coherent and easy to understand for individuals and employers; and
- strengthening partnerships and collective responsibility between public, private and third sectors to help improve skills and the contribution they make towards achieving Scotland's social and economic aspirations.

In Northern Ireland, the Department for Employment and Learning consulted on a draft revised Skills Strategy for Northern Ireland, *Success through Skills 2* from 31 May 2010 to 17 September 2010. The finalised strategy has yet to be published. While the draft strategy

[20] See http://wales.gov.uk/topics/educationandskills/publications/guidance/skillsthatforwales/?lang=en&ts=3

confirms the priority attached to skills, it recognises the uncertainty and constraints created by the changes in the economic and political landscapes since the previous strategy, and the challenges this will create for implementing and achieving future skills strategies.

The draft strategy puts forward a vision where skills support the growth of the economy by ensuring a well-qualified and highly-skilled workforce; achieved by focusing on those entering the labour market for the first time; up-skilling the existing workforce; and, ensuring those currently excluded from the labour force learn the skills to compete for and retain jobs.

The main aim of the strategy is 'to enable people to access and progress up the skills ladder', in order to raise the skills level of the whole workforce, raise productivity, increase levels of social inclusion; and thus, secure Northern Ireland's future in a global marketplace. In order to reach its goals the draft strategy proposes to focus actions on understanding the demand for skills; improving the quality and relevance of education and training; improving productivity by increasing the skill levels of the workforce; tackling the skills barriers to employment and employability; and, engaging the stakeholders.

2.3 Macroeconomic overview

To set the outcomes of skills, employment, and productivity in their wider context, macroeconomic drivers such as the economic cycle, globalisation, and demographic change are discussed in the remainder of this chapter.

2.3.1 Economic performance

During much of the past decade, the UK enjoyed robust economic growth which supported an increase in the standard of living, as measured by GDP per capita. Between 2000 and 2007 GDP per capita increased by 15%, and the UK improved its relative standing among the G7 countries. In 2000 GDP per capita in the US was 35% higher than that in the UK; in Germany and France the levels of GDP per capita were 0.5 to 3% lower than in the UK. The comparable figures in 2008 were, for the US 28% higher than in the UK, and for France and Germany 9% and 5% lower than in the UK, respectively.

UK GDP growth averaged 2.5-3% per annum over the period 2000-07; growth was bolstered by robust household expenditure and a surge in government spending, both on public services and capital investment. A later in 2008 UK GDP grew by a meagre 0.5% and fell by 4.9% in 2009 (see Table 2.1). GDP in the UK and the euro-zone was hit harder than the OECD average during 2009 and growth in both remained below that average in 2010.

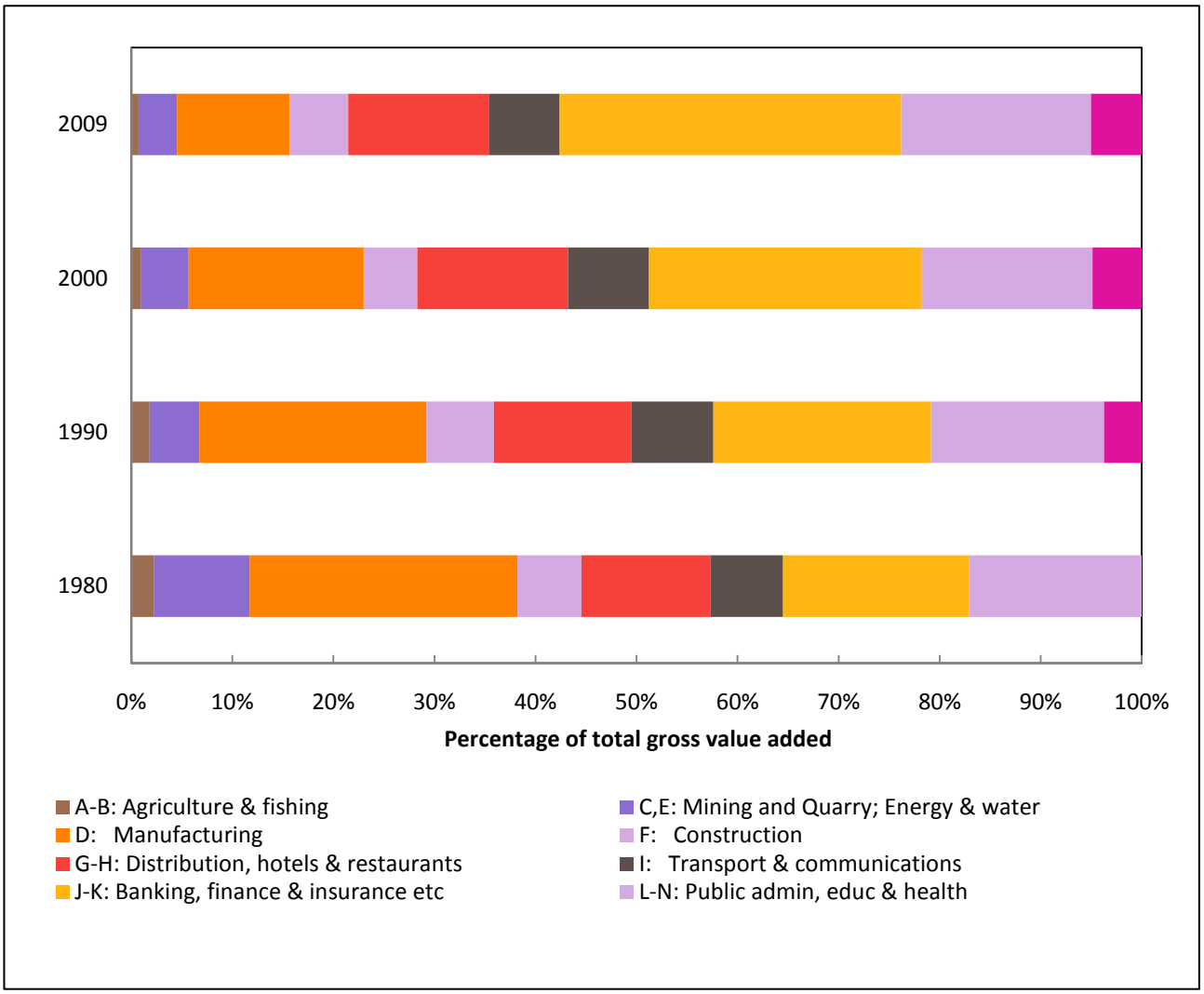
In the UK, the rescue measures implemented by the government during the recession, including emergency loans to recapitalise large banks, came at a time of sharply reduced tax revenue and so were funded by a large increase in the budget deficit. The Conservative-Liberal Democrat coalition has since announced cuts in government spending and increases in taxation to eliminate the structural deficit before 2015. The extent to which this will act as a drag on growth during the recovery is a matter of debate among economists.

Over the long term, the UK economy has become increasingly traded, although as with many economic trends this has been dented by the recession: exports accounted for 23% of GDP in 2009 compared with 18% in 1990; imports accounted for 25% of GDP in 2009 compared with 18% in 1990.

The demand for labour is derived from the demand for goods and services produced in the UK. The changing composition of demand for goods and services has shaped the structure of the UK economy and patterns of growth by industry sector. During the 2000s the growth of manufacturing and agriculture fell further behind that of the economy as a whole, whilst the fastest-growing sectors of the economy were financial services, transport, communications and public services. The share of manufacturing in the UK economy fell from 23% in 1990 to 11% in 2009 (see Figure 2.1). In contrast, financial services expanded from 22% to 34% of the economy over the same period.

During the 2008-10 recession, households curbed spending to rebuild savings, investment collapsed as credit was constrained and confidence undermined, and both imports and exports fell, as the global economy faltered. Consequently, the slowdown that emerged in the financial and business services sector, which accounts for a substantial proportion of the UK economy, developed into recession across all industry sectors.

Figure 2.1 UK output by broad industry sector



Sources: ONS Blue Book
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143&Pos=1&ColRank=1&Rank=272.
Datalink: https://almanac.ukces.org.uk/context/A2/A2.1_GVA_Shares_in_UK.xls.

Table 2.2 Headline economic indicators for comparator countries

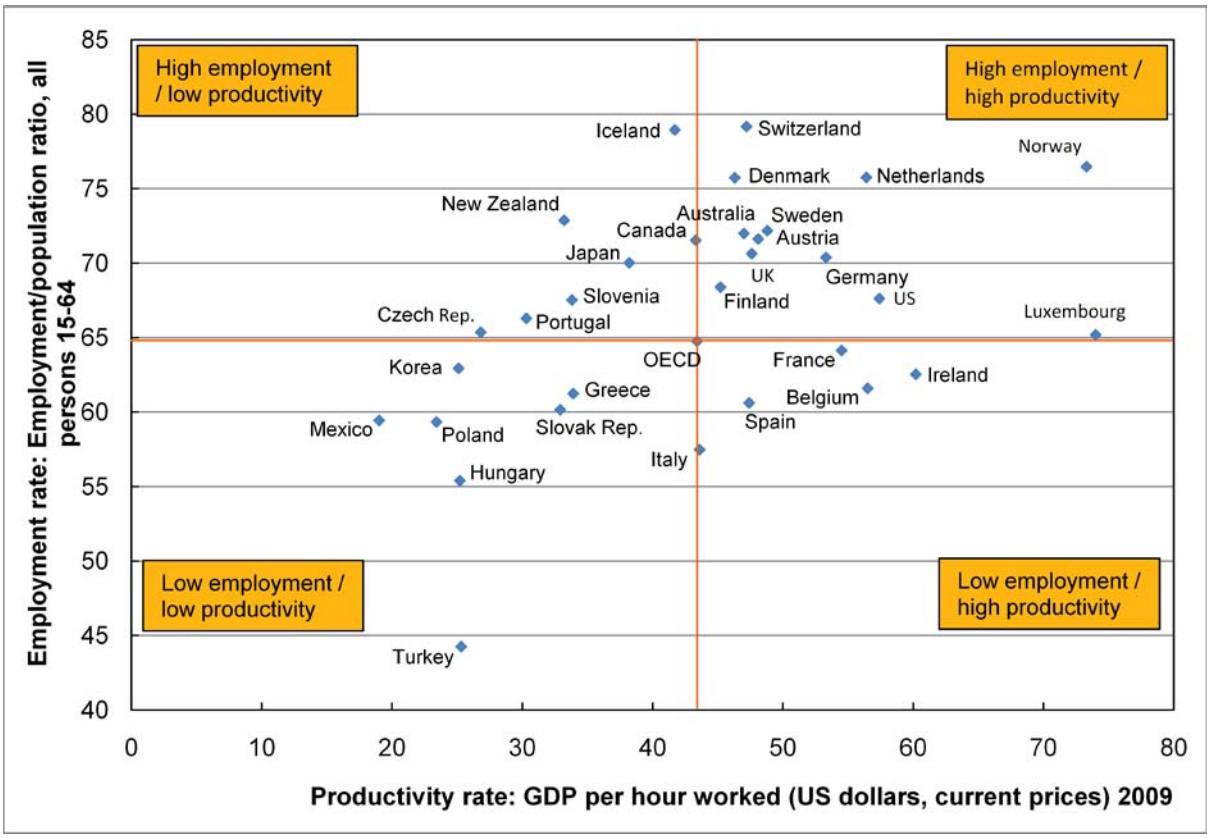
		UK			OECD average			Germany			France			US		
		2007	**2008**	**2009**	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**
GDP per capita	(US $, constant prices, constant PPPs, base year=2000)	30049	30013	28346.2	27654	27624	n/a	28234	28639	27302	27350	27256	26394	38753	38559	36993
GDP growth	(% pa)	2.6	0.5	-4.9	2.8	0.5	-3.3	2.6	1.0	-4.9	2.3	0.3	-2.5	2.1	0.4	-2.4
Employment rate	(% working age population, Q1)	71.1	71.6	70.4	66.6	66.7	64.8	68.4	70.0	70.4	63.6	64.6	64.1	72.1	71.6	68.7
Unemployment rate	(% working age population, Q1)	5.5	5.1	7.0	5.7	6.1	8.3	8.8	7.6	7.3	8.8	7.6	8.9	4.5	5.0	8.2
Productivity	(GDP per hour worked, UK=100)	100	100	100	92.4	90.5	91.2	119	117	112	116	116	114	121	122	121
Income distribution:																
Gini coefficient	(ratio, after taxes and transfers)	0.33	0.34	n/a	n/a	n/a	n/a	0.30	0.30	0.29	0.27	0.28	0.30	n/a	n/a	n/a
Sub-regional variation in GDP per capita	(% variation, dispersion of regional GDP at NUTS3 level)	29	n/a	n/a	n/a	n/a	n/a	28.6	n/a	n/a	24.3	n/a	n/a	n/a	n/a	n/a
Educational attainment	(% of the 25-64 year-old population by highest level of education attained)															
	Below Upper Secondary	31.7	n/a	n/a	29.8	n/a	n/a	15.6	n/a	n/a	31.3	n/a	n/a	12.1	n/a	n/a
	Upper Secondary	36.5	n/a	n/a	43.2	n/a	n/a	60.1	n/a	n/a	41.9	n/a	n/a	47.6	n/a	n/a
	Tertiary	31.8	n/a	n/a	27.4	n/a	n/a	24.3	n/a	n/a	26.8	n/a	n/a	40.3	n/a	n/a

Sources: ONS, Eurostat, OECD Education at a Glance.

2.3.2 Productivity

Economic performance is determined by (i) the *employment rate* (how many people are working) and (ii) *labour productivity* (how much they produce). During the period of strong GDP growth between 2000 and 2007, the UK improved its relative standing on productivity against each of the G7; the UK's GDP per hour worked overtook that of Canada and Italy, edged further above that of Japan, and closed the gap on France, Germany and the USA. Although the UK's employment and productivity rates remain above the OECD averages, the UK still lags behind a number of countries on both measures. For example, the US, France and Germany continue to enjoy higher rates of productivity by some distance (see Table 2.2), while Denmark, Netherlands and Switzerland all enjoy higher employment rates (see chart below).

Figure 2.2 Productivity and employment rates in OECD countries, 2009



Sources: OECD, Employment Outlook 2010 and OECD Productivity Database, version of November 2010 (www.oecd.org/statistics/productivity).
Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.1_International_Productivity_Comparison.xls (productivity);
https://almanac.ukces.org.uk/employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls (employment).

In 2008, the economic downturn caused UK productivity growth to grind to a halt; having grown by over 2% pa during 2000-07, GDP per hour worked grew by just 1% in 2008 and then fell by 2.5% in 2009 because output growth slowed more rapidly than hours were reduced and jobs were shed.

Marked disparities exist in the productivity rates of the different UK nations and regions.[21] In 2008, in only two of the English regions, namely London and the South East, did GVA per worker exceed the UK average; and that has been the case for over a decade. The variation in productivity rates across the nations and regions reflects industry specialisation, for example the concentration of high value-added financial and business services contributes to high productivity in London. It also reflects the pressure on costs (and therefore the value added per worker required for activities to be worth undertaking) in more urban regions.

On a number of measures of investment and innovation, key drivers of productivity, the UK continues to lag behind the performance of key competitors.[22] Business investment accounted for a smaller proportion of GDP in the UK in 2008 than in the US, France and Germany and the gap has widened since 2000. UK business expenditure on R&D (as a percentage of GDP) also remains lower than that of France, Germany and the US, and has done so since the early 1990s.

The skills base of the UK economy is an important factor contributing to productivity.[23] The proportion of the working-age population who have achieved qualifications at degree level or above (NQF level 4 and over) has consistently risen since 1997. In contrast, the proportion failing to achieve five or more good GCSEs has steadily declined. The proportions with highest qualifications at NQF Levels 2 and 3 have not changed much, because, although more individuals have acquired such qualifications, some have then moved on to acquire even higher-level qualifications. The net result is that in the UK the proportion of adults with only low formal qualifications was very similar to that for the OECD in 2008. The proportion of adults in the UK with intermediate qualifications was slightly lower than for the OECD in 2008, while the proportion of adults with higher level qualifications was higher than in the OECD. Thus, while the UK compares favourably against the OECD mean with respect to higher (tertiary) level qualifications, it has failed to outperform the OECD over 2002-08 with respect to reducing the proportion with only low qualifications.[24]

2.3.3 Labour market

Employment rate

The UK has one of the highest employment rates in the OECD. During the period of robust economic growth 2000-07, the UK annual employment rate remained consistently at around 72%, a similar level to that in the USA. During this period, in most other EU countries the employment rate was lower than in the UK (with the exception of Denmark, the Netherlands and Sweden); but in recent years Germany has made some progress closing the gap with the UK. Much, but not all, of the disparity in employment rates amongst EU nations is reflected in differences in unemployment. Differences in employment rates between the UK and nations outside the EU also reflect greater differences in activity rates.

More recently, employment rates in the EU and the other G7 and OECD countries have fallen because the global downturn has cut employers' demand for workers. In the UK, the employment rate held up until 2008, but then fell to 70.5% in 2009 and to 69.0% in 2010, a sharper fall than for the rest of the EU as a whole.

[21] See tables 3.3 and 3.4 in the productivity chapter for further details and data.
[22] See section 3.4.1 and 3.4.2 for further data and details on investment and innovation.
[23] Qualifications data can be found in the Skills chapter, chapter 5.
[24] For international qualifications data see Figures 5.7 and 5.8.

Structure of employment

UK employment is now heavily concentrated in the service sector. Public services accounted for around 30% of employment in 2009; employment in the public services expanded markedly during the early 2000s when government spending was boosted; and the most rapid growth in public services has been in the NHS and in education. However, the public sector spending cuts and recovery programme focused on private sector growth announced in the June 2010 budget implies the share of employment in the public sector is to be reduced in the near future. The other sectors that generated most jobs during the 2000s were: financial and business services, a large sector (17% of employment in 2009) that averaged only modest growth because new technologies and other factors have led to job losses in parts of the sector; and construction, a small sector (less than 8% of employment in 2009) that averaged rapid employment growth when construction activity flourished but saw a fall of 7% in the number of workers in 2009.

Both business and consumer services related to leisure have enjoyed significant employment growth. In manufacturing (11% of employment in 2009), however, jobs have continued to be shed (-18% over 2007-09) because those manufacturing activities that remain in the UK have relatively high productivity growth.[25]

Different sectors have different occupational structures and so changes in the sectoral structure of the economy have important implications for the occupational structure and so the demand for skills. The UK is characterised by a large and growing share of managerial and professional occupations, a growing share of personal service occupations, and diminishing shares of skilled trades and process, plant and machinery operatives.

Technological and other changes have also been altering the pattern of skills demands for occupations within sectors. Globalisation is putting a greater emphasis on flexibility, which requires a highly-skilled workforce, able to respond quickly to change and to deliver high value-added products and services. At the same time, there has been steady growth in employment in many parts of the service sector requiring relatively low-skilled workers as well as knowledge workers.

The impact of demographic change

Demographic change has also affected the size and structure of the labour force. The robust employment growth of the early 2000s was supported by both a significant increase of the size of the population of working-age and a gradual rise in the employment rate (i.e. the proportion in employment).

The trends underlying the gradual rise in the employment rate have been increasing the participation of women and older people in the labour force. This has been supported by changes in social attitudes and industrial structure. Legislative changes have also made labour market participation easier for older people – discriminatory employment on the basis of age has been made illegal, and the automatic retirement age of 65 has been abolished. In contrast, the employment rate among men has not increased, and this reflects structural changes which have reduced the demand for workers in some sectors and occupations which have traditionally had a majority of male workers.

In recent years the growth in the total and working-age populations has accelerated, supported by increased inflows of net migration. Between 2000 and 2008, the population grew on average by 312,000 per annum, with net immigration accounting for 186,000 per

[25] See table 4.8 and Employment chapter for data.

annum. In turn, the working-age population increased by 238,000 per annum. This compares with average growth in total population of 165,000 per annum over 1990-2000, net immigration 75,000 per annum and working-age population 93,000 per annum.[26]

Official population projections published by ONS expect recent trends in demographic change to continue. That is, an increasing role in the workforce for women, immigrants and older workers is projected. Population growth is expected to be supported by strong net immigration, which is projected to peak over 2009-11 with inflows of 200-206,000 pa; at the same time, the UK birth rate is expected to weaken slightly from 1.93 children per woman in 2008-09 to 1.89 children per woman in 2010-11, and assumed to average 1.84 children per woman in the long term. However, these projections are subject to a great deal of uncertainty. It remains to be seen how successful the coalition government will be in reducing net immigration from around 200,000 in 2010 to tens of thousands in 2015. From April 2011 a permanent cap of 21,700 on skilled immigration from outside the EU is set to take effect. A cap of 1,000 will be placed on exceptionally talented individuals and a cap of 20,700 will be placed on skilled (graduate) workers (Tier 2). These caps do not apply to intra-company transfers.

The growth in the working-age population is expected to accelerate, with stronger growth among the female population as the state pension age of women is increased from 60 in 2010 to 66 by 2020. Growth in the male working-age population is expected to slow markedly. The expansion of the prime-age (25-49) population (which has the highest rates of participation in the labour force) is expected to slow after 2011 and the number of people aged 50 and over (with lower than average participation rates) will continue to increase dramatically. Projections of the size of the UK population in each age group can be made with reasonable confidence because the factor over which there is most uncertainty, namely the extent of international migration, has only a modest impact. It is likely that an increasing number of older women will choose to remain economically active, as younger cohorts of women who have been more active throughout their lifetime enter older age groups.

2.3.4 Inequality

Headline indicators of economic inequality show that, including the redistributive impact of taxes and benefits, income distribution in the UK is less equal than the OECD average, although has improved in recent years.[27] For example at 0.34 for 'mid-2000s' (2004), the Gini coefficient[28] for the UK was higher than in France (0.28), Germany (0.30), and the OECD average (0.31), but lower than in the USA (0.38). More recent data from Eurostat indicate that the level of income inequality in the UK fell slightly between 2005 and 2009 and during the recession; but it remains high compared to some of its EU neighbours, most notably the Scandinavian countries.

With regard to regional disparities within the UK, there is a close link between employment, productivity, and earnings in a region and the skills base in that region. The variation of regional prosperity in the UK remains high; much growth and prosperity is concentrated in London and the adjoining regions. London and the South East account for almost one-third of UK GVA and this share has grown steadily since the turn of the century.[29] Those regions with the highest proportion of high-skilled workers have relatively high productivity and earnings; those with high proportions of no or low-skilled workers have relatively low

[26] See population section of *Almanac Online* for further data: https://almanac10.ukces.org.uk/context/A5
[27] See tables 6.1 and 6.2 in the Inequality chapter.
[28] The Gini coefficient is a measure of income distribution; it ranges from 0, indicating perfect equality, to 1, indicating perfect inequality. See also Glossary of Terms.
[29] Regional GVA data can be found on the *Almanac Online* website: https://almanac.ukces.org.uk/context/A2

employment rates.[30] Again, London's position is rather different because of the scale of in-commuting by high-skilled workers.

Disparities are also evident by ethnic group. For example, qualification rates of different groups vary widely within the UK, and overall those with low or no qualifications have poorer prospects for employment and earnings. A higher proportion of those from Asian or Asian British ethnic groups in particular have low or no qualifications. Those of Chinese ethnic background have the highest achievement in terms of acquisition of Level 4 qualifications or higher.[31]

[30] Table 4.3 gives employment rate by region, figure 5.14 gives the geographical distribution of skills.
[31] Data on qualifications level by ethnicity can be found on *Almanac Online*: https://almanac.ukces.org.uk/Skills/D1; https://almanac.ukces.org.uk/Skills/D2

3 Productivity

Productivity Chapter Summary

Productivity is one of the key outcomes of interest which contributes directly to economic performance. Raising productivity is key to improving prosperity.

In general terms productivity is defined as the ratio of output to input. Our main area of interest here is in labour productivity, and so the input of interest will be some measure of labour input. When measuring labour productivity, there are different measures of output and of labour input (or population) that can be used. GDP (or, for sectoral or regional indicators, GVA) per hour worked is the preferred measure because it takes account of differences in the average length of working week, part-time working, double job holding, and holidays, all of which affect the measure of GVA per worker. The data assembled in this chapter measure productivity as output (GDP or GVA) per hour worked where it is available, and output per worker where the per hour worked measure is not available.[32]

The international evidence indicates that compared to the OECD average the UK has made steady progress since 2000. In 2000 it was ranked 17th for productivity measured by GDP per hour worked, and by 2008 it had moved up to 11th. Nevertheless, the improvement against key comparator countries, like the US, France and Germany has been small, and against some countries the gap has widened.

Within the UK, the data show that England has the highest productivity of the four UK nations. Looking at productivity over time, GVA per hour worked in Wales and Northern Ireland fell relative to the UK average, between 2000 and 2008. In Scotland productivity rose relative to the UK average over the same period.

Within England, London has the highest level of productivity by some distance. In 2008 GVA per hour worked in London was 33% above the UK average. Behind London, the South East and East of England were the only other regions where productivity was above the UK average in 2008. London and, to a lesser extent, the East of England improved their productivity level relative to the UK average over 2000-08; in the South East, the South West and the East Midlands the relative position was broadly unchanged; while in the remaining English regions the relative position deteriorated. On the latest data, the North West had the lowest level of productivity of the English regions in 2008, slightly ahead of the level in Wales.

Across the whole economy GVA per worker increased by 6.5% in real terms between 2002 and 2009 (a rise of 10.75% over 2002-07 followed by a fall of 3.75% over 2007-09). The largest increases over 2002-09 came in manufacturing, and transport & telecommunications, where GVA per worker increased by 29% and 22%, respectively. These are also the only two sectors that did not register a fall in 2009. After these sectors, business services and finance experienced the largest increases in productivity, with GVA per worker increasing by 14% between 2002 and 2009. However, business services and finance was the sector that registered the sharpest slowdown over 2006-09, with productivity growth decelerating from 7% in 2006 to -7% in 2009. Productivity growth in distribution, hotels & restaurants also slowed sharply, from 7% in 2006 to -4% in 2009. Productivity in public services is also estimated to have fallen in 2009.

[32] Gross Domestic Product GDP) is a measure of the value of total economic activity and can be measured in three ways: 1) as the sum of all the Value Added by all activities that produce goods and services (output); 2) as the total of incomes earned from the production of goods and services (income); or 3) as the total of all expenditures made either in consuming finished goods and services or adding to wealth, less the cost of imports (expenditure). Gross Value Added (GVA) is the difference between the value of the output produced by a sector or region and its intermediate consumption. Intermediate consumption is the cost of raw materials and other inputs that are used up in the production process.GDP/GVA per worker is generally seen as a better measure of productivity than GDP/GVA per person/per person of working age as it makes the distinction between those in work and those not in work.

3.1 Introduction

3.1.1 The importance of productivity

Productivity is important because it is one of two drivers of the UK's prosperity, as recognised in *Ambition 2020* (see also section 1.3). It matters because increased productivity translates into an increase in output (volume and/or quality) without any increase in input (labour and materials). Indeed, with finite resources productivity increases are the only way to maintain economic growth. As such, raising productivity is seen as the key to improving peoples' living standards. Productivity is also important as international evidence indicates that high productivity tends to be associated with high employment rates.

3.1.2 Productivity: definition and drivers

For a detailed discussion on defining and measuring productivity, and its drivers see appendix 5.

With regard to the drivers, HM Treasury (2000) identify five drivers that interact to underlie productivity.

- Investment;
- Innovation;
- Skills;
- Enterprise;
- Competition.

These drivers are the focus of the data and analysis in this chapter. Each of these is considered to be an *external driver* in the context of the individual, with the exception of skills; skills are also an *outcome* measure, and underpin other productivity drivers. The *economic cycle* is an additional influence on productivity. It is also important to recognise the role played by the internal workings of the firm (management and leadership; high performance working practices (HPWPs); and skills utilisation). The influences are not mutually exclusive, but we have not attempted to map out all of the inter-linkages here.

Where possible, the data assembled in this chapter measure productivity as output (GDP or GVA) per hour worked where it is available, and output per worker where the per hour worked measure is not available. The measure for output for international comparisons across countries is gross domestic product (GDP), while at regional and sectoral level gross value added (GVA) is used as GDP is not defined at these levels.

3.2 International comparison of productivity

The international evidence indicates that compared to the OECD average the UK continues to enjoy high levels of productivity. *GDP per hour worked* in the UK was around 8.75% higher than in the OECD as a whole in 2000, and almost 10% higher in 2008 (Table 3.1).

Table 3.1: International comparison of GDP per hour worked (UK=100)

International comparisons of GDP per hour worked (UK=100)[33]

	2000	2000 Ranking	2006	2006 Ranking	2007	2007 Ranking	2008	2008 Ranking
Australia	103	13	100	12	102	11	96	15
Austria	108	10	102	10	103	10	102	10
Belgium	137	3	122	4	124	4	120	5
Canada	101	14	95	15	95	17	92	17
Czech Republic	46	27	52	25	55	25	54	25
Denmark	110	9	102	10	100	14	97	14
Finland	101	14	96	14	101	12	98	13
France	121	5	118	6	119	7	118	6
Germany	113	8	114	8	115	8	112	8
Greece	68	22	69	21	71	21	71	21
Hungary	48	25	51	26	52	26	54	25
Iceland	84	19	82	19	82	20	82	19
Ireland	115	7	123	3	128	3	122	4
Italy	105	12	91	18	92	18	91	18
Japan	84	19	81	20	83	19	81	20
Korea	47	26	49	27	52	26	52	28
Luxembourg	164	1	167	1	177	1	173	1
Mexico	42	29	41	29	43	29	42	30
Netherlands	129	4	122	4	124	4	124	3
New Zealand	75	21	68	22	70	22	69	22
Norway	147	2	165	2	161	2	167	2
Poland	43	28	45	28	47	28	47	29
Portugal	60	23	60	23	62	24	61	24
Slovak Republic	49	24	60	23	65	23	67	23
Spain	93	18	93	17	96	16	95	16
Sweden	108	10	105	9	108	9	104	9
Switzerland	101	14	95	15	101	12	100	11
Turkey	n/a	n/a	n/a	n/a	n/a	n/a	53	27
United Kingdom	100	17	100	12	100	14	100	11
United States	118	6	117	7	120	6	117	7
OECD countries	92	n/a	90	n/a	92	n/a	91	n/a

Sources: OECD, National accounts, LFS.

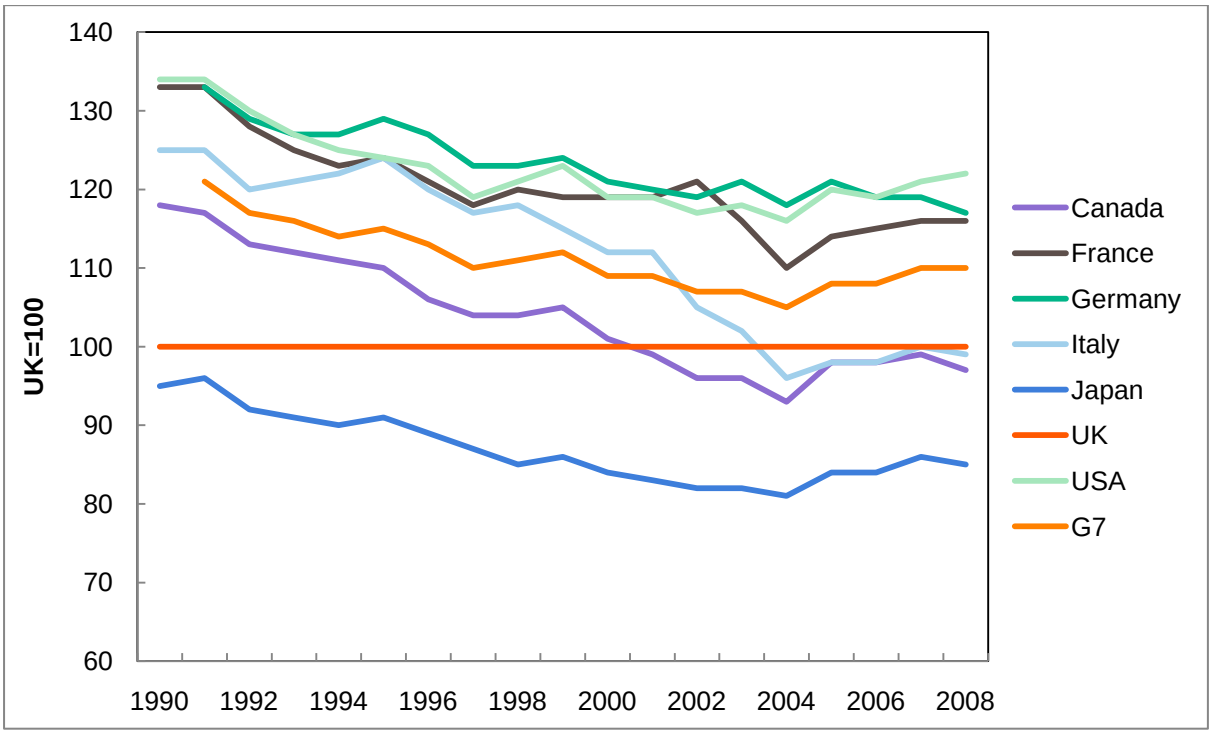
Statlink: http://stats.oecd.org/index.aspx
Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.1_International_Productivity_Comparison.xls.

Nevertheless, some countries still manage to enjoy higher levels of productivity than the UK. For example productivity in the Netherlands and Belgium was around 20-25% higher than the UK in 2008, even though the UK has closed the gap with these countries since 2000.

Productivity in the UK also remains below the G7 average (Figure 3.1). While the UK has closed the gap over time with countries like Italy and Canada, it still remains behind France, Germany and the US by 10-20%. Meanwhile, productivity in Japan continues to lag that in the UK by around 19%.

[33] These rankings may not match those shown in *Ambition 2020* as the figures presented here are calculated slightly differently and based on more recent data which includes revisions to time-series figures.

Figure 3.1: GDP per hour worked: G7 countries



Sources: ONS International Comparisons of Productivity.
Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.1_International_Productivity_Comparison.xls.

There are a few countries where the gap with the UK has widened. Ireland's productivity has consistently been ahead of the UK, and the gap increased over 2000-08, from 15% in 2000 to 22% in 2008. In Norway and Luxembourg the productivity gap against the UK increased over 2000-2008 from around 50-60% to 70-75%.

Overall, the evidence suggests the UK has made productivity gains against competitors since 2000. In 2000 it was ranked 17th among OECD countries for productivity measured by GDP per hour worked; by 2007 it had moved up to 14th and it improved further in 2008, to 11th. Nevertheless, the improvement against key comparator countries like the US, France and Germany has been small, and the gap with a few other countries has widened.

When comparing the UK with these countries on the basis of GDP per worker, the same story emerges but the differences are smaller. This reflects the fact that workers in the UK tend to work longer hours. Among the G7 countries the exceptions are the US, where in 2000 the gap was bigger, and Italy, which ranks above the UK in terms of GDP per worker. This is because workers in these two countries work longer hours, on average, than workers in the UK (data from the OECD's Labour Force Statistics show that in 2008 average annual hours worked per worker were 1,652 in the UK, 1,796 in the US and 1,808 in Italy).

Table 3.2: International comparisons of GDP per worker (UK=100)

	2000	2000 Ranking	2006	2006 Ranking	2007	2007 Ranking	2008	2008 Ranking
Australia	106	9	103	8	104	7	101	11
Austria	108	8	104	7	104	7	104	8
Belgium	121	5	115	4	114	4	114	4
Canada	104	12	99	13	100	13	97	15
Czech Republic	58	25	65	23	69	23	69	23
Denmark	100	14	96	15	97	16	96	16
Finland	100	14	97	14	101	12	100	12
France	110	7	106	5	108	5	109	5
Germany	103	13	102	10	102	11	102	9
Greece	87	21	92	18	94	18	96	16
Hungary	57	26	64	24	66	24	69	24
Iceland	92	19	88	19	88	20	89	19
Ireland	115	6	122	3	126	3	118	3
Italy	122	4	106	5	108	5	108	6
Japan	89	20	87	20	89	19	87	20
Korea	68	23	69	22	72	22	71	22
Luxembourg	157	1	160	1	162	1	160	1
Mexico	46	29	47	29	48	29	48	29
Netherlands	105	10	103	8	104	7	105	7
New Zealand	79	22	73	21	74	21	73	21
Norway	127	2	144	2	141	2	149	2
Poland	49	27	54	27	56	28	56	28
Portugal	61	24	62	25	63	25	64	26
Slovak Republic	49	27	59	26	63	25	66	25
Spain	97	18	93	17	95	17	95	18
Sweden	105	10	102	10	103	10	102	9
Switzerland	99	17	94	16	99	15	99	14
Turkey	47	28	54	28	60	27	62	27
United Kingdom	100	14	100	12	100	13	100	12
United States	127	2	n/a	n/a	n/a	n/a	n/a	n/a
OECD countries	98	n/a	96	n/a	98	n/a	97	n/a

Notes: *Data for US come from ONS' International Comparisons of Productivity (data not available from OECD).

Sources: OECD, National accounts, LFS.

Statlink: http://stats.oecd.org/index.aspx.

Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.1_International_Productivity_Comparison.xls.

Countries which experienced growth in GDP over 2000-08 did not always show clear gains in productivity. For example, countries such as Ireland, Spain, Poland and Iceland all enjoyed above-average GDP growth over the period, but only Ireland saw a significant improvement in productivity. The severe economic difficulties experienced by these countries during the recession (but not reflected in this 2008 data) suggest that the productivity measure may be more illustrative of underlying economic strength.

3.3 Productivity variation in the UK

3.3.1 Productivity by region

The evidence on productivity in the UK nations and regions is presented in Tables 3.3 and 3.4 below. On both measures of productivity, England leads the way amongst the four UK nations, and is the only one of the four nations to have productivity above the UK average. Looking at productivity over time, England's relative GVA per hour worked increased only slightly between 2000 and 2008 (Figure 3.2).

Among the other UK nations, relative productivity in Scotland also changed little over 2000-08, increasing from 95% of the UK average in 2000 to 96% in 2008. In Wales and Northern Ireland, relative productivity fell between 2000 and 2008. Productivity in Wales was around 15% lower than the UK average in 2008, and in Northern Ireland it was nearly 20% lower.

Table 3.3: GVA per hour worked by UK nation and region (UK=100)

	2000	2006	2007	2008
UK	100	100	100	100
England	101	102	102	102
London	124	132	132	133
South East	105	106	105	104
East of England	97	100	102	101
South West	95	95	94	94
East Midlands	92	93	92	93
West Midlands	92	88	89	90
Yorkshire and Humberside	93	89	88	89
North West	93	90	90	88
North East	94	90	90	90
Scotland	95	96	97	96
Wales	91	84	85	86
Northern Ireland	86	82	81	81

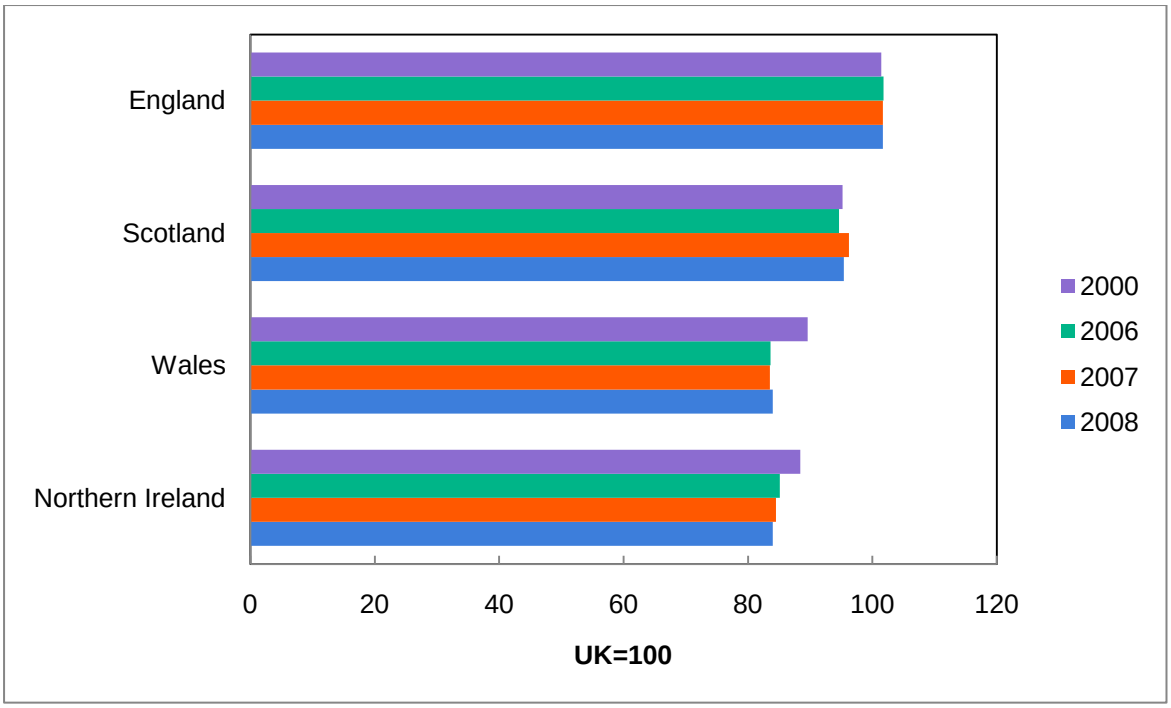
Sources: ONS.
Statlink: http://www.statistics.gov.uk/pdfdir/pro0310.pdf.
Datalink:
https://almanac.ukces.org.uk/productivity/B1/B1.3_UK_Output_per_Worker_by_Region.xls.

Table 3.4 GVA per filled job by UK nation and region (UK=100)

	2000	2006	2007	2008
UK	100	100	100	100
England	101	102	102	102
London	130	139	140	141
South East	103	105	104	103
East of England	96	98	100	99
South West	93	93	91	91
East Midlands	92	93	92	92
West Midlands	93	88	89	89
Yorkshire and Humberside	91	88	87	87
North West	93	89	89	87
North East	93	88	88	88
Scotland	95	95	96	95
Wales	90	84	84	84
Northern Ireland	88	85	85	84

Sources: ONS.
Statlink: http://www.statistics.gov.uk/pdfdir/pro0310.pdf.
Datalink:
https://almanac.ukces.org.uk/productivity/B1/B1.3_UK_Output_per_Worker_by_Region.xls

Figure 3.2: GVA per hour worked by UK nation (UK=100) 2000, 2006-2008



Sources: ONS.
Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.3_UK_Output_per_Worker_by_Region.xls.

Within England, London has the highest level of productivity by some distance. In 2008 GDP per hour worked in London was 33% above the UK average, up by around 7% on the level in 2000. Behind London, the South East and East of England were the only other regions where productivity was above the UK average in 2008 (although their levels fell very slightly in 2008). London and, to a lesser extent, the East of England improved their productivity level relative to the UK average over 2000-08; in the South East, the South West and the

East Midlands the relative position was broadly unchanged; while in the remaining English regions the relative position deteriorated. On the latest data, the North West had the lowest level of productivity of the English regions in 2008, slightly ahead of the level in Wales.

An analysis of regional performance by GVA per filled job presents similar results (Table 3.4). London shows the major difference among the two measures, with GVA per hour worked at 133% of the UK average in 2008 and GVA per filled job at 141% of the UK average. The difference reflects the fact that the number of annual hours worked per filled job is higher in London than in the other UK nations and regions.

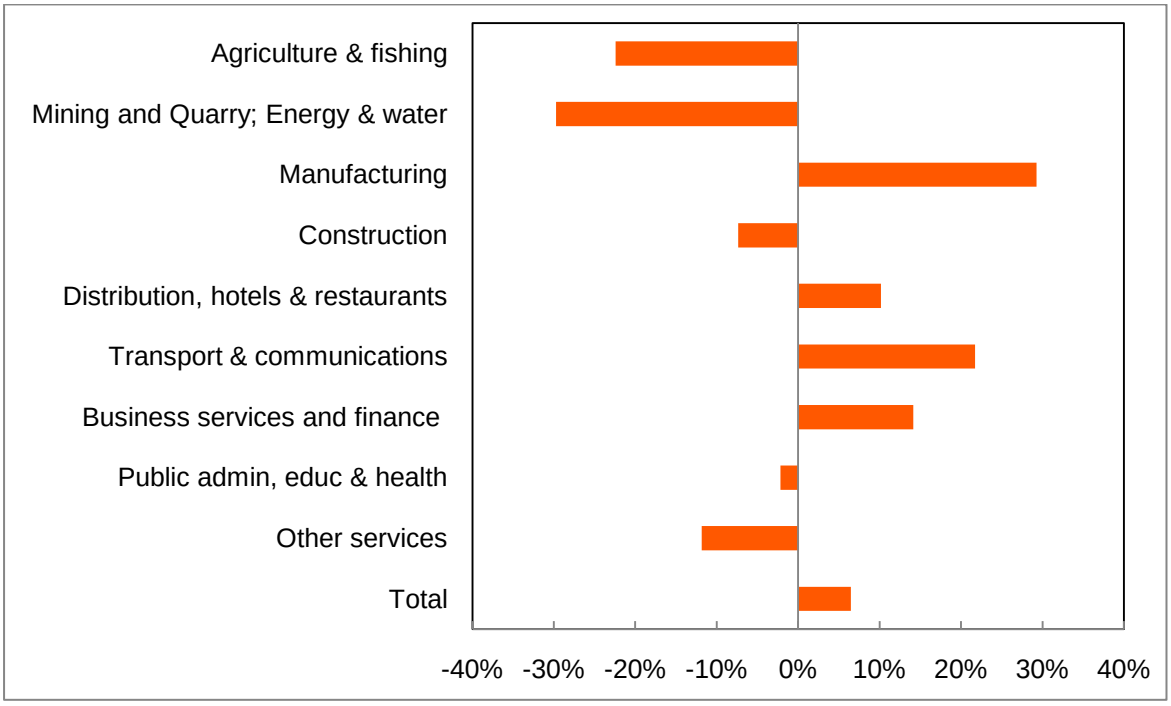
Among the English regions, the South East and East of England were, again, just behind London in 2008. While the relative position for GVA per filled job remained unchanged in the South East between 2000 and 2008, it increased by around 3 pp over the same period in East England. All the other regions except for the East Midlands saw falls in relative productivity between 2000 and 2008, but in these cases the outcome was evident on both measures.

Scotland's GVA per job filled shows a steady performance, constant at 95% of UK average. Thus, its relative productivity in 2009 was identical to that in 2000. Northern Ireland and Wales both saw GVA per job filled fall relative to the UK average between 2000 and 2009, from 90% to 84% for Wales, and from 88% to 84% for Northern Ireland.

3.3.2 Productivity by sector

Figure 3.3 shows that across the whole economy the level of GVA per worker increased by 6.5% between 2002 and 2009 in real terms (from £36,200 to £38,540). This increase was driven by sharp rises in productivity in manufacturing, transport & communications, and business services and finance. In 2009, GVA per worker in manufacturing was 29.2% higher than it was in 2002, driven by firms relocating high volume, low value-added production overseas and focusing on low volume, high value-added production in response to increasing global competition. In transport & communications the corresponding increase was 21.7%. In business services & finance (which accounts for the largest share of output in the UK) GVA per worker in 2009 was 14.1% higher than it was in 2002. The largest falls in productivity between 2002 and 2009 came in agriculture & fishing and the mining and utilities sector (mining and quarry; energy & water). In construction, GVA per worker decreased by 7% over the same period as a result of the slump in output in the recession, while the other services sector registered a 12% decrease. The largest sector by employment is public sector services (public administration, education & health). Value added, and hence productivity, in this sector is notoriously difficult to measure; on the current ONS estimates GVA per worker was around 2% lower in 2009 than in 2002.

Figure 3.3 Percentage Change in GVA per person employed in the UK by sector 2002-09



Notes: Growth rates are based on chained volume measure data[34] with 2006 as the base year.
Sources: ONS Blue Book, LFS.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143&Pos=1&ColRank=1&Rank=272.

However, looking into these changes in more detail indicates that during the recession GVA per worker fell sharply in 2009 to a lower level than in 2007 (Table 3.5). One of the unusual features of the 2009 experience compared with earlier recessions is the relatively modest job losses given the decline in output (due in part to the adoption of short-time working to retain skilled workers). While employment is typically an indicator which lags behind overall economic performance, the depth of the decline would have been expected to produce a greater number of people out of work.

Across the sectors, agriculture & fishing and mining and quarry; energy & water experienced the sharpest falls in productivity during the recession as demand for commodities and primary goods slumped. In agriculture & fishing, GVA per worker fell by 16.5% between 2007 and 2009; in mining and quarry; energy & water it fell by 12.6%. Strong falls in GVA per worker were also evident in construction (5.9%) and distribution, hotels & restaurants

[34] The UK National Accounts (Blue Book) 2003 introduced annual chain-linking, a method for constructing aggregate volume measures of economic growth which better reflect the changing structure of industry and patterns of expenditure. A volume, or real, measure of the economy has had removed from it the impact of changing prices.

Previously the detailed estimates for growth for different industries were summed to a total by using as a weight information on how important each industry was in a fixed base year and according to the price structure in that base year. Changes in relative prices and industry weights subsequent to the base year were not incorporated. The year from which this information on relative prices and industry weights was drawn was updated at five-yearly intervals. This method produced constant-price series and is described as fixed-base aggregation.

The annual chain-linking method replaced the constant-price series with chained volume measures (CVM), which use information for the price structure updated every year to give each industry the most relevant weight that can be estimated. CVM estimates of growth should, therefore, provide a more accurate picture of changes to the economy's structure. CVM indices are referenced to the most recent year for which a price structure is available; later years are compiled in the same way as constant-price data.

The move to annual chain-linking involved some loss of additivity in the components of aggregate totals in the years prior to the reference year. For example, if GVA for each industry is summed through simple addition the total across the industries will not correspond to the CVM estimate of total GVA. A more complex method of weighting the series together is required.

The reference year for CVM data is usually updated annually at the time of the release of the Blue Book (National Accounts).

(7.5%) between 2007 and 2009, as investment and consumer spending dried up. Business services and finance experienced a smaller fall in productivity during the recession (3.8%). A fall of similar magnitude was recorded in public services, where productivity fell by 1.5% in 2008 and 2.2% in 2009. Manufacturing and transport & communications were the two sectors to see productivity increase during the recession. In the case of manufacturing productivity increased by 5.7% between 2007 and 2009; in transport & communications it increased by 2.3% over the same period.

Table 3.5 GVA per person employed in the UK by sector (£'000s)

	2006	2007	2008	2009
Agriculture & fishing	19.0	18.4	17.5	15.4
Mining and Quarry; Energy & water	180.2	156.9	144.1	137.1
Manufacturing	41.3	41.5	43.4	43.9
Construction	32.0	32.7	32.2	30.8
Distribution, hotels & restaurants	31.2	32.5	31.4	30.1
Transport & communications	42.9	45.3	45.1	46.4
Business services and finance	81.4	81.8	84.5	78.7
Public admin., education & health	18.3	18.7	18.4	18.0
Other services	34.1	34.3	33.8	32.2
Total	39.1	40.1	40.1	38.5

Notes: Figures are based on chained volume measure data[35] with 2006 as the base year.

Sources: ONS Blue Book, LFS.

Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=1143&Pos=1&ColRank=1&Rank=272.

In 2009, the highest level of productivity came in the highly capital-intensive combined sector mining & quarrying and energy & water. Business services & finance was second, with an average GVA per worker of £78,700 (in constant prices). Behind this sector, productivity in manufacturing and transport & communications was in the region of £40-50,000. In public sector services, GVA per worker was £18,000 in 2009.

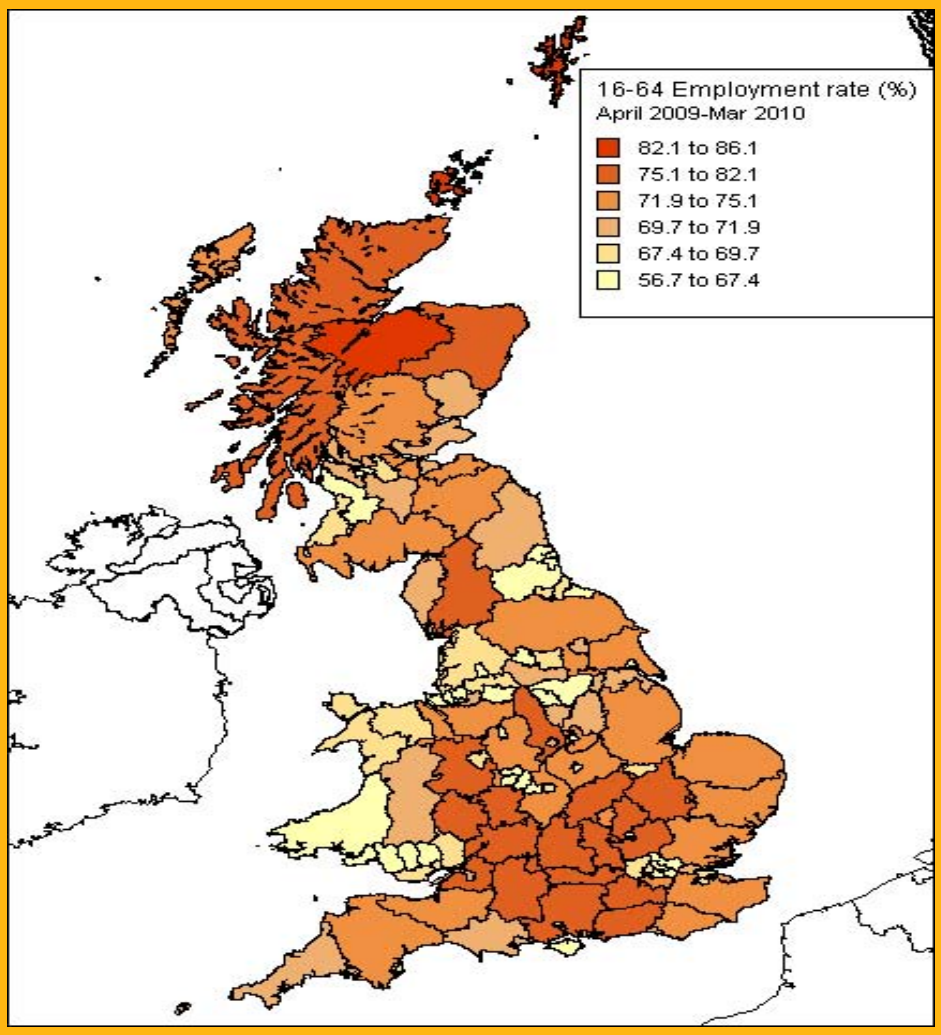
[35] See footnote 34.

Spotlight Feature: Functional Economic Geographies

Why local matters: variations in local economic performance

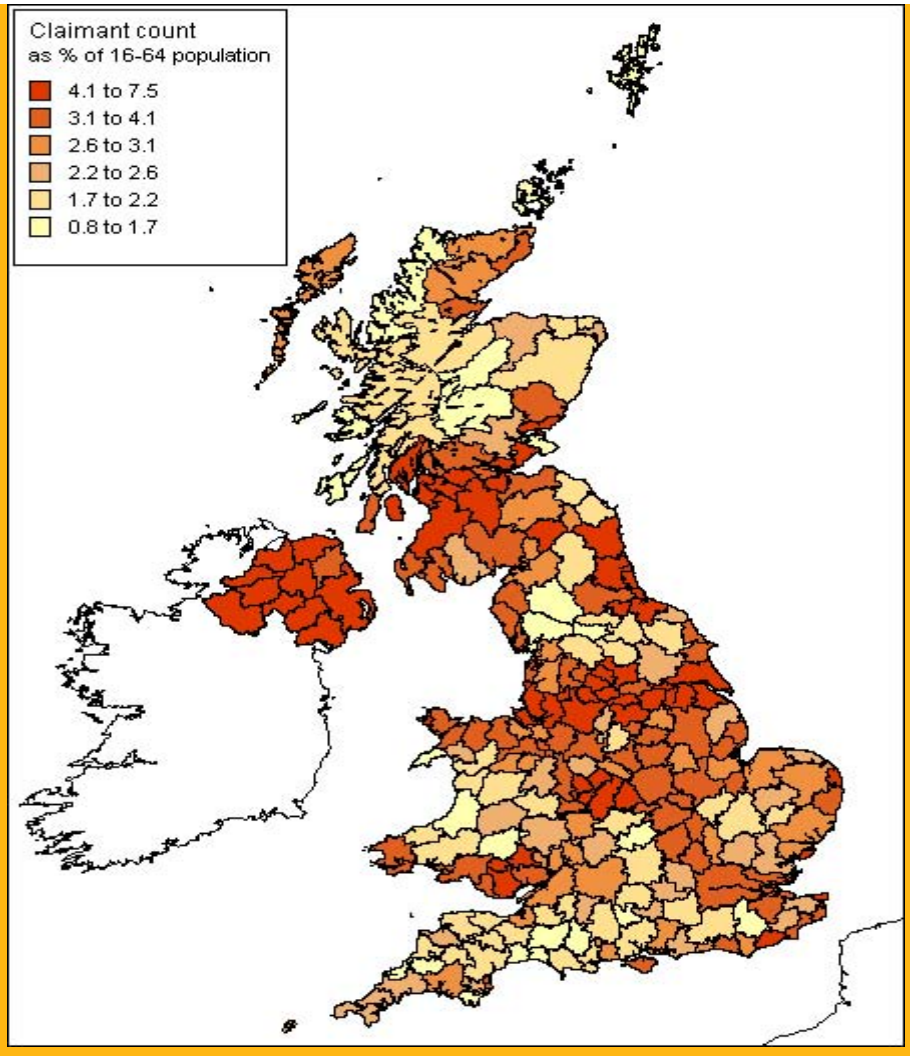
Alongside an interest in economic and labour market information at national level and in international comparisons between the UK and other countries, there is an ongoing concern about sub-national variations in experience. There are marked and persistent variations in employment rates, unemployment, sectoral and skills profiles, earnings, output and productivity at regional and sub-regional levels (see Figures S3.1, S3.2 and Table S3.1).

Figure S3.1: Working age employment rate for NUTS 3 areas in Great Britain, 2009/10



Sources: Annual Population Survey.

Figure S3.2: Claimant count as a proportion of the working age population for Travel to Work Areas in the UK, 2009/10



Sources: JSA Claimant Count (via Nomis).

For example, Figure S3.1 shows that working age employment rates are highest in a swathe of local areas in central southern England (outside London) and the south Midlands. Figure S3.2 indicates that Travel to Work Areas in Northern Ireland, west-central Scotland, north-east England, west Cumbria, the Mersey-Humber belt, the South Wales Valleys and the metropolitan West Midlands display amongst the highest claimant count proportions. Table S3.1 shows that there are marked intra-regional variations in GVA per head – most notably in London, the South East, the South West, Scotland and Northern Ireland.

Table S3.1: Inter-regional range in GVA per head indices at NUTS 3 area level, 2007

Nation/ Region	Per head index (UK=100)	Top NUTS 3 area	Per head index (UK=100)	Bottom NUTS 3 area	Per head index (UK=100)
North East	77.5	Tyneside	92.0	Northumberland	62.2
North West	85.0	Halton and Warrington	111.9	Wirral	56.4
Yorkshire & the Humber	83.6	Leeds	111.2	East Riding of Yorkshire	65.4
East Midlands	86.3	Nottingham	130.9	South Nottinghamshire	68.8
West Midlands	85.4	Solihull	113.2	Staffordshire	74.4
East of England	95.6	Peterborough	135.2	Thurrock	78.8
London	168.9	Inner London – West	507.1	Outer London - East and North East	69.4
South East	106.5	Berkshire	155.2	Isle of Wight	65.4
South West	91.4	Swindon	150.9	Torbay	62.7
Wales	74.4	Cardiff and Vale Of Glamorgan	106.2	Isle of Anglesey	55.1
Scotland	96.6	Edinburgh	163.9	East Ayrshire and North Ayrshire	62.6
Northern Ireland	79.5	Belfast	151.2	North of Northern Ireland	61.8

***Source*: Office for National Statistics, Regional, sub-regional and local gross value added, 2009.**
***Note*: Estimates of workplace based GVA allocate income to the region in which the economic activity takes place.**

Such disparities have tended to remain evident in changing economic conditions, despite successive policies to narrow regional economic differentials and in order that no-one should be seriously disadvantaged by where they live. There are fears that in the context of recession, subsequent fragile growth and cuts in public sector employment, spatial and other inequalities will be exacerbated as economic advantage and disadvantage is reinforced over the economic cycle.

The fact that some regions and local areas are better placed than others to deal with economic change and associated labour market restructuring has been addressed through regional economic development policies. In 2010 the Coalition Government announced its objective to rebalance the economy towards private sector-led economic growth over the medium-term. Recognising that some places are heavily reliant on the public sector, the Coalition Government has established a Regional Growth Fund to encourage private sector enterprises and create sustainable private sector jobs.

Developments in local economic policy and implications for data analysis

The October 2010 White Paper on *Local growth: realising every place's potential* outlines measures to empower local partners to lead action to improve economic growth. The emphasis on local solutions to local issues brings with it a need for enhanced sub-national information and intelligence to support local decision-making. There are a number of different geographical units in use in the UK.

Economic and labour market data are available for a number of different sub-national spatial units (often referred to as 'geographies') in the UK. Perhaps the best known is the '*administrative geography*' of areas relating to national and local government across the UK. In the different nations of the UK this comprises:

- England - Government Office Regions, counties, unitary authorities, local authority districts and electoral wards;
- Scotland - (unitary) council areas and electoral wards;
- Wales – council areas and electoral divisions; and
- Northern Ireland – district council areas and electoral wards.

Also of particular relevance for the economic and labour market statistics is the NUTS (Nomenclature of Units for Territorial Statistics) 'geography'. NUTS was created by the European Office for Statistics (Eurostat) as a single hierarchical classification of spatial units used for statistical production across the European Union (EU) and is used for international comparisons. At the top of the hierarchy are the individual Member States of the EU and below that are levels 1 to 3:

- NUTS level 1 – 12 geographical units in the UK, comprising the Government Office Regions in England, Scotland, Wales and Northern Ireland;
- NUTS level 2 – 37 geographical units in the UK, comprising 30 counties/groups of unitary authorities in England; 4 sub-national areas in Scotland, 2 in Wales and the whole of Northern Ireland;
- NUTS level 3 – 133 geographical units in the UK, comprising 93 groups of counties/unitary authorities in England; 23 combinations of council areas, Local Enterprise Company areas and parts thereof in Scotland; 12 groups of council areas in Wales and 5 groups of district council areas in Northern Ireland.

The NUTS are stable and are only amended periodically.

There are other 'geographies' relating to the Census and to postcodes. These geographies are of particular relevance for data collected and coded at the micro area level – including data on commuting and on aspects of economic deprivation. Likewise collection of establishment postcodes in employer surveys enables information to be coded to a range of other spatial units for analysis.

There is increasing policy interest in 'functional economic geographies' (also known as 'real economic geographies' or 'natural economic geographies'). Functional economic geographies accord with the areas over which local economies operate. Such functional economic areas rarely accord with administrative boundaries.

The best known functional economic areas used in economic and labour market analysis are Travel to Work Areas (TTWAs). They are the only sub-regional economic areas robustly defined under the remit of National Statistics. TTWAs are approximations to self-contained spatial labour market areas based on micro area analysis of journey-to-work flows recorded in the decennial Census of Population data. They are designed so that the majority of the

working population are resident in the area and the majority of jobs in the area are filled by residents, while being internally contiguous and meeting a minimum population size criterion. While TTWAs are defined using aggregate commuting flows, it is possible to gain insights into variations in spatial labour market areas by mapping commuting flows for different sub-groups of workers or by adjusting methodology used to define the areas.

Although TTWAs are designed specifically to be non-overlapping, the economic reality is that some places have linkages to two or more economic centres (i.e. they are part of two or more functional economic areas).

The emerging geography of Local Enterprise Partnerships (LEPs) in England displays some examples of local authorities belonging to more than one LEP area – for example, Barnsley is part of the Sheffield City Region and the Leeds City Region, while Bassetlaw, Chesterfield, and North East Derbyshire are part of the Sheffield City Region and the Nottingham, Nottinghamshire, Derby and Derbyshire LEP area. Guidance issued jointly by the Department for Business, Innovation & Skills and Communities and Local Government in late June 2010 emphasised that LEP boundaries should reflect the 'natural economic geography' of the areas they serve and normally would include groups of upper tier local authorities (so marking a shift towards functional economic geographies).

Local/unitary authority areas are the building blocks of both the LEP and NUTS 3 areas. However, some NUTS 3 areas are split between LEP areas – for example, Halton and Warrington is a NUTS 3 area but Halton is part of the Liverpool City Region whereas Warrington is part of the Cheshire and Warrington LEP. Some LEP areas span NUTS 1 area boundaries – for example, the Sheffield City Region includes areas from Yorkshire & Humber and the East Midlands, while the South East Midlands LEP includes local areas from the East Midlands and the South East regions.

In order to inform activities designed to create an environment conducive for business success and economic growth the LEPs in England, and local economic partnerships elsewhere in the UK, will require access to economic, employment, skills and other data. Hence there is likely to be an increased demand for the provision of data for functional economic geographies. Where data are coded at the micro area level - such as postcodes, super output areas, data zones, etc. - it should be possible to generate data for such units. However, not all data are coded to and retrievable at the micro area level and this creates challenges for providing information and intelligence for some functional economic geographies.

Such challenges include those faced routinely by economic/labour market analysts, such as those relating to *statistical precision and robustness.* For example, marked variations in size (as measured by employment and/or population) between functional economic units mean that statistically robust data for particular disaggregations of employment or population sub-groups may be available for some areas but not for others.

However, there are also some new challenges. Where *functional economic areas span NUTS/other geographies* for which certain data sources (e.g. GVA) are available, new estimation techniques may be necessary to generate information needed. Where *functional economic areas are 'overlapping'* (i.e. where a local authority area is included as part of two functional economic areas) there are issues of:

- double counting - i.e. the sum of employment across all functional economic areas would exceed the actual total;
- differencing – i.e. extracting non-robust and/or confidential data for a local area by taking the difference between two overlapping functional economic areas.

As the UK as a whole and as regional and sub-regional areas strive towards economic recovery and growth, the need for accurate information and intelligence concerning employment and skills in a shifting policy environment will also become increasingly important. Developing common approaches to tackling challenges related to both the availability and reliability of data (especially of micro-data) will therefore be key.

Further reading

Business, Innovation & Skills (2010) Local growth: realising every place's potential, *Cm 7961,* TSO, Norwich.
http://bis.gov.uk/assets/biscore/corporate/docs/L/PU1068%20-%20Local%20growth

Communities and Local Government (2010) *Functional Economic Market Areas: An economic note.*
http://www.communities.gov.uk/documents/localgovernment/pdf/1469713.pdf

Green A.E. (2009) 'The Importance of Sub-National Perspectives on Employment and Skills', *Praxis* 2, UK Commission for Employment and Skills, Wath-upon-Dearne.

National Equality Panel (2010) *An Anatomy of Economic Inequality in the UK*, Government Equalities Office, London.

3.4 Evidence on key drivers of productivity

3.4.1 Investment

Investment is a key driver of productivity. Investment raises productivity by increasing the amount of capital available per worker, or through the adoption of new, better technology in the production/delivery process. The indicators we use here to measure investment are sector investment as a share of economy-wide investment, and gross fixed capital formation.

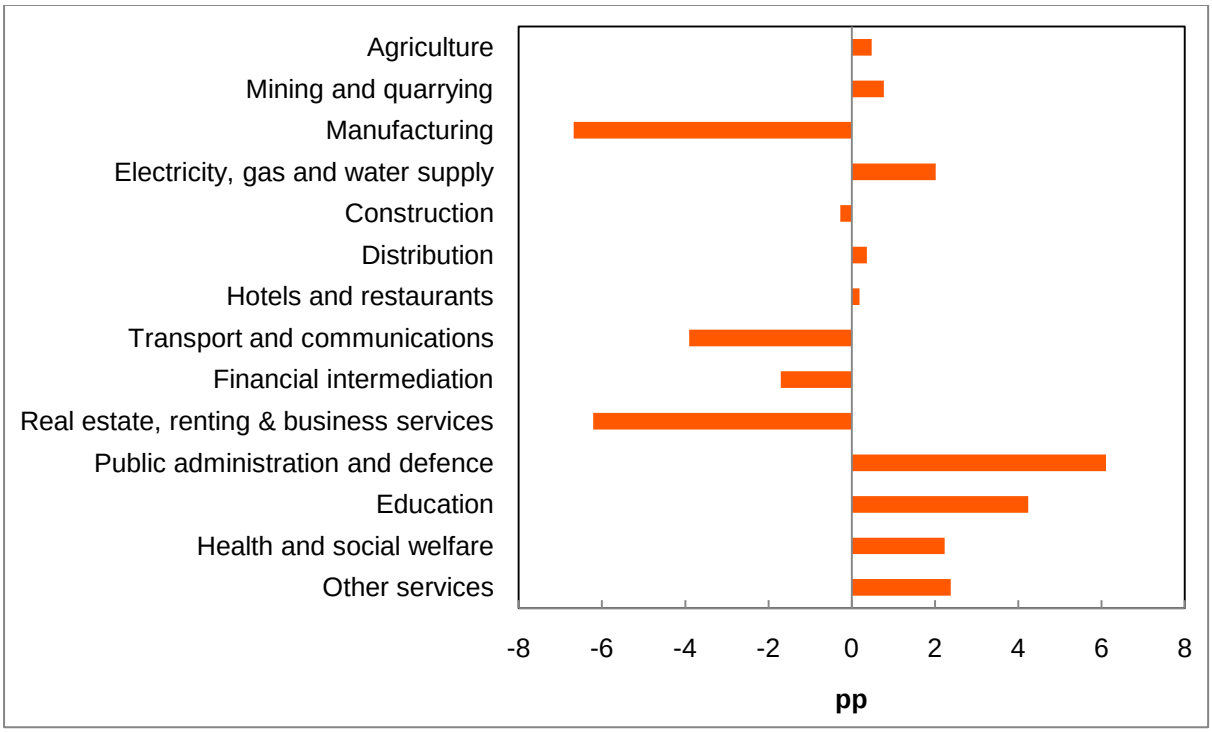
Table 3.6, which presents sector investment as a share of economy-wide investment, shows that transport & communications, real estate & business services, other services, and distribution account for the largest shares of investment. Transport & communications accounted for the largest share in 2009 (16%). This is slightly above its 2006 share, but it represents a drop of 4 pp on its share of investment in 2000 (Figure 3.4). The share accounted for by real estate & business services dropped sharply in 2009 to 11.5%, and was then 6.2 pp lower than in 2000. Manufacturing was responsible for 7.9% of sector investment in 2009, down by 1.3 pp on its 2006 share and 6.7 pp on its 2000 share.

Table 3.6 Sector investment as a share of total investment

	%			
	2006	**2007**	**2008**	**2009**
Agriculture	1.9	1.8	2.1	2.0
Mining and quarrying	3.1	3.5	3.1	3.5
Manufacturing	9.2	8.9	8.4	7.9
Electricity, gas and water supply	3.7	4.5	5.1	6.3
Construction	2.3	2.1	1.7	1.4
Distribution	12.1	12.4	10.9	10.1
Hotels and restaurants	4.1	4.2	4.2	3.6
Transport and communications	15.6	14.5	15.2	16.0
Financial intermediation	5.5	5.5	5.6	4.6
Real estate, renting & business services	14.0	15.4	13.8	11.5
Public administration and defence	7.9	7.9	9.1	10.8
Education	5.3	4.9	5.6	7.2
Health and social welfare	3.3	3.2	3.7	4.5
Other services	11.9	11.2	11.5	10.5
Total	100	100	100	100

Notes: Percentages shares of total investment based on current price data.
Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

Figure 3.4 Change in sector share of total investment, 2000-2009

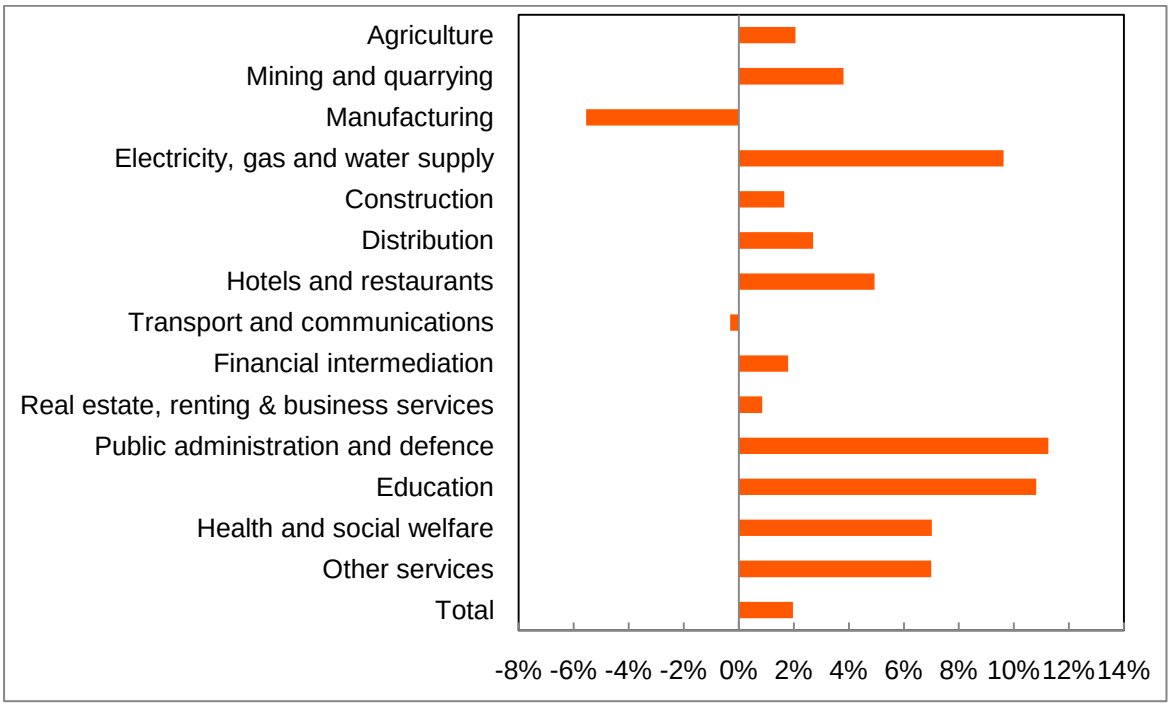


Notes: Percentages shares of total investment based on current price data.
Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

The public sector's share of investment increased substantially over the decade, reflecting the growth in public spending and the fact that it maintained similar absolute levels throughout the recession. Public administration and defence accounted for 11% in 2009, a 5.9% increase on its share in 2000. The shares accounted for by education and health increased by 3.6% and 1.5% respectively over the same period.

Turning to total investment, figure 3.5 shows that investment (gross fixed capital formation) grew by 2% per annum over 2000-09 in real terms. The strongest real growth in investment over this period came in the public sector, with investment in public administration & defence growing by an average of 11.3% per annum, and investment in education growing by 10.8% per annum. Investment in electricity, gas & water grew by 9.6% per annum in real terms over 2000-09, while investment in health & social welfare and in other services rose by 7% per annum. During the same period investment in hotels & restaurants increased by 4.9% per annum in real terms. A key feature is the fall in investment in manufacturing. Investment in manufacturing fell by around 5.6% per annum between 2000 and 2009 reflecting a negative long-term trend, rather than a short-term effect of the recession. Indeed, over the last decade investment in manufacturing fell in each year but 2007.

Figure 3.5 Average growth in gross fixed capital formation by sector (% pa), 2000-2009



Notes: Figures are based on CVM data (£2006m).
Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

Table 3.7 Gross fixed capital formation by sector, 2006 level (£m) and annual percentage change

	2006 level (£m)	2006	2007	2008	2009
Agriculture	2940	0.0%	3.5%	11.5%	-20.8%
Mining and quarrying	4751	11.2%	24.1%	-11.4%	0.6%
Manufacturing	14004	-2.5%	5.9%	-5.1%	-21.1%
Electricity, gas and water supply	5591	34.7%	36.4%	16.3%	6.3%
Construction	3518	16.3%	1.8%	-16.1%	-32.3%
Distribution	18490	-2.1%	12.9%	-10.7%	-20.7%
Hotels and restaurants	6181	3.3%	13.3%	1.6%	-28.1%
Transport and communications	23820	6.3%	3.6%	7.9%	-11.5%
Financial intermediation	8324	2.5%	13.5%	6.3%	-29.8%
Real estate, renting & business services	21314	12.0%	23.9%	-8.0%	-28.7%
Public administration and defence	12087	-5.4%	9.1%	16.9%	5.4%
Education	8087	7.2%	-0.3%	14.4%	13.5%
Health and social welfare	5038	6.9%	4.8%	12.4%	8.5%
Other services	18192	-0.8%	5.1%	5.5%	-21.9%
Total	152337	3.9%	11.0%	1.8%	-14.4%

Notes: Growth rates are based on CVM data (£2006m).

Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

Table 3.7 shows clearly the recessionary effect on investment across all sectors. After racing to 11% in 2007 (on the back of strong corporate profits), the growth in gross fixed capital formation slowed to 1.8% in 2008 and declined by 14.4% in 2009. The sharp fall in 2009 was driven by declines of between 11% and 29% in sectors that account for a large share of total investment, such as real estate, renting & business services, transport and communications, distribution and manufacturing.

Table 3.8 presents investment per worker and thereby takes account of recent employment trends. The table clearly demonstrates that the level of gross fixed capital formation per employee varies hugely by sector, for example from £89,000 in mining and quarrying to £1,700 in health and social welfare. There are two particularly capital intensive industries which are mining & quarrying and electricity, gas, & water supply.

Table 3.8 Gross fixed capital formation per person employed by sector (£000s)

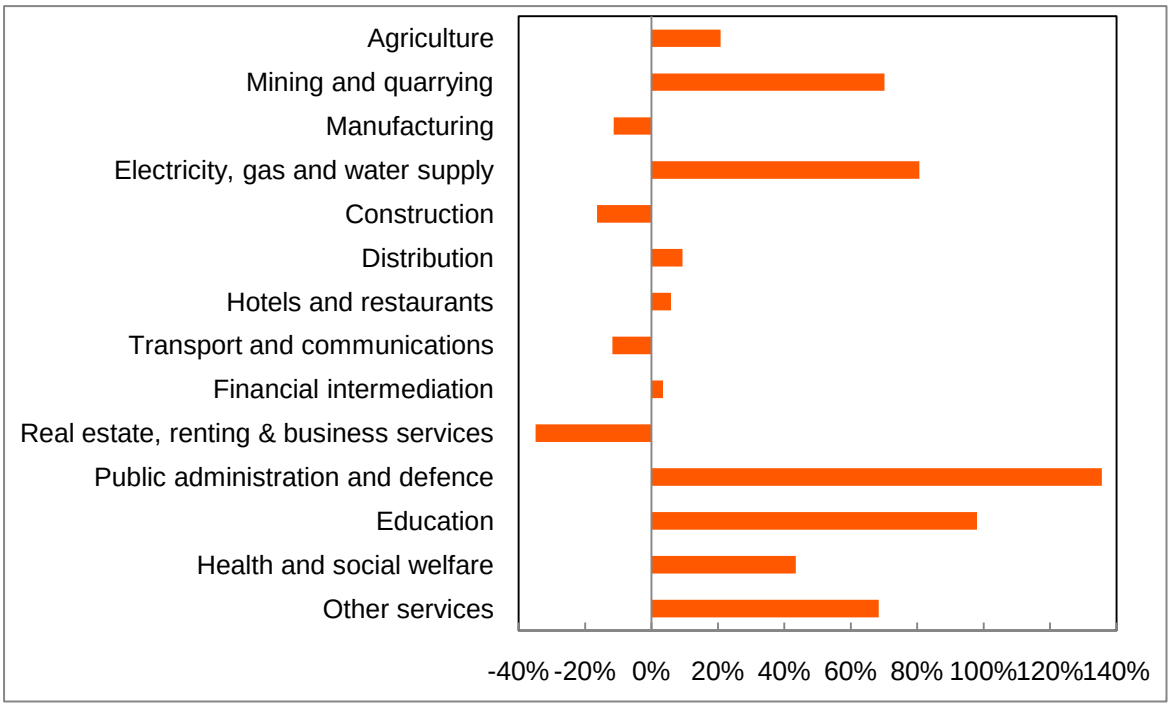
	2000	2007	2008	2009
Agriculture	5.7	7.8	8.2	6.8
Mining and quarrying	52.3	86.7	77.9	89.0
Manufacturing	4.8	5.0	4.9	4.3
Electricity, gas and water supply	21.1	32.4	35.3	38.2
Construction	1.1	1.5	1.3	0.9
Distribution	11.7	17.3	15.6	12.8
Hotels and restaurants	2.5	3.6	3.6	2.6
Transport and communications	17.9	16.2	17.3	15.8
Financial intermediation	5.9	8.3	8.8	6.1
Real estate, renting & business services	9.9	10.2	9.0	6.4
Public administration and defence	3.9	7.4	8.8	9.3
Education	2.0	3.1	3.6	3.9
Health and social welfare	1.2	1.5	1.6	1.7
Other services	11.2	21.5	23.6	18.9

Notes: CVM data (£2006 '000s).
Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010, ONS Labour Market Statistics.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

Figure 3.6 shows the percentage changes in investment per person employed by sector between 2000 and 2009 in real terms.

- Real estate, renting & business services registered a sharp fall (-35%). However, the recession had a major impact these sectors, since the percentage change between 2000 and 2007 was actually positive (3%)
- Investment per person employed in manufacturing declined sharply (-11.4%) as the decline in investment in the sector has been faster than the reduction in employment. The recession had also a major impact in this sector, but the level of investment per person employed has historically been low.
- Transport & communications has maintained high rates of investment per worker compared to other sectors. Gross fixed capital formation per person employed ranged from around £15,000 to £18,000 between 2000 and 2009. However, the level has fallen by around 12% over the period because of the impact of the recession.
- Some of the largest increases in investment per worker over 2000-09 came in the capital-intensive sectors: mining & quarrying, and electricity, gas & water supply.
- Some of the sharpest increases in investments came in the public sector (135% increase overall in public administration; 98% increase overall in education). This tells a broader story of increased investment in public services throughout the decade.
- These were followed by other services (68%), health and social welfare (43%), and agriculture (21%).

Figure 3.6 Gross fixed capital formation per person employed by sector, percentage change 2000-09



Notes: Percentage changes are based on CVM data (£2006 '000s).
Sources: ONS Capital Stocks, Capital Consumption and Non-Financial Balance Sheets 2010, ONS Labour Market Statistics.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=10730&Pos=&ColRank=1&Rank=272.

Increased investment and increases in productivity frequently go hand in hand, but not always; between 2000 and 2009 the strongest increases in investment per worker came in the capital-intensive sectors: mining & quarrying, and electricity, gas & water supply, and public services (as identified in Figure 3.6). The capital intensive sectors experienced sharp falls in productivity over 2002-09 (in real terms). Meanwhile, public services saw strong increases in investment per worker (table 3.8) over 2000-09, but the overall increase in productivity in the public sector between 2002 and 2007 was at the lower end of the spectrum. Indeed, productivity in the public sector fell in 2008 and 2009. This observed effect may be related to the difficulties of measuring output in these sectors, but also coincides with, for example, the rebuilding and refurbishment of schools and colleges in the education sector. While the direct impact of this on productivity is hard to measure, it almost certainly improves the learning experience of pupils. The same can be said for investment in health facilities and the patient experience. Thus, the indirect impact on productivity, and society more generally, by improving the health of the workforce and raising educational attainment can be just as important.

3.4.2 Innovation

Innovation as a driver of productivity is measured here by business enterprise R&D expenditure as a percentage of GDP (see Table 3.9). Compared to other countries listed, the US devotes a relatively high share of GDP to business R&D expenditure: the share is typically in the range of 1.8-2%. In recent years, only Japan and Finland have spent higher shares of GDP on business R&D. Germany typically spends around 1.8% of GDP on R&D. Germany has seen sustained increases in the share of business R&D expenditure in GDP

since 1996. In France around 1.3% of GDP is spent on R&D. This represents a modest decline from the 1.5% spent in the early 1990s. Meanwhile, the UK spent around 1.2% of GDP on R&D in 2000; it then fell to close to 1% in 2004, but since then it has increased gradually, reaching an estimated 1.2% of GDP in 2008.

Table 3.9 Business enterprise R&D expenditure as % of GDP in UK and comparator countries

			%			
	2000	**2004**	**2005**	**2006**	**2007**	**2008**
Austria	-	1.53	1.71	1.74	1.79	1.88
Czech Republic	0.73	0.78	0.89	1.01	0.95	0.91
Denmark	1.5	1.69	1.68	1.66	1.78	1.91
Finland	2.37	2.42	2.46	2.48	2.51	2.77
France	1.34	1.36	1.3	1.32	1.29	1.27
Germany	1.73	1.74	1.72	1.77	1.77	1.84
Greece	0.15	0.17	0.18	0.17	0.16	-
Hungary	0.35	0.36	0.41	0.48	0.49	0.53
Iceland	1.5	-	1.43	1.59	1.47	1.45
Ireland	0.8	0.81	0.82	0.83	0.84	0.93
Italy	0.52	0.52	0.55	0.55	0.61	0.6
Japan	2.16	2.38	2.54	2.63	2.68	-
Luxembourg	1.53	1.43	1.35	1.42	1.32	1.32
Netherlands	1.07	1.03	1.01	1.01	0.97	0.89
Norway	-	0.87	0.82	0.82	0.88	0.87
Poland	0.23	0.16	0.18	0.18	0.17	0.19
Portugal	0.21	0.28	0.31	0.47	0.62	0.76
Slovak Republic	0.43	0.25	0.25	0.21	0.18	0.2
Korea	1.7	2.06	2.15	2.32	2.45	-
Spain	0.49	0.58	0.6	0.67	0.71	0.74
Turkey	0.16	0.13	0.2	0.21	0.3	-
UK	1.18	1.05	1.06	1.08	1.15	1.21
US	2.01	1.76	1.79	1.85	1.91	2

Notes: Except for Czech Republic, Finland, Iceland and Slovak Republic, all figures for 2008 are provisional or estimates. Figures for France and Greece in 2007 are provisional or estimates. Figures for South Korea and Denmark in 2007 represent series breaks.

Sources: Eurostat.

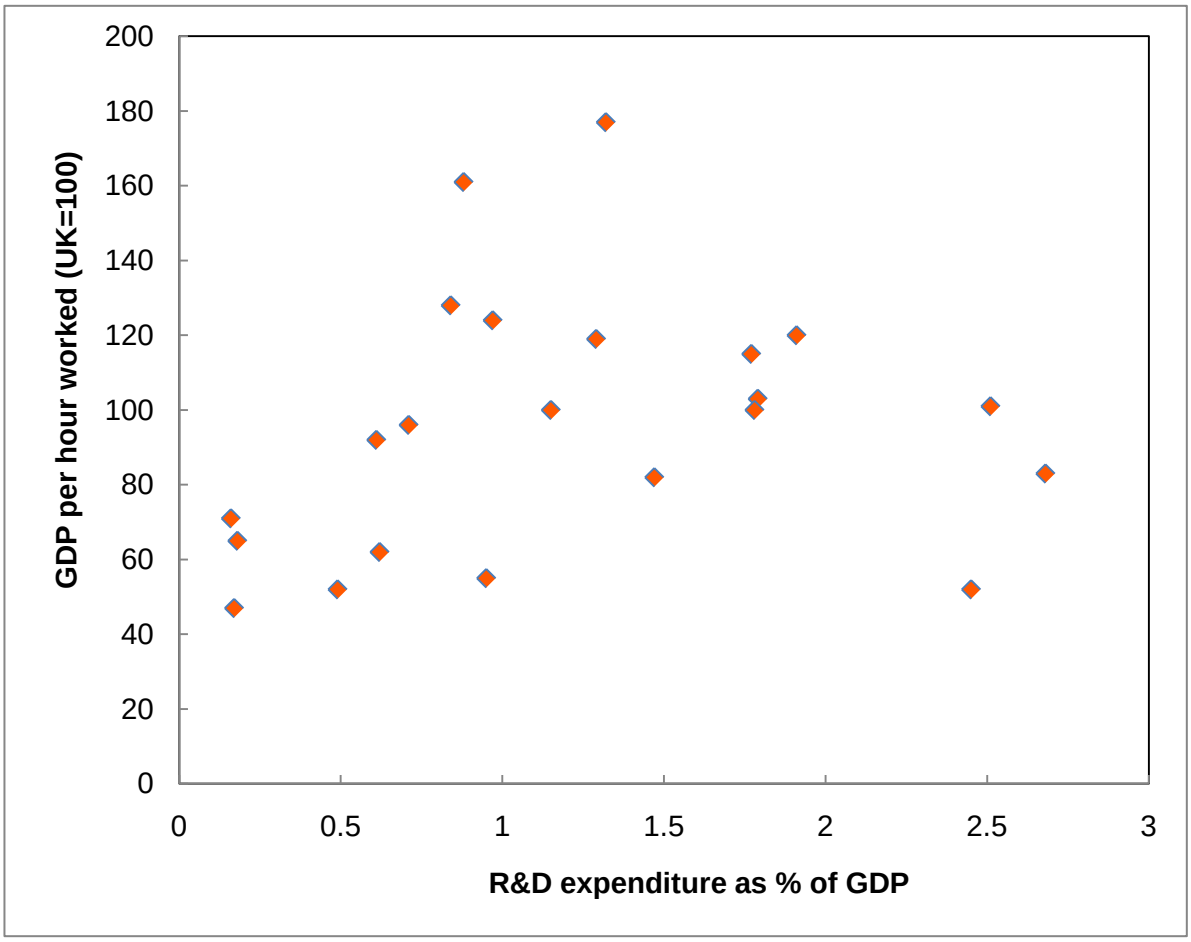
Statlink:
http://epp.eurostat.ec.europa.eu/portal/page/portal/science_technology_innovation/data/database.

Datalink: https://almanac.ukces.org.uk/productivity/B3/B3.1_Business_EnterpriseRandD.xls.

As noted above the US, Germany and France typically spend more on R&D as a share of GDP than the UK and enjoy higher levels of productivity than the UK. However, there are countries that spend a larger share of GDP on R&D and have lower productivity, such as Japan and Korea (Figure 3.7). By contrast, there are one or two countries, such as Ireland and the Netherlands, which spend much less on R&D as a percentage of GDP but enjoy higher levels of productivity. Italy spends roughly half of what the UK spends (as a share of GDP) but has a higher level of GDP per worker, while GDP per hour worked is only just below the UK level.

Thus, while *a priori* we might expect that the UK's comparatively lower levels of productivity are influenced in part by the relatively lower level of spending on R&D, the evidence would also suggest that raising R&D spend alone is not enough. Care needs to be taken in how R&D funding is spent, who undertakes it, and who benefits from it.

Figure 3.7 GDP per hour worked and R&D expenditure as percentage of GDP – international comparisons, 2007



Sources: Eurostat for R&D data; OECD for GDP per hour worked data.
Datalink: https://almanac.ukces.org.uk/productivity/B1/B1.1_International_Productivity_Comparison.xls; https://almanac.ukces.org.uk/productivity/B2/B2.3_Capital_Formation_per_Employee_by_Sector.xls.

3.4.3 Enterprise and Competition

The more acute are competitive pressures, the higher, typically, is productivity growth. The process of dynamic competition is known as 'Enterprise', which includes the creation of new business opportunities within existing firms or the setting up of new firms. Greater entrepreneurial activity can increase productivity. VAT registrations, required for all businesses which turn over £70,000 or more per year, and PAYE registrations are used here as a rather imperfect measure of enterprise.

Table 3.10 Stock of active VAT/PAYE enterprises by sector

Levels and % share of total stock

	2004	2005	2006	2007	2008	2009	Change in share 2004-09 (pp)
Mining & quarrying	1,435	1,355	1,385	1,400	1,420	1,600	
	0.1	0.1	0.1	0.1	0.1	0.1	0.0
Manufacturing	176,520	171,770	168,275	166,970	160,715	160,840	
	8.2	7.9	7.6	7.3	6.9	6.9	-1.3
Energy & water	470	520	565	630	6,640	7,320	
	0.0	0.0	0.0	0.0	0.3	0.3	0.3
Construction	246,830	254,120	262,525	275,140	337,885	336,095	
	11.4	11.6	11.9	12.1	14.5	14.4	2.9
Distribution	442,430	437,870	431,550	430,640	418,075	416,305	
	20.5	20.1	19.6	18.9	18.0	17.8	-2.7
Hotels & restaurants	166,050	166,460	166,140	168,880	165,750	163,430	
	7.7	7.6	7.5	7.4	7.1	7.0	-0.7
Transport & Comms	93,905	94,145	93,880	94,625	97,285	97,375	
	4.4	4.3	4.3	4.1	4.2	4.2	-0.2
Financial services	27,260	27,085	26,600	26,920	29,930	34,600	
	1.3	1.2	1.2	1.2	1.3	1.5	0.2
Business services	691,085	719,310	745,265	799,195	779,650	792,745	
	32.0	33.0	33.8	35.0	33.5	33.9	1.8
Education	28,425	29,790	30,120	30,050	32,440	34,395	
	1.3	1.4	1.4	1.3	1.4	1.5	0.2
Health	76,820	78,420	80,340	83,575	87,735	90,275	
	3.6	3.6	3.6	3.7	3.8	3.9	0.3
Other services	207,325	201,910	200,645	202,190	208,245	206,920	
	9.6	9.3	9.1	8.9	9.0	8.8	-0.8
Total	2,158,555	2,182,755	2,207,290	2,280,215	2,325,770	2,341,900	

Notes: ONS Business Demography figures includes PAYE registered enterprises. The figures therefore include enterprises that are not VAT-registered and so provide a more comprehensive picture of business start-up activity.
Sources: ONS Business Demography 2009.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15186.
Datalink: https://almanac.ukces.org.uk/productivity/B4/B4.2_VAT_Registrations_by_Sector.xls.

Looking first at the stock of active VAT/PAYE-registered enterprises in Table 3.10, business services (which includes real estate, renting and business activities) has the highest number of VAT/PAYE-registered firms in the UK, accounting for 34% of the UK total. Construction accounts for roughly 14%, while distribution accounts for almost 18%.

Turning to flows, Table 3.11 provides an indication of the rate of new business creation across the broad sectors. The table shows the number of firm births (defined as firms that register for VAT and/or PAYE for the first time in that year) as a percentage of the stock of active enterprises operating in the sector in the same year.

Table 3.11 PAYE/VAT registrations as a percentage of active enterprises by sector

	2004	2005	2006	% 2007	2008	2009
Mining & quarrying	12.2	11.4	9.0	10.0	12.0	10.6
Manufacturing	8.5	7.9	7.3	7.8	7.5	7.0
Energy & water	18.1	23.1	15.9	21.4	13.8	15.0
Construction	13.5	13.2	12.2	13.0	11.6	8.7
Distribution	10.3	10.2	9.2	9.3	9.1	8.9
Hotels & restaurants	16.7	16.4	14.9	14.8	12.9	12.0
Transport & Comms	13.0	12.3	11.0	11.0	10.5	9.1
Financial services	11.3	10.5	10.1	10.8	12.0	9.5
Business services	15.9	15.5	14.2	15.6	14.7	12.2
Education	14.7	12.3	10.2	9.2	9.3	10.1
Health	8.5	7.5	7.3	8.0	7.9	7.9
Other services	10.5	9.9	9.2	9.3	8.3	8.6
Total	13.0	12.6	11.6	12.3	11.5	10.1

Sources: ONS Business Demography 2009.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=15186.
Datalink: https://almanac.ukces.org.uk/productivity/B4/B4.2_VAT_Registrations_by_Sector.xls.

The table shows that both the construction saw a marked drop in the rate of new business creation in 2009. The rate held up at around 12-13% over 2004-08, but fell to 8.7% in 2009, when the recession in construction was at its worst (compared to 13% in 2007, before the recession started). In the distribution sector, new business creation was just over 10% of active enterprises in 2004 and 2005; the rate fell to 9.2% in 2006 and was largely unchanged over 2007-09. In manufacturing, the rate of new business creation fell between 2004 and 2006, before rising to 7.8% in 2007. The rate of new business creation in manufacturing continued to fall during the recession, reaching 7% in 2009.

Electricity, gas & water has a high rate of VAT registrations; however, these are businesses with high capital barriers to entry and thus a small stock of active enterprises, and so a small number of new firms represents a large proportion. Even so, the rate of VAT/PAYE registrations fell sharply over the recession, as the fall in activity hit demand for energy and water.

In hotels & restaurants, the rate of VAT/PAYE registrations fell throughout the 2004-09 period, but there was a marked drop during the recession, from 14.8% in 2007 to 12% in 2009. In financial services the rate typically averaged 10-11% before the recession, but picked up to 12% in 2008, before falling back to 9.5% in 2009. Meanwhile, the rate of new firm creation slowed markedly in the business services sector, from 15.6% in 2007 to 12.2% in 2009.

Lastly, in the education sector the rate of VAT/PAYE registrations fell over 2004-07, but increased during the recession, while in the health sector, the rate was largely unchanged over 2007-09, at around 8%, following a gradual decline between 2004 and 2007.

Table 3.11 indicates that the highest rates of new entry into a sector are typically found in business services; hotels & restaurants; and construction. The relatively high rate in

business services is matched by high (and significantly increased) levels of productivity in financial & business services Taken together, these two factors may support the thesis that an increased or high level of entry of new firms into a market or sector increases the competitive pressure on firms and pushes them to increase productivity. At the same time, however, the rate of entry in manufacturing is generally low and falling, but productivity in manufacturing is ahead of the UK average and increased by almost 30% over 2002-09. Furthermore, construction enjoys a relatively modest to high rate of new entry, but productivity in the sector tends to be below the UK average and fell by more than 7% between 2002 and 2009, when the UK average increased by 6.5%. This suggests that industry structure (between firms, with customer/supplier industries, expected returns, capital investment, and barriers to entry) need to be considered as well as the rate of entry.

3.4. 4 Profitability

In 2009, the net rate of return for firms in the UK manufacturing sector was just over 7% (Table 3.12), whereas services firms received a rate of return of over 14%. The other services sector yields a higher rate of return on average than the manufacturing sector. The gap widened substantially in 1998, and has remained around 5 to 7 pp since, but it has been as high as 9 pp. Over this period, some parts of manufacturing have faced strong competition from low-cost countries and high and volatile input costs, which has undermined profitability (and prompted restructuring). Both manufacturing and services saw profitability dip in 2009, during the recession, but the decline was sharper in manufacturing.

Table 3.12 Profitability of private companies in the UK

	Net rate of return (%)				
	2000	**2006**	**2007**	**2008**	**2009**
Manufacturing	10.6	10.6	10.9	9.2	7.3
Services	17.1	15.9	15.7	15.4	14.3
	Difference (pp)				
Gap	6.5	5.3	4.8	6.2	7

Notes: Rates are profitability of private non-financial corporations in the UK.
Sources: ONS Profitability of UK Companies.
Statlink: www.statistics.gov.uk/pdfdir/prof0310.pdf.

4 Employment

Employment Chapter Summary

A successful economy has a high proportion of its working age population in work. The employment outcomes that we observe are the result of the labour market process that includes both demand factors and supply factors. When demand and supply are not well matched, different types of mismatch occur, such as skills gaps or shortages, underemployment, unemployment or inactivity.

Employer demand for workers is a derived demand: it itself is driven by demand for goods and services and by business strategies. A number of external factors and long-term drivers feed into demand for goods and services. These include demographic change, health, and engagement in the labour market and barriers to participation.

The UK labour market has become polarised in sectoral and occupational structure, a trend accelerated by the recession. As a result, wages and employment have themselves become polarised, affecting particular sections of society in different ways. The UK's employment rate is considerably higher than both the OECD and EU average. Much, but not all, of the disparity in employment rates amongst EU nations is reflected in differences in unemployment. The disparity in employment rates between the UK and nations outside the EU also reflect greater differences in activity rates.

England and Scotland have a higher employment rate than the UK average, whereas Wales and Northern Ireland's rates are below the UK average. The pattern of employment in London makes it an outlier: the lowest employment and activity rates in England and the highest unemployment rate in the UK, coupled with the highest productivity. Largely, commuting can explain this, as it means a far higher proportion of employees work in London than its population share.

Public administration, education & health is the largest of the broad sectors (in terms of employment), followed by distribution, hotels & restaurants and then banking & business services. The service sector comprises more than three-quarters of workers. Manufacturing comprises just over a tenth and construction just under a tenth. A small proportion of workers are employed in primary industries, electricity or water. Manufacturing has seen the steepest decline in the number of workers in recent years.

The fastest-growing group of workers between 2007 and 2009 was those aged 65 or over, followed by those aged between 60 and 65. These changes reflect an aging population, coupled with increasing life expectancies. These trends have led to rising activity rates and declining unemployment rates among older sections of the population. The age group in the working age population with the lowest activity and employment rates is those between 16 and 24. This is also the group with the highest unemployment rate. Conversely, the age group with the highest activity and employment rate is those aged between 35 and 49.

While a higher proportion of males are employed compared to females in the UK (women have lower activity rates in the working age population), between 2007 and 2009 the number of women workers grew faster than the number of men. In most sectors men outnumber women substantially. Those sectors where they do not include Distribution, hotels & restaurants, where many jobs are relatively low-skilled or available on a part-time/flexible basis, which makes it easier for mothers to combine working with parenting; and Public admin, education and health, where working mothers often feel they receive better support, compared to other sectors. While high salaries are available in the public sector, equally high or higher salaries are available in other sectors, and in some cases with fewer qualifications required. This may put off men from working in public admin, education and health, especially if they have a family to support and believe they can earn more in other sectors, and so help explain the high proportion of female workers in the sector.

In 2009, 86% of workers were employees and 13% self-employed; 74% of workers were full-time with 26% part-time, and 95% of workers were permanent with 5% of workers held temporary jobs.

The White ethnic group has the highest activity and employment rates. The unemployment rate for the White ethnic group is nearly 5 percentage points lower than that of the next lowest ethnic group. The Black ethnic group has the highest unemployment rate. Much of the difference in activity rates between ethnic groups reflects important gender differences. For instance, the gap between the activity rates of White and Asian men is around 8 percentage points, while the gap between White and Asian women is around 22 percentage points.

The region with the most workers in the service sector is London, 87% of whose workers are employed in services. The regions with the fewest employees in the service sector are Northern Ireland and the East Midlands. Both the East Midlands and the West Midlands have the highest proportion of workers in manufacturing. The regions with the highest share of workers in public administration, education & health are Wales and Northern Ireland. Scotland, Northern Ireland and Wales have the most workers working in the primary sectors of agriculture, mining & quarrying, and energy & water.

The sectors with the greatest proportion of workers with higher education qualifications were public administration, health & education, banking, and financial & business services. The sectors with the lowest proportion of workers with higher education qualifications were distribution and hotels & restaurants. The sector with the highest proportion of workers with no qualifications was agriculture.

The average UK hourly remuneration in 2009 was £14.40. Female workers were, on average, paid £12.60 per hour. The ratio of the average female worker's hourly wage to that of male workers was little changed from 2007. By occupation, Managers (£18.45) received the highest hourly wages while other (not classified) workers (£6.34) received the lowest wage. By sector, the highest hourly wage was paid in the financial services sector (£22.05).

4.1 Introduction

4.1.1 Employment outcomes: determinants and interpretation

A successful economy has a high proportion of its working age population in work. The effectiveness of those in work, the quality of the jobs, and the incomes that are earned from work are reflected in some employment measures in this chapter, such as the breakdown of employment by occupation and qualification level.

The employment outcomes that we observe are the result of the labour market process that includes both demand and supply factors.

When demand and supply are not well matched, different types of mismatch occur: from the perspective of the employer or the potential worker (see appendix 5). This chapter primarily concentrates on mismatches from a worker perspective.

Over the long term, employer demand for workers is shaped by demand for goods and services and by the business strategies adopted by employers in meeting that demand. The

demand for goods and services is influenced by a number of external drivers including technological change and globalisation and specialisation.

In the short term the state of the economic cycle influences both the employers' offer and the extent of participation in the labour force.

Long-term drivers of the labour force include:

- Population demographics
- Health
- Engagement in the labour market

The degree of access to and engagement in employment reflects differences of demography, culture and socio-economic advantage. The extent of some of these differences is explored later in the chapter.

It is difficult to quantify sustainability and progression of employment. Instead we focus on measuring the quality of jobs and on how the interpretation of any measures of quality used might provide insights into issues of sustainability and progression.

Recent trends in the sectoral and occupational structure of the UK economy have further polarised labour market outcomes, such as wages and employment. This affects particular socio-economic groups in different ways. The types of indicators that might be used to measure the quality of work include wages and job satisfaction. Although not a direct measure, the 'nature' of employment is a proxy for quality and can be measured, for example, in terms of the sectoral, occupational structure of employment.

Figure 4.1 shows how employment, unemployment and economic activity fit together in this chapter.

Figure 4.1: Economic activity, inactivity and their components, 2009

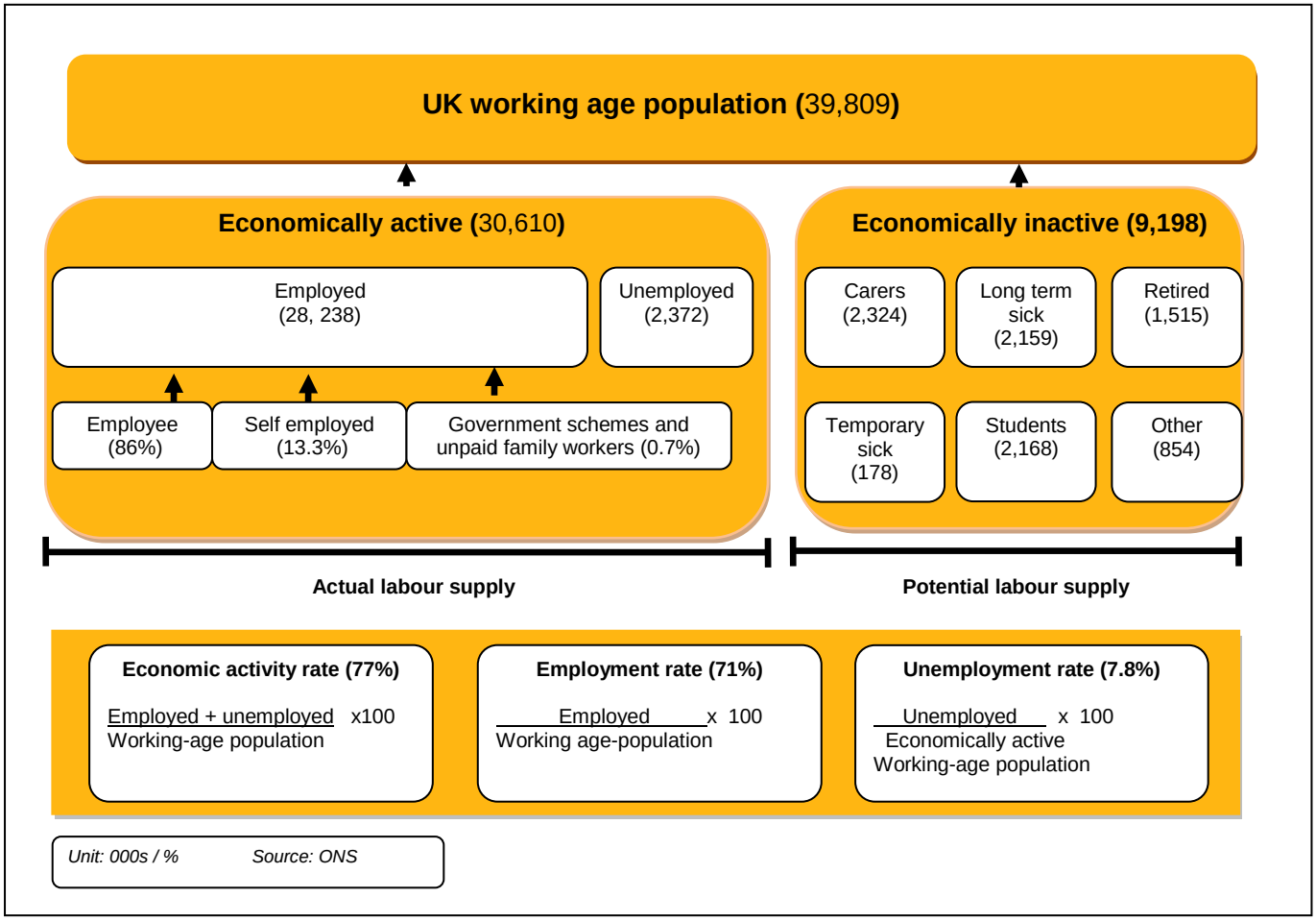


Figure 4.1 shows the economically active and the inactive represent the actual and potential labour supply in the economy. The economically inactive working-age population include students, the long and short-term sick, the retired, and those who look after family members. The employed and unemployed make up the total of economically active working-age population. In particular, the employed include employees, those who are self-employed, and those who are on government training schemes.

Figure 4.1 also shows how the economic activity rate, employment rate and unemployment rate are calculated. The denominator used for the first two is the number of working-age population, whereas the unemployment rate represents the proportion of economically active working age population who are unemployed.

For illustrative purposes, some LFS headline indicators for 2009 are inserted into the figure, giving the economic activity rate of around 77%, employment rate of around 71% and unemployment rate of around 8%.

The remainder of the chapter presents UK and international evidence on employment. The choice of indicators presented relates to the employment outcomes, drivers, and issues noted in this section. As with other chapters, further data and more detailed indicators can be accessed from our project website at https://almanac.ukces.org.uk.

4.2 International evidence on employment

Table 4.1 sets out the employment rate in a variety of countries as well as for the EU as a whole.

The UK's employment rate is considerably higher than both the OECD and EU average. In particular, the UK rate is higher than those of the other large EU countries of France, Italy and Spain but the greater impact of the recession on jobs in the UK brought the UK rate down to match that of Germany in 2009Q1 and to fall below that of Germany in 2010Q1. Compared to the *annual* OECD average, the UK employment rate was higher in 2008 and 2009 (the annual figures for the UK were 72.7 and 70.9). The OECD figure for 2010 is a projection. More recent data suggest that since 2010Q1, the UK employment rate has picked up slightly, by around 1 percentage point, suggesting that the recent decline has been halted.

Table 4.1 Employment Rate by Country

	2008 Q1	2009 Q1	2010 Q1
	%	*%*	*%*
Austria	71.0	70.8	70.6
Belgium	62.6	61.7	61.9
Bulgaria	62.6	62.6	58.8
Cyprus	70.2	69.5	68.8
Czech Republic	66.1	65.6	64.1
Denmark	77.0	76.2	73.0
Estonia	69.5	65.3	58.9
Finland	69.5	68.5	66.5
France	64.6	64.1	63.7
Germany	70.0	70.4	70.8
Greece	61.3	61.0	60.1
Hungary	56.1	55.1	54.5
Ireland	68.5	62.8	59.7
Italy	58.3	57.4	56.6
Latvia	69.6	64.3	57.7
Lithuania	63.9	61.0	56.8
Luxembourg	62.8	64.5	64.8
Malta	54.7	54.9	55.3
Netherlands	76.4	77.4	75.8
Poland	58.0	58.9	58.2
Portugal	68.1	67.0	65.8
Romania	57.7	57.4	57.0
Slovak Republic	61.3	61.0	58.0
Slovenia	67.1	66.7	66.3
Spain	65.1	60.4	58.3
Sweden	73.4	71.9	71.0
United Kingdom	71.6	70.4	69.0
Total EU	65.5	64.6	63.7
Eurozone	65.7	64.7	64.0
Canada	72.6	70.7	70.0
Japan	70.0	69.8	69.6
United States	71.6	68.7	66.7
OECD	*68.0**	*65.9**	*66.0**

Notes: All employment rates in this table are published by EUROSTAT and are based on the population aged 15 to 64. *OECD figures are annual and come from the OECD *Economic Outlook 87* database (Published in May 2010).

Sources: ONS, Eurostat, OECD.

Statlink: http://www.statistics.gov.uk/downloads/theme_labour/LMS_FR_HS/WebTable19.xls.

Datalink: https://almanac.ukces.org.uk/employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls.

Five EU nations had higher rates of employment in 2010Q1 than the UK. The rates in Denmark and the Netherlands have consistently been some 4 to 7 percentage points higher than that of the UK between 2008Q1 and 2010Q1, and by 2010Q1 the rates in Austria, Germany and Sweden had also reached around 2 percentage points higher than that of the UK. Reasons for this divergence are likely to include differences in the relative sizes of sectors within each economy and the impact of the different components of spending (e.g. trade, investment, and household spending) on sector performance; and differences in social welfare policies which help people to enter or return to employment. Outside the EU, the UK had a higher employment rate than Japan in all three years but a lower employment rate than Canada. The greater impact of the recession on jobs in the US has had the effect that the UK rate exceeded the US rate in 2009 and 2010. Much, but not all, of the disparity in employment rates amongst EU nations is reflected in differences in unemployment. However, the disparity in unemployment rates between the UK and nations outside the EU (see Table 4.2) also reflects differences in activity rates (most obviously in the case of Japan, which has a lower employment rate and a lower unemployment rate).

Table 4.2 sets out the unemployment rate in a variety of countries as well as for the EU as a whole.

- The UK's unemployment rate was more than one percentage point below the EU unemployment rate in all three years. The UK rate was lower than those of the other large EU countries of France, Italy and Spain. Consistent with the outturn for the employment rate, the unemployment rate in the UK exceeded that of Germany in 2010.
- In the EU, the unemployment rate was substantially lower in all three years than that of the UK in Austria, Cyprus, Denmark, Luxembourg and the Netherlands, all of whom also had unemployment rates as much as 3 percentage points below the EU average. The low unemployment rates in Austria, Denmark and Netherlands are reflected in their high employment rates (see Table 4.1).
- Outside the EU, the UK had a lower unemployment rate than Canada but a higher rate than Japan for all years. The impact of the recession pushed the US unemployment rate above the UK unemployment rate since 2009. Overall, the unemployment rate in the UK was lower than the OECD average for all years.

Table 4.2 Unemployment Rate by Country

	2008 Q1	2009 Q1	2010 Q1
	%	%	%
Austria	4.0	4.4	4.4
Belgium	6.9	7.6	8.4
Bulgaria	6.0	5.8	9.3
Cyprus	3.7	4.4	6.5
Czech Republic	4.5	5.5	7.8
Denmark	3.2	4.8	7.1
Estonia	4.0	11.0	19.0
Finland	6.3	7.4	8.9
France	7.6	8.9	9.9
Germany	7.6	7.3	7.3
Greece	7.8	8.8	11.0
Hungary	7.6	9.2	11.2
Ireland	4.9	10.2	12.8
Italy	6.6	7.4	8.5
Latvia	6.1	13.5	20.0
Lithuania	4.3	11.2	17.4
Luxembourg	4.4	5.4	5.2
Malta	5.9	6.5	6.9
Netherlands	2.8	2.9	4.2
Poland	7.5	7.5	9.7
Portugal	7.5	8.7	10.5
Romania	5.7	6.2	7.4
Slovak Republic	10.2	10.0	14.6
Slovenia	4.7	4.9	6.7
Spain	9.2	16.6	19.2
Sweden	5.9	7.5	8.8
United Kingdom	5.1	7.0	7.9
Total EU	6.7	8.2	9.6
Eurozone	7.2	8.8	9.9
Canada	5.9	7.8	8.2
Japan	3.9	4.5	4.9
United States	5.0	8.2	9.7
OECD	5.7	7.6	8.7

Notes: The unemployment rate for the US and UK are based on population who are 16 or over,15 or over for Canada and Japan, 16-74 for data published by Eurostat.

Sources: ONS, Eurostat, OECD.

Statlink: http://www.statistics.gov.uk/downloads/theme_labour/LMS_FR_HS/WebTable19.xls.

Datalink: https://almanac.ukces.org.uk/employment/C1/C1.4_Unemployment_Rate_by_Country_Nation_Region_Gender_Ethnicity.xls.

4.3 UK evidence on employment

Following the structure set up in Figure 4.1, we first consider the UK labour market as a whole and examine the evidence on the economically active (activity rates), employment rates, and unemployment rates. These can be broken down by geography, and demographic variables such as gender, age, and ethnicity. We then shift focus to those in work and study the prevailing structure of employment – for example by region, sector, sector skills council, occupation and employment status. The demographics of employment (i.e. by age, gender, and ethnicity) highlight various inequalities and the different patterns of employment for different groups. Finally, we explore measures of job quality and effectiveness.

4.3.1 Economic activity

Just over 20% of the population aged 16-64 in the UK are currently economically inactive. The overall inactivity rate has remained broadly constant over the last ten years. However, this includes the effect of a growing proportion of young people in full-time higher education; excluding students, the inactivity rate declined in the decade prior to the recession.

Tables 4.3 to 4.6 present economic activity rates, employment rates, and unemployment rates by region, age, gender, and ethnicity.

Table 4.3 sets out the activity rate, employment rate and unemployment rate for those aged between 16 and 64 in the UK and each of the UK nations, as well for the English Government Office Regions for 2007, 2008 and 2009. It illustrates that among the UK nations, Scotland and England have higher activity and employment rates than the UK average, whereas Wales and Northern Ireland have lower activity and employment rates. Northern Ireland also has lower activity and employment rates than each of the English regions taken separately. Wales had a higher employment rate than London in 2007 but otherwise also ranks lower than the English regions on both activity and employment rates.

Among the English regions, London, the North East and the North West have the lowest economic activity and employment rates. In contrast, the South East, South West and East of England have the highest activity and employment rates in the UK. The East Midlands also has high rates.

Since unemployment is the difference between those seeking work and those obtaining work, unemployment rates reflect both differences in activity rates and employment rates. Northern Ireland has the lowest unemployment rate of the four nations, followed by Scotland and then England, but Northern Ireland's low activity rate offsets its low employment rate.

Among the English regions, London and the North East have the highest unemployment rates, and here this is associated with low employment rates. In contrast, the South West, South East and East of England have the lowest unemployment rates of the English regions, reflecting high employment rates alongside high activity rates.

Table 4.3 Activity Rate, Employment Rate and Unemployment Rate by Region

	Activity Rate (%)			Employment Rate (%)			Unemployment Rate (%)		
	2007	2008	2009	2007	2008	2009	2007	2008	2009
UK	76.4	76.5	76.5	72.5	72.2	70.7	5.2	5.8	7.8
England	76.6	76.8	76.9	72.6	72.3	70.9	5.3	5.9	7.8
London	74	74.7	75.2	68.9	69.5	68.3	6.8	7	9.1
South East	80.0	80.1	79.8	76.6	76.4	75	4.3	4.5	6
East of England	78.7	78.9	79.4	75.2	75	74.3	4.4	5	6.5
South West	79.1	79.3	79.2	75.9	76	74.2	4.0	4.2	6.3
West Midlands	75.1	75.2	75.4	70.6	69.9	68.2	6.0	7.1	9.6
East Midlands	77.6	78.3	78	73.7	73.6	72.2	5.1	5.9	7.4
Yorkshire & Humber	75.5	75.8	75.4	71.3	70.9	68.8	5.5	6.4	8.7
North West	74.7	74.1	74.6	70.4	69.3	68.1	5.7	6.4	8.7
North East	74.1	74.2	73.4	69.5	68.5	66.2	6.2	7.6	9.7
Wales	73.2	73.2	72.7	69.0	68.5	66.6	5.7	6.5	8.4
Scotland	77.5	77.3	77.4	73.8	73.5	71.9	4.8	5	7.1
Northern Ireland	71.4	70.7	69.9	68.5	67.9	65.1	4.1	4	6.8

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/employment/C1/C1.1_Activity_Rate_by_Nation_Region_Age_Gender_and_Ethnicity.xls.

Turning to consider the likelihood of being economically active, in work, or unemployed, by various demographic groupings, Table 4.4 looks at these outcomes by various age groups in the UK population. As would be expected, the age group with the lowest activity and employment rates are among those over 64 years of age (notable, however, is the increase over the years 2007 to 2009 in both activity and employment in this group).

The age group in the working-age population with the lowest activity and employment rates are those between 16 and 24. This is also the group with the highest unemployment rate, more than double the rate for the UK population aged between 16 and 64. Thus, although the low employment rate is partly explained by the relatively high number of young people who are economically inactive (due to participation in education), the high level of unemployment among young people is also an important factor. For those people in this age group who are students, their engagement in the labour market will normally increase in their post-education years.

The age group with the highest activity and employment rates is those aged between 35 and 49. This group has the second-lowest unemployment rate among those aged between 16 and 64. The lowest unemployment rate is among those aged over 50 but under 64. However, this group also has considerably lower activity and employment rates.

Finally, individuals aged between 25 and 34 have an activity rate almost as high as those aged between 35 and 49 but an employment rate which is nearly 3 percentage points lower. This is because this group has the second-highest unemployment rate of the age groups. Two possible explanations for this are, firstly, that over 2007-09 employers focused on retaining experience in response to the recession and thus preferred to retain or hire workers in the older age category when faced with the choice (this would also come through as rising employment and falling unemployment rates among older workers within the 25-34 age

category); or, secondly, that workers in this age group were more active in looking for and changing jobs. It's likely that a smaller percentage of workers in this group would have families or own property (given the difficulty first-time buyers had in buying a property before and during the recession, and many in this age group would be first-time buyers). As result they may be more inclined to shop around in the labour market to find better paying or more secure jobs. The higher unemployment rate may be a consequence of this and reflect employers' preference for older, more experienced workers and/or that workers in the 25-34 age group were more selective when looking for jobs (and thus more inclined to turn down job offers).

Table 4.4 Activity Rate, Employment Rate and Unemployment Rate by Age

	Activity Rate (%)			Employment Rate (%)			Unemployment Rate (%)		
	2007	**2008**	**2009**	**2007**	**2008**	**2009**	**2007**	**2008**	**2009**
16-24	66.6	66.1	64.9	57.5	56.3	53.0	13.7	15.0	18.7
25-34	84.0	84.4	84.3	80.1	79.8	78.0	4.7	5.4	7.7
35-49	85.0	85.3	85.7	82.2	82.1	81.1	3.4	3.8	5.4
50-64	66.9	67.2	67.6	65.2	65.3	64.8	3.0	3.2	4.5
65+	7.0	7.4	7.8	6.9	7.3	7.6	1.9	1.9	2.6

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls

Table 4.5 sets out activity, employment and unemployment rates for 2007, 2008 and 2009 by gender and by age.

In all age groups in the population, women had lower activity rates than men. The gap is particularly wide between the ages of 25 and 50 where it was more than 10 percentage points. For people between the ages of 16 and 24 the gap is narrower (of the order of 6 percentage points). There is an even larger gap of around 15 percentage points for people between the ages of 50 and 64, but this reflects the impact of retirement on women aged between 60 and 64. This is also the reason why women had a much lower activity rates than men in the population who are 60 or above.

Men also have higher employment rates than women although the gaps between men and women are in general slightly narrower than for activity rates. This reflects the fact that women experience lower rates of unemployment than men in nearly all age groups.

The gap between unemployment rates for men and women is widest for people between the ages of 16 and 24. Although both men and women have unemployment rates over 10%, the rate for men is more than 3 percentage points higher than that for women. The gap is considerably narrower for all other age groups where it is at most just over 1 percentage points.

Table 4.5 Activity Rate, Employment Rate and Unemployment Rate by Gender and Age

		Activity Rate (%)			Employment Rate (%)			Unemployment Rate (%)		
		2007	2008	2009	2007	2008	2009	2007	2008	2009
Male										
	16-24	69.6	69.0	67.4	59.0	57.5	53.0	15.2	16.9	21.8
	25-34	92.5	92.4	92.6	88.1	87.3	85.0	4.7	5.5	8.4
	35-49	91.7	91.9	92.1	88.8	88.5	86.9	3.2	3.7	5.7
	50-64	75.0	75.3	75.4	72.7	72.7	71.4	3.5	3.8	5.6
	65+	10.0	10.4	10.8	9.8	10.3	10.4	2.2	1.9	2.8
Female										
	16-24	63.5	63.0	62.3	56.0	55.2	52.9	12.0	12.7	15.4
	25-34	75.6	76.4	76.0	72.0	72.3	70.8	4.7	5.2	6.8
	35-49	78.5	78.9	79.6	75.7	75.9	75.6	3.6	3.8	5.1
	50-64	59.1	59.4	60.0	58.0	58.2	58.4	2.5	2.5	3.2
	65+	4.7	5.0	5.4	4.7	4.9	5.4	1.4	1.8	2.1

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls.

The final table presenting economic activity for various demographic groups is Table 4.6 which sets out activity rates, employment rates and unemployment rates by ethnicity and gender from 2007 to 2009.

The White ethnic group has the highest activity and employment rates. Activity rates for the White group are 6 percentage points higher than the next highest ethnic group, which is the Black group. Employment rates for the White population are 14 percentage points higher than the Black group.

The wider gap in employment rates than in activity rates between the White and Black ethnic groups is reflected in the fact that unemployment rates for the White ethnic group are nearly 5 percentage points lower than those of the next lowest ethnic group, the Asian ethnic group and 8 percentage points lower than the Black ethnic group. The Black ethnic group has the highest unemployment rates.

Much of the difference in activity rates between ethnic groups reflects important gender differences. The gap between the activity rates of White and Asian men is only around 4 percentage points, while the gap between White and Asian women is around 22 percentage points. White women have much higher activity rates than women of other ethnic groups, the closest being Black women who still have activity rates 6 percentage points lower. While White men have higher activity rates than men of other ethnicities, the gap is much narrower.

Table 4.6 Activity Rate, Employment Rate and Unemployment Rate by Ethnicity and Gender

		Activity Rate (%)			Employment Rate (%)			Unemployment Rate (%)		
		2007	2008	2009	2007	2008	2009	2007	2008	2009
All										
	White	77.5	77.7	77.9	73.9	73.6	72.3	4.6	5.1	7.1
	Asian	63.8	64.6	65.8	57.5	58.1	58.0	9.8	9.9	11.8
	Black	72.6	71.9	71.7	63.4	61.7	58.8	12.6	14.1	18.0
	Mixed/ Other	67.0	67.4	66.9	60.3	60.6	59.5	10.0	10.1	11.0
Male										
	White	83.8	83.7	83.8	79.6	79.0	77.0	5.0	5.6	8.1
	Asian	77.9	80.2	80.3	71.3	72.9	71.2	8.5	9.1	11.3
	Black	78.8	78.9	78.5	67.6	66.4	63.6	14.2	15.6	18.9
	Mixed/ Other	74.7	75.2	73.6	67.8	67.5	65.3	9.3	10.2	11.2
Female										
	White	71.3	71.7	72.1	68.2	68.3	67.7	4.3	4.6	6.0
	Asian	49.1	48.1	49.7	43.2	42.6	43.3	12.1	11.4	12.8
	Black	67.3	66.0	66.0	59.8	57.7	54.7	11.1	12.5	17.0
	Mixed/ Other	59.4	59.8	60.1	52.9	53.9	53.7	10.8	9.9	10.6

Notes: These rates are for people aged between 16 and 64.
Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink: https://almanac.ukces.org.uk/employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls.

The gap in unemployment rates between the White population other ethnic groups is a percentage point higher for women than for men. However, Black women have unemployment rates similar to those of Asian and Mixed/Other women whereas Black men have unemployment rates as much as 6 percentage points higher than the other non-White ethnic groups. This in part explains why the Black ethnic group has a higher unemployment rate than the other non-White ethnic groups.

4.3.2 The structure of employment

What does the UK labour market look like? Where and what kinds of jobs are available? Which areas of employment are experiencing growth? The answer to these kinds of questions can be answered by considering the structure of employment. The structure of employment can be ascertained by looking at employment levels, shares, change, and growth by geography, sector, firm size, occupation, and employment status (e.g. part-time, self-employment, permanent etc.). Looking at the structure of employment by occupation and sector can also give us an insight into job quality, and the progression and sustainability of work.

Looking first at the geography of UK employment, Table 4.7 sets out the growth in the number of workers working in the English regions and the UK nations for the years 2007 to 2009. It also gives the percentage of workers working in the UK who worked in each of those nations and regions in 2008.

Around 84% of workers work in England, which is slightly higher than the English share of the working-age population. Of the devolved nations Scotland has the greatest share of employment, having 8.7% of UK workers, slightly ahead of its 8.5% share of the population.

Among the English regions, London has the highest share of UK workers (14.2%). Its share is greater than its share of the population (12.4%) even though it has a relatively low employment rate. This reflects the substantial scale of commuting from other regions. Commuting into London also explains why the South East and East of England have high employment rates but relatively low shares of UK workers. The South West, which has the second-highest employment rate in the UK, also has a higher share of workers than the population; net commuting is less important here than in the regions nearer to London, and its activity and employment rates are relatively high.

Table 4.7 Employment by Region

	Growth (% pa)			Change (% whole period)	Share of Total employment (%)	Share of Total Population (%)
	2007	2008	2009	2007-2009	2008	2008
UK	0.4	0.0	-0.9	-0.9	100.00	100.0
England	0.2	-0.1	-0.5	-0.6	84.1	83.8
London	1.4	3.2	-0.2	3.0	14.2	12.4
South East	-0.4	1.4	-1.1	0.3	13.7	13.7
East of England	0.1	-2.1	0.6	-1.5	8.7	9.3
South West	0.8	0.3	-0.6	-0.3	8.7	8.5
West Midlands	1.2	-3.3	-0.5	-3.8	8.4	8.8
East Midlands	1.0	-2.4	1.8	-0.7	7.0	7.2
Yorkshire and the Humber	-1.5	2.4	-1.0	1.4	8.5	8.5
North West	-0.7	-2.6	-3.1	-5.6	10.9	11.2
North East	-0.9	0.2	2.3	2.5	3.9	4.2
Wales	-1.4	3.1	-6.9	-4.0	4.6	4.9
Scotland	2.1	-0.7	-1.2	-1.9	8.7	8.4
Northern Ireland	4.0	-1.1	-1.8	-2.8	2.6	2.9

Notes: Further data notes on the LFS are given in Appendix 1.

Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.

Datalink: https://almanac.ukces.org.uk/employment/C2/C2.3_UK_Employment_by_Region_Sector_and_SSC.xls.

London has had the largest increase in the number of workers over the period 2007-2009. Even during the worst year of the recession, the number of workers only decreased by 0.2% in 2009. London is, of course, specialised in Banking, finance & insurance, which was one of the fastest-growing broad sectors. The recession has had only a modest impact on employment in the sector and on London. The North East saw the second-largest percentage increase in the number of workers over the period 2007-2009. In particular, the 2.3% rate of increase in 2009 is in sharp contrast to the falls in employment that were experienced by six of the nine English regions. The North West, Wales and the West Midlands saw the largest falls in the number of workers. They are relatively specialised in Manufacturing which has been the sector that has shed jobs most rapidly (see Table 4.8, and Figure 4.2).

Turning to the sectoral structure of UK employment, Table 4.8 shows the numbers of workers employed in various broad sectors[36] of the UK economy for 2007, 2008 and 2009 and the change in the numbers for the whole period. It also shows the share that each had of the UK total in 2009.

The sector employing the largest number of workers in 2009 was Public administration, education & health (30.3% of the total). However, the public sector spending cuts announced in the June 2010 budget by the coalition government suggest that the share of employment in the public sector will be reduced in the near future and is likely to impact disproportionately on the Public administration, education & health sector. Distribution, hotels & restaurants and Banking, finance & insurance were the next largest employers. Combined, the service sectors[37] comprised 78.8% of the number of workers, Manufacturing comprised 10.6% and Construction 7.8% of workers. Fewer than 3% of workers were employed in primary industries, and utilities.

The fastest growing sector between 2007 and 2009 was Agriculture & fishing, although it employs relatively few workers. The next fastest was Public administration, education & health, followed by Distribution, hotels & restaurants and Banking, finance & insurance. Construction was one of the fastest growing sectors in pre-recession years but it saw a fall of 7% in number of workers in 2009.

Manufacturing was the sector that saw the steepest decline, with the number of workers employed falling by more than 17% over 2007-2009. Transport & communication employment also fell, though less rapidly. As a result, Manufacturing's share of workers declined by 2.2 percentage points between 2007 and 2009 whereas the share of workers in Banking, finance and insurance increased by 0.4 percentage points. These shifts are consistent with structural changes over the longer term, but the recession in 2009 caused a sharper shift.

[36] See Appendix 2 for the LFS definition of broad sectors.
[37] Distribution, hotels & restaurants, Transport & communications, Financial & business services, Public administration, education and health and Other services

Table 4.8 Number of workers in the UK workplace, by broad sector

	Level (000s)			Change (%, whole period) 2007-2009	Share of Total (%)
	2007	2008	2009		2009
Agriculture & fishing	402.4	423.3	456.9	13.5	1.6
Energy & water[38]	328.0	343.5	328.5	0.1	1.2
Manufacturing	3666.1	3404.8	3013.3	-17.8	10.6
Construction	2341.2	2363.7	2198.2	-6.1	7.8
Distribution, hotels & restaurants	5372.2	5454.6	5454.1	1.5	19.3
Transport & communication	1913.5	1934.7	1763.7	-7.8	6.2
Banking, finance and insurance	4739.3	4674.1	4798.4	1.2	16.9
Public admin, educ & health	8062.1	8204.5	8570.4	6.3	30.3
Other services	1765.1	1781.1	1731.1	-1.9	6.1
Total	28589.9	28584.3	28314.5	-1.0	100.0

Sources: LFS/IER.
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.2_UK_Employment_by_Sector_and_SSC.xls.

The definitions of the sectors covered by the Sector Skills Councils (SSCs) can also be used to demonstrate the sectoral distribution of UK employment.[39] In 2009, 89.8% of employers were covered by SSCs (Table 4.9). The majority of those who were not covered by any SSC were in the Business and Public Services group. The SSC with the largest share of UK workers in 2009 was Skillsmart, the SSC for the Retail sector, which covers 9.8% of workers. The next largest SSC is ConstructionSkills, the SSC for the Construction sector, which covers 7.8% of workers.

Using the Annual Business Inquiry (ABI) we can examine how the sectoral make-up of employment is distributed by firm size. The Annual Business Inquiry measures jobs rather than workers (which is what the Labour Force Survey measures). Further, unlike the LFS the ABI does not include the number of self-employed, whose importance varies considerably across sectors. Finally, the ABI data presented in the Almanac are for Great Britain rather than the UK (i.e. excluding Northern Ireland). These differences between the two sources account for differences in their data.

[38] This sector, as grouped in the LFS, also includes Mining and Quarrying.
[39] Appendices 2 and 3 give full details on the remit and function of SSCs as well as their definitions by SIC code.

Table 4.9: UK employment by SSC in 2009

	Total Employment(000's)	SSC Share in Total (%)
Asset Skills	642.6	2.3
Automotive Skills/IMI	528.0	1.9
Cogent	494.0	1.7
ConstructionSkills	2196.1	7.8
Creative and Cultural Skills	330.6	1.2
Energy & Utility Skills	375.0	1.3
e-skills UK	718.5	2.5
Financial Services	1404.8	5.0
GoSkills	620.0	2.2
Government Skills	1343.4	4.7
Improve	389.7	1.4
Lantra	616.1	2.2
Lifelong Learning UK	1766.6	6.2
People 1st	1606.9	5.7
Proskills	531.0	1.9
SEMTA	1608.9	5.7
Skills for Care and Development	1827.2	6.5
Skills for Health	2075.2	7.3
Skills for Justice	562.3	2.0
Skills for Logistics	1436.0	5.1
SkillsActive	456.5	1.6
Skillset	628.6	2.2
Skillsmart Retail	2782.8	9.8
SummitSkills	497.5	1.8
Non-SSC employers Primary	85.9	0.3
Non-SSC employers Wholesale/Retail	9.4	0.0
Non-SSC employers Business and Public services	2781.0	9.8

Notes: The ABI employment data by SSC do not match the LFS data by SSC which is presented in this table due to the fact that the ABI data measures employment by jobs and LFS data measures employment by workers. Further data notes on the LFS and SSC definitions are given in Appendices 1 and 2.

Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.2_UK_Employment_by_Sector_and_SSC.xls.

Table 4.10 sets out the 2008 number of jobs by firm size in Great Britain by broad sector and by Sector Skills Council from the ABI.

The data in Table 4.10 shows that the majority of jobs are in medium and large firms. In 2008, 32% of jobs were in firms with more than 200 workers with the share of jobs in other sized firms more evenly distributed: 24% in those with between 50 and 199 workers, 24% in

those with between 11 and 49 workers and 21% in firms with fewer than 11 workers. These proportions are similar to those in 1998 although there has been a slight reduction (around 1 percentage point) in the proportion of jobs in firms with between 11 and 49 workers and a slight increase (around 1 percentage point) in the number of jobs in firms with more than 200 workers. In 2008, the sectors with the greatest proportion of jobs in small firms (with fewer than 11 workers) were Agriculture (57%) and Construction (42%). In contrast, Public administration and Education had the smallest proportion of jobs in small firms (3% and 4% respectively) with Electricity, gas and water supply the next lowest at 9%.

The sectors with the greatest proportion of jobs in large firms (with more than 200 workers) were Public administration (61%), Mining & quarrying (51%) and Transport and storage[40] (41%). The sectors with the smallest proportions were Agriculture (3%) and Hotels and restaurants (7%).

The sectors with the greatest proportions of jobs in medium-sized firms (with between 11 and 200 in size) were Education (66%), Hotels and restaurants (60%) and Electricity, gas and water supply (52%). The sectors with the fewest such mid-sized firms were Financial services (34%) and Public administration (36%).

[40] Consists of the following activities: Land transport and transport via pipelines; Water transport; Air transport; and Postal and courier activities. The sector Information and communication consists of the following activities: Publishing activities; Motion picture, video and television programme production, sound recording and music publishing activities; Programming and broadcasting activities; Telecommunications; Computer programming, consultancy and related activities; and Information service activities.

Table 4.10 Employees by firm size in GB by sector and SSC (2008)

	Employment (000s)	firm size band 1-10 %	firm size band 11-49 %	firm size band 50-199 %	firm size band 200+ %
Sector					
Agriculture & fishing	41.5	56.8	26.8	13.0	3.4
Energy & water	288.1	9.1	19.8	29.9	41.3
Manufacturing	2,531.3	13.2	21.7	28.0	37.1
Construction	1,351.7	41.7	22.2	19.2	16.9
Distribution, hotels & restaurants	6,194.5	30.6	31.9	19.3	18.2
Transportation and storage	1,251.1	13.8	18.5	26.9	40.9
Information and communication	997.4	26.3	16.9	19.3	37.5
Banking, finance and insurance etc	5,447.5	24.7	18.7	20.9	35.7
Public admin, educ & health	7,186.9	6.7	23.1	28.9	41.2
Other services	1,203.6	38.8	26.7	21.2	13.3
Total	26,494	21.0	23.8	23.6	31.6

	(000s)	band 1-10	band 11-49	band 50-199	band 200+
Asset Skills	903.5	29.1	18.1	18.3	34.6
Automotive Skills/IMI	592.4	34.0	33.1	20.8	12.1
Cogent	409.5	11.1	22.2	30.2	36.6
ConstructionSkills	1378.1	39.9	22.9	20.3	16.9
Creative and Cultural Skills	155.3	47.1	20.2	19.1	13.6
Energy & Utility Skills	233.3	9.1	20.6	31.1	39.2
e-skills UK	751.1	28.9	17.1	19.0	35.0
Financial Services	1275.6	16.4	19.0	15.9	48.7
GoSkills	403.6	10.7	12.9	20.7	55.7
Government Skills	1192.3	13.1	12.3	21.1	53.5
Improve	395.3	7.2	13.5	23.9	55.4
Lantra	222.4	45.4	34.1	16.1	4.4
Lifelong Learning UK	1437.05	5.3	8.0	36.9	49.8
People 1st	1997.8	34.3	38.9	18.6	8.2
Proskills	476.0	21.1	27.3	31.5	20.1
SEMTA	1354.9	12.0	21.8	26.4	39.9
Skills for Care and Development	2477.6	9.4	43.8	38.7	8.1
Skills for Health	1855.9	7.3	16.1	13.7	62.9
Skills for Justice	450.1	2.2	14.0	24.6	59.2
Skills for Logistics	1773.0	22.5	27.0	26.6	23.9
SkillsActive	431.8	20.3	31.9	32.5	15.3
Skillset	565.8	26.3	21.4	23.2	29.1
Skillsmart Retail	2810.2	27.5	24.6	17.9	30.0
SummitSkills	354.3	41.5	22.4	16.3	19.8
Primary / Wholesale / Retail	84.3	31.5	22.7	20.5	25.3
Business services / Public services	2512.5	27.2	18.4	23.8	30.7
Total	26493.6	21.0	23.8	23.6	31.6

Notes: The ABI employment data by SSC do not match the LFS data by SSC which is presented in this table due to the fact that the ABI data measures employment by jobs and LFS data measures employment by workers. Further data notes on the SSC definitions are given in appendix 2.

Sources: ABI, ONS.

Statlink: https://www.nomisweb.co.uk/.

Datalink: https://almanac.ukces.org.uk/employment/C2/C2.7_GB_Jobs_by_Firm_Size_Sector_and_SSC.xls.

With respect to the definition of sectors covered by sector skills councils, the SSC sectors with the greatest proportion of jobs with large firms (with more than 200 employees) were those covered by Skills for Health, Skills for Justice, GoSkills, Improve, and Government Skills, all of whom had more than 50% of their workers working in such firms. The SSC sectors with the greatest proportion of workers with small firms (with fewer than 11 employees) were those covered by Creative & Cultural Skills, Lantra, SummitSkills, People 1st, IMI and Primary / Wholesale / Retail, all of whom had more than 30% of their workers working in such firms.

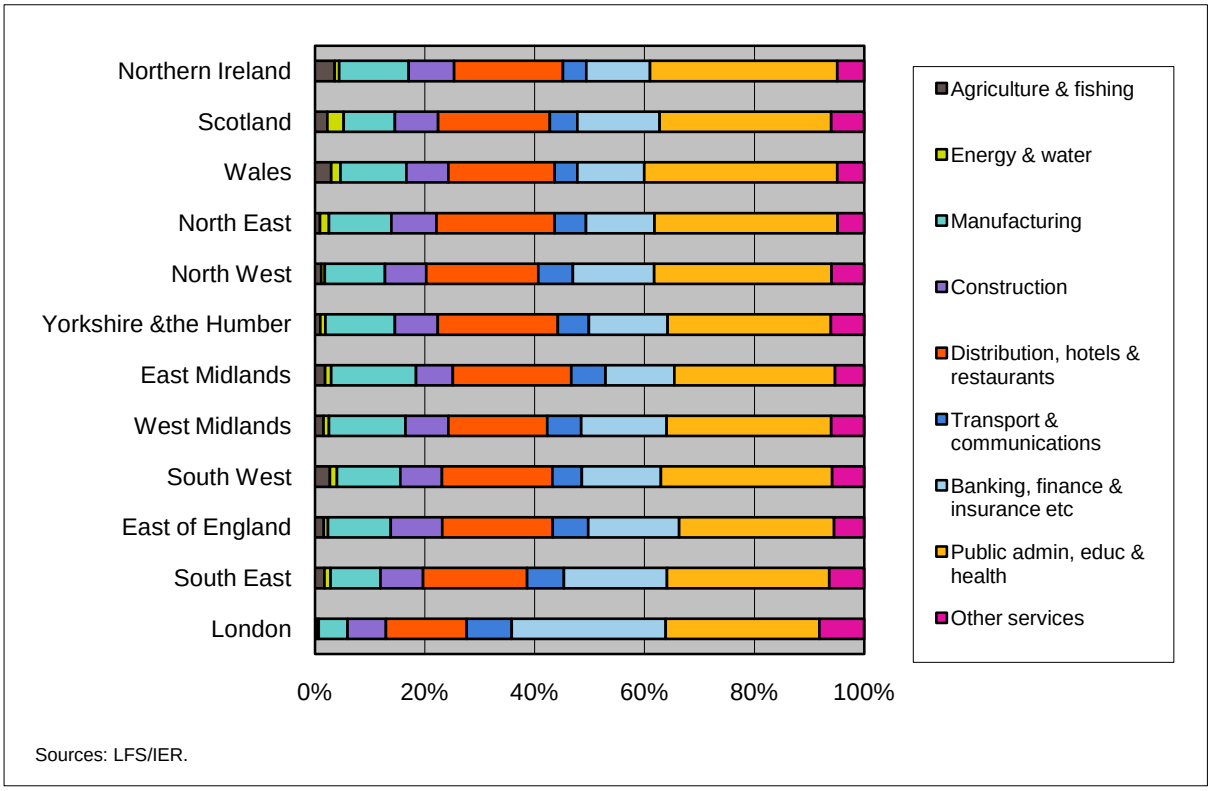
The earlier discussion considered both the geographical and sectoral variations in UK employment; however how these two dimensions interact is also of significance.

Figure 4.2 sets out the shares each sector has of the workers working in each region. As well as giving an overview of the type of work available in each geographical area, patterns of employment by industry sector can be used as a proxy for the *quality* of employment in that region.

London has the highest proportion of its workforce in service sectors at 87%, followed by the South East and North West. Of all regions, London also has the highest share of workers in Banking, finance and insurance (28.1%), the UK's fastest-growing sector by workers between 2007 and 2009;and its share is more than 10 percentage points higher than the next highest region (the South East). Northern Ireland, in contrast, has the fewest workers in this sector at 11.5%. These Banking, finance and insurance activities are regarded as higher value-added compared with the average of the Manufacturing sector. Therefore employment in London can be thought of as having a higher quality in terms of the economic value they generate.

The regions with the fewest employees in service sectors are Northern Ireland and the East Midlands. Both the East Midlands and the West Midlands have the highest proportion of workers in Manufacturing (13.9% and 15.5% respectively). Yorkshire & the Humber, Wales and Northern Ireland also have more than 12% of workers working in the Manufacturing industry.

Figure 4.2 Sector share of employment by Region, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.3_UK_Employment_by_Region_Sector_and_SSC.xls.

With the exception of London, Public admin, education and health is the largest employer across the regions, typically accounting for around 30% of employment. In London, Banking, finance and insurance is the biggest employer. Outside London, Public admin, education and health accounts for the smallest share of employment in the East of England (28.2%). The regions where it has the largest share are Wales (35.1%), Northern Ireland (34.1%), the North East (33.3%) and the North West (32.2%). These regions, therefore, are most exposed to the cuts in public spending cuts, although the full impact will depend on the types and shares of these activities in each region. Spending on public administration and defence activities is set to fall in the short to medium term, but spending on education and health is not.

Across the regions where Public admin, education and health accounts for over 30% of employment, manufacturing accounts for 11-12% of employment. The exception is Scotland where it accounts for just 9%. At the same time, Banking, finance and insurance accounts for between 11.5% (Northern Ireland) and 15% (North West; Scotland) in these regions.

Thus, hopes that the employment effects of public spending cuts can be offset by manufacturing growth appear weakest in Scotland. However, the prospect of stronger growth in Banking, finance and insurance offsetting public sector job losses appear strongest in Scotland, which would come through most clearly in Scotland. The North West and South West are arguably best placed to benefit from stronger activity in both.

Scotland, Northern Ireland and Wales have the highest shares of workers working in the primary sectors of Agriculture & fishing and Energy and water (which also includes Mining and quarrying). The highest share of workers in Energy and water occurs in Scotland (3%),

while the highest share of employment accounted for by Agriculture & fishing occurs in Northern Ireland (3.6%).

Further insights into employment structure and job quality can be gained from examining the proportion of workers in each occupational group by sector. Figure 4.3 sets out the proportion of workers in each occupation in each sector in 2009.

Between 2002 and 2009, the fastest-growing occupation category was Personal Service Occupations, followed by Professional Occupations and then by Managers and Senior Officials. Between those years, the proportion of individuals working in Personal Service Occupations increased by nearly 1.5 percentage points from 7.3% to 8.7%.

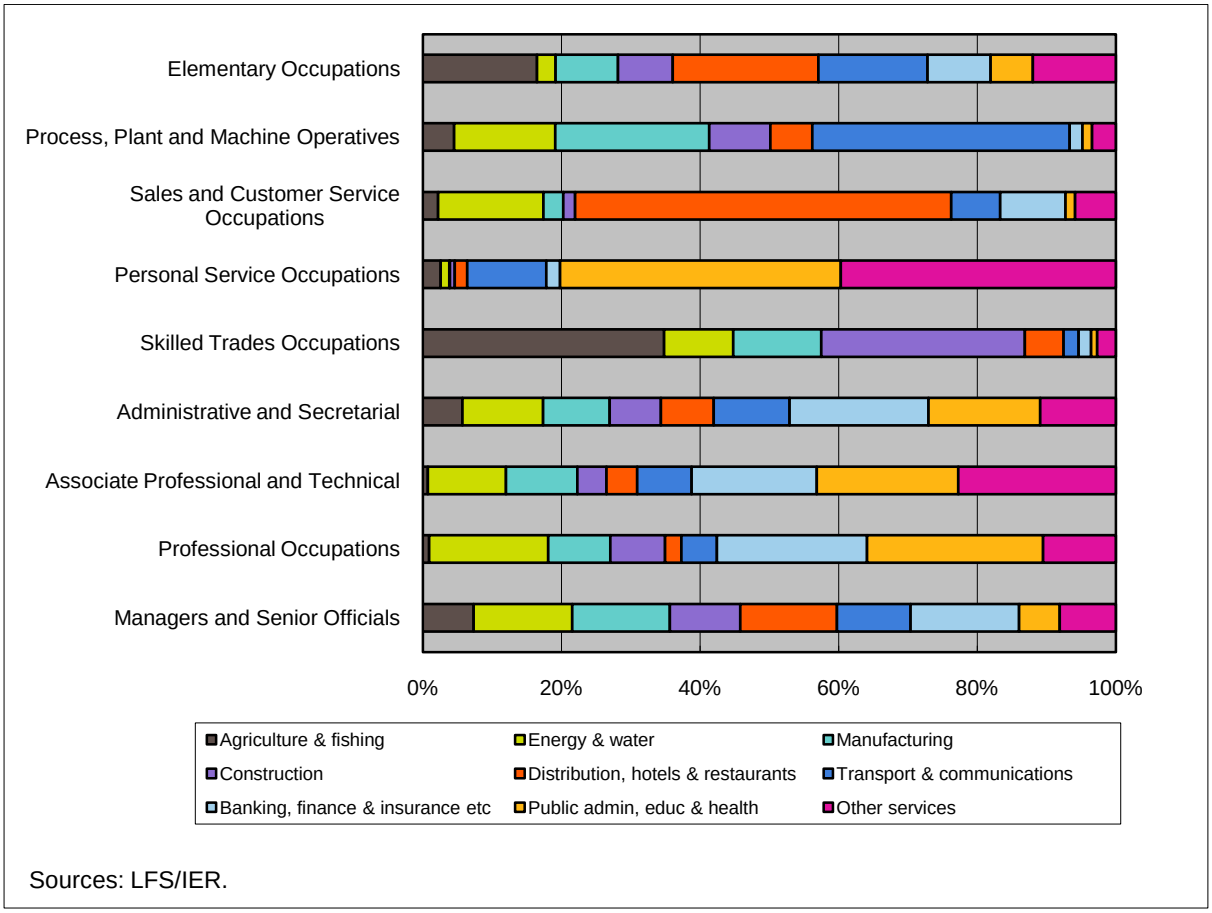
The proportion of people working in Professional Occupations and as Managers and Senior Officials both increased by over 1 percentage point to 13.8% and 15.5% respectively. In 2009, Managers and Senior Officials was the largest occupational category, followed by Associate Professional and Technical (which also increased its share by 1 pp over the period) and then Professional Occupations.

In contrast, Process, Plant and Machine Operatives were the fastest-declining occupational group accounting for 8.3% of workers in 2002 and just over 6.7% in 2009. Administrative and Secretarial, Skilled Trades Occupations and Elementary Occupations also saw declines in their absolute numbers as well as their share between 2002 and 2009.

Banking, finance & insurance had the largest proportion of Managers and Senior Officials in 2009 (22%) followed by Distribution, hotels & restaurants, Manufacturing, and Energy & water. Banking, finance and insurance also had a high proportion of workers working in Professional Occupations, Associate Professional and Technical and Administrative and Secretarial occupations. It had a relatively low proportion of workers working as Plant, Process and Machine Operatives and Personal Service Occupations. As the fastest-growing sector of the economy over the period, this in part explains the shift in the occupational structure of the economy.

Transport and communications has the highest proportion of Plant, Process & Machine Operatives (32%) followed by Manufacturing (19%). Since both sectors shed jobs over this period, this also helps to explain the reduction in the numbers in this occupation.

Figure 4.3 Sectoral share of workers by occupation, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.5_UK_Employment_by_Occupation_Sector_and_SSC.xls.

Using occupation by sector data gives us a proxy for sustainability and job progression; this is not otherwise easily measured using the Labour Force Survey. At any given point in time, employment in lower levels of occupations is likely to be less sustainable and workers who have lower levels of qualification are likely to face poorer prospects of progression. We return to the issue of job quality and progression at the end of the chapter (see table 4.16 and figure 4.4).

The final indicators relating to the structure of employment we consider in this section are presented in table 4.11. Table 4.11 sets out the number of workers in each sector by various employment status classifications (such as self-employed, part-time, and permanent workers) and the share they made up of each broad industry in 2009.

In 2009, 86% of workers were employees, with 13% of workers self-employed, similar to levels in 2002. In 2009, Agriculture & fishing had the highest share of self-employment with 58.8% of workers self-employed. Construction and Other services also had large shares of self-employment (37% and 25% respectively). In contrast, 95% of workers in Energy & water (including Mining and quarrying) and Public administration, education & health were employees, making them the sectors with the lowest proportion of self-employment. Manufacturing also had a high proportion of employees (93%). Agriculture is also distinctive in that 3.2% of employees were unpaid family workers, a much higher proportion than in other sectors.

Table 4.11 Workers by Employment Status Classifications by Sector (2009)

	All workers in employment (%)			All workers in employment (%)		Employee (%)	
	Employee	Self-Employed	Unpaid Family Workers	Full-Time	Part-Time	Permanent	Temporary
Agriculture & fishing	38.0	58.8	3.2	81.7	18.3	92.3	7.7
Energy & water[41]	96.7	3.3	0.0	90.3	9.7	96.3	3.7
Manufacturing	92.5	7.2	0.3	90.4	9.6	95.7	4.3
Construction	62.4	37.3	0.3	92.4	7.6	97.0	3.0
Distribution, hotels & restaurants	89.8	10.0	0.3	59.6	40.4	94.5	5.5
Transport & communications	85.4	14.5	0.0	85.6	14.4	96.2	3.8
Banking, finance and insurance	83.3	16.2	0.4	79.1	20.9	94.9	5.1
Public admin, educ & health	94.4	5.4	0.2	67.2	32.8	93.4	6.6
Other services	74.2	25.4	0.3	64.9	35.1	90.0	10.0
Total	86.3	13.4	0.3	73.7	26.3	94.4	5.6

Notes: When looking at data by levels, the total (employees + self-employed + unpaid family workers) should in principle match the total (full-time + part-time). If this is not the case, then the differences are due to non-responses in the survey. The total (permanent + temporary) should also in principle match the total number of employees. Again, any differences would be due to non-responses in the survey. Further data notes on the LFS are given in appendix 1.
Sources: LFS/IER.
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.4_UK_Employment_by_Employment_Status_Sector_and_SSC.xls

In 2009, 74% of workers were full-time, whereas 26% were part-time. This is similar to the position in 2002. The sectors with the highest proportions of part-time workers were Distribution, hotels & restaurants (40%), Other services (35%) and Public administration, education & health (33%). As discussed in the commentary to Table 4.12, these are all sectors in which women form a relatively high proportion of workers. The sectors with the most full-time workers were Construction (92%), Energy & water (90%) and Manufacturing (90%); all sectors with high proportions of male workers (see Table 4.11).

In 2009, 94% of employees were permanent whereas 6% of employees were temporary. Again, this is similar to the position in 2002. In 2009, Other services had the highest proportion of temporary employees (10%). Agriculture & fishing and Public administration, education & health also had high proportions of temporary employees (8% and 7% respectively). Construction had the highest proportion of permanent employees (97%).

[41] This sector, as grouped in the LFS, also includes Mining and Quarrying.

4.3.3 Employment demographics

This section now turns to look at UK employment by age, gender, and ethnic group. Table 4.12 indicates the levels and change of the number of workers in different age groups between 2007 and 2009, as well as their share in the total number of UK workers in 2009.

The fastest-growing group of workers over the three years was those aged 65 or over, followed by those aged between 60 and 64. In 2009, those groups made up 8.5% of workers whereas in 2007 they made up about 7%. These changes reflect rising activity rates and declining unemployment rates among older sections of the population (see Table 4.4). They also reflect an aging population.

The group of workers that saw the steepest decline over the three years was those aged between 35 and 44. In 2009, they made up 24.7% of workers. This group experienced rising activity rates over 2007-09, which only to some extent offset the increase in unemployment during the recession (especially in 2009) leading to declining employment rates. However, the number of individuals in this section of the population has declined, again reflecting an aging population.

The second steepest decline was in workers aged between 19 and 24. The explanation for this decline is different to that for the experienced workers. This change reflects a decline in the activity rate and an increase in the unemployment rate during the recession. Despite the shifts in the structure of the working population, individuals aged under 60 still made up over 90% of the number of workers in 2009.

Table 4.12 Employment by Age

	Level (000s)			Change (%, whole period)	Share of Total (%)
	2007	2008	2009	2007-2009	2009
19 to 24	3138.83	3073.7	3054.88	-2.7	10.8
25 to 34	6037.85	6120.04	6036.86	0.0	21.3
35 to 44	7398.61	7258.64	7000.58	-5.4	24.7
45 to 59	8931.51	8991.44	9107.32	2.0	32.2
60 to 64	1547.43	1613.11	1631.78	5.5	5.8
65 and over	647.59	686.16	767.83	18.6	2.7
Total	27701.82	27743.09	27599.25	-0.4	100.0

Notes: Further data notes on the LFS are given in appendix 1.

Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/employment/C3/C3.2_UK_Employment_by_Age_Sector_and_SSC.xls.

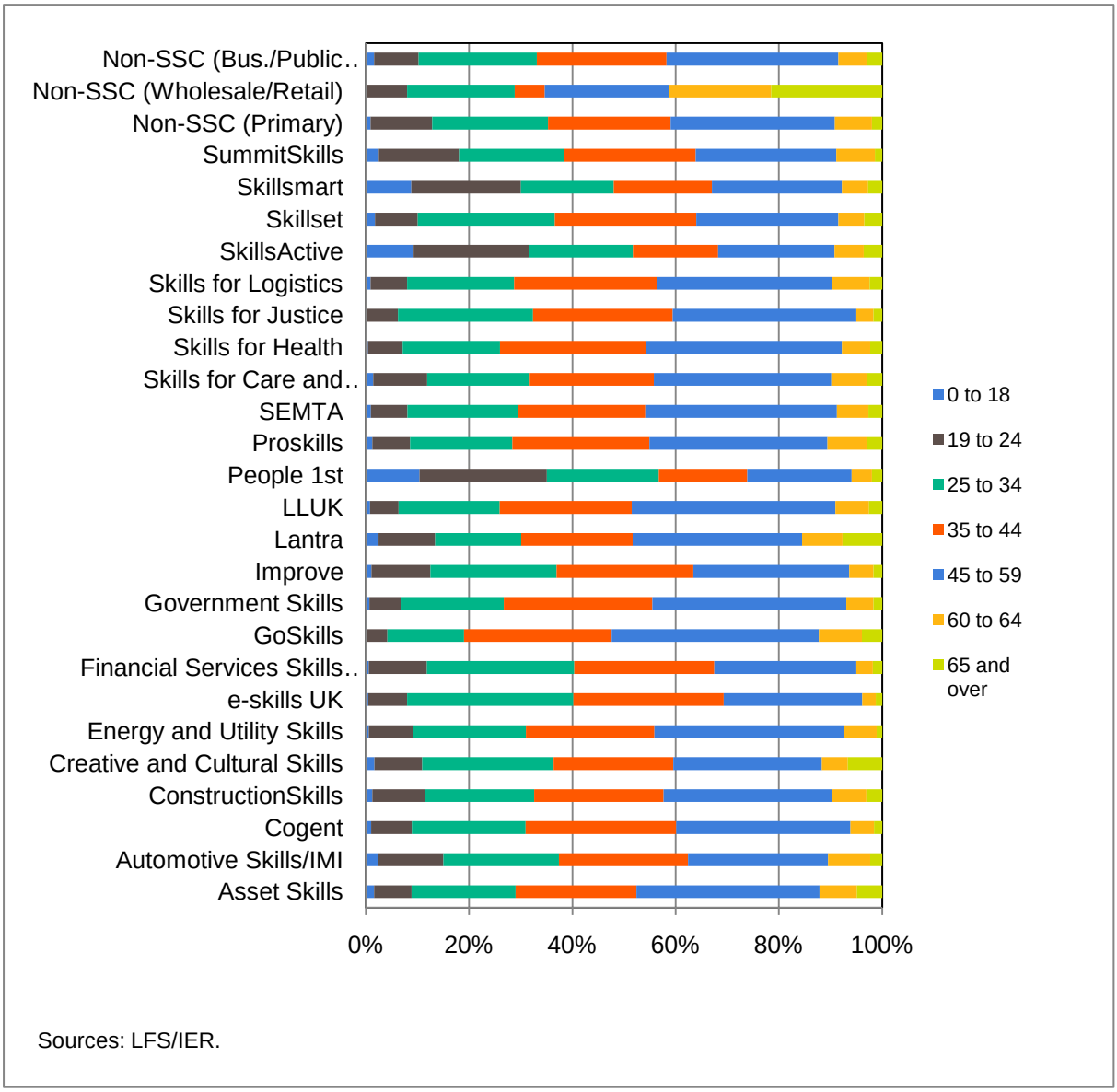
Looking at how the age structure of employment plays out by sector, Figure 4.4 sets out the shares that each age group makes up of the SSC's workers.

Around one third of the UK workers are under 35. People 1st (the SSC for the hospitality, leisure, travel and tourism sector) covers the sector with the highest proportion of workers under 35 (56.8%), 61.7% of whom are under 25. Other SSC sectors with high proportions of young workers are those covered by SkillsActive (the SSC for active leisure and working)

with 51.7% under 35 and 31.5% under 25, Skillsmart (48.0% under 35), the Financial Services Skills Council (40.4% under 35), and SummitSkills with 38.4% under 35.

GoSkills (the SSC for Passenger Transport) sector has the oldest workforce with 81.0% of workers 35 and over, of whom more than half are 45 and over. Other SSC sectors with older workforces are those covered by Lifelong Learning UK (74.1% of workers 35 and over), Skills for Health (74.0%), Government Skills (73.3%) and Proskills UK (the SSC for the process and manufacturing sector) with 71.6% of workers over 35.

Figure 4.4 Employment by SSC by Age in 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/employment/C3/C3.2_UK_Employment_by_Age_Sector_and_SSC.xls.

Turning to employment by gender, Table 4.13 sets out the number of workers of each gender in each broad sector in the UK for the years 2007, 2008 and 2009, as well as the growth in the number of workers between 2007 and 2009. The 2009 shares of each gender in each sector are also given.

In the UK, 53% of workers are male, 47% female. This is largely explained by the fact that women have lower activity rates than men in the working age population and hence lower employment rates (see Table 4.13). However, between 2007 and 2009 the number of women workers grew by 0.6% while that of men fell by 2.3%. In Agriculture & fishing, Energy & water, Manufacturing, and Transport and communication, men outnumber women by a factor in the order of three to one. In the Construction sector, the ratio is even more skewed towards men with around eight men for every woman. In Banking, finance & insurance the number of men and women is closer although male workers outnumber female workers by over 16 percentage points in 2009 (compared with 13 percentage points in 2007).

In contrast, women outnumber men in Public administration, education & health with women making up 70% of workers in this sector. Women also outnumber men in the Other services sector (which includes various personal services) and the number of men and women are broadly equal in Distribution, hotels & restaurants. A distinctive characteristic of all these sectors is that they have a relatively high proportion of part-time workers (in all cases over 30% of the workers are part-time). A greater proportion of women than men work part time. The number of male workers grew fastest over the three years in Agriculture & fishing and Public administration, education & health. The number of male workers declined the fastest in Manufacturing.

The number of female workers grew fastest over the three years in Public administration, education & health and Construction.

The final demographic variable we consider in this section on the demographics of employment is ethnicity. Table 4.14 presents employment by ethnic group between 2007 and 2009, as well as the change over this period and each group's share of total employment in 2009.

In 2009 90.7% of workers were classified as White. The Chinese ethnic group had the smallest share of workers (0.5%), followed by the Mixed ethnic group (0.7%). However, the Chinese ethnic group had the fastest growth in workers between 2007 and 2009, growing 15% over these years. The Mixed ethnic group's worker numbers grew by 13% and the number of workers in the Asian group grew by 12%. This compares to a total decline in workers of -1% over 2007-2009.

The number of workers increased in all ethnic groups between 2007 and 2009 except for the Other and White ethnic groups, which saw a decline of 8.2% and 1.8%, respectively.

Table 4.13 Workers by sector by gender

	Level (000s)			Change (% whole period)	Share of total (%)
	2007	2008	2009	2007-2009	2009
Total					
Male	15478.1	15418.4	15129.7	-2.3	53.4
Female	13111.8	13165.9	13184.8	0.6	46.6
Total	28589.9	28584.3	28314.5	-1.0	100.0
A-B: Agriculture & fishing					
Male	296.8	308.6	356.7	20.2	78.1
Female	105.6	114.7	100.2	-5.1	21.9
Total	402.4	423.3	456.9	13.5	100.0
C,E: Energy & water					
Male	249.9	262.3	249.5	-0.2	76.0
Female	78.1	81.2	79.0	1.2	24.0
Total	328.0	343.5	328.5	0.1	100.0
D: Manufacturing					
Male	2718.9	2522.3	2256.3	-17.0	74.9
Female	947.3	882.5	757.0	-20.1	25.1
Total	3666.1	3404.8	3013.3	-17.8	100.0
F: Construction					
Male	2116.1	2140.3	1967.0	-7.0	89.5
Female	225.1	223.4	231.2	2.7	10.5
Total	2341.2	2363.7	2198.2	-6.1	100.0
G-H: Distribution, hotels & restaurants					
Male	2686.1	2729.5	2753.6	2.5	50.5
Female	2686.1	2725.1	2700.5	0.5	49.5
Total	5372.2	5454.6	5454.1	1.5	100.0
I: Transport & communications					
Male	1457.6	1462.5	1352.8	-7.2	76.7
Female	455.9	472.3	410.8	-9.9	23.3
Total	1913.5	1934.7	1763.7	-7.8	100.0
J-K: Banking, finance & insurance					
Male	2686.6	2661.0	2789.9	3.8	58.1
Female	2052.7	2013.1	2008.5	-2.2	41.9
Total	4739.3	4674.1	4798.4	1.2	100.0
L-N: Public admin, educ & health					
Male	2416.0	2468.0	2574.5	6.6	30.0
Female	5646.1	5736.5	5996.0	6.2	70.0
Total	8062.1	8204.5	8570.4	6.3	100.0
O-Q: Other services					
Male	850.2	864.0	829.4	-2.5	47.9
Female	914.9	917.1	901.7	-1.4	52.1
Total	1765.1	1781.1	1731.1	-1.9	100.0

Notes: Further data notes on the LFS are given in appendix 1.
Sources: LFS/IER.
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/employment/C3/C3.1_UK_Employment_by_Gender_Sector_and_SSC.xls.

Table 4.14 Employment by Ethnic Group

	Level (000s)			Change (%, whole period)	Share of total (%)
	2007	2008	2009	2007-2009	2009
White	26149.4	26037.8	25680.1	-1.8	90.7
Mixed	187.3	184.6	211.0	12.6	0.7
Asian or Asian British	1147.9	1228.4	1288.2	12.2	4.6
Black or Black British	603.0	606.2	642.3	6.5	2.3
Chinese	121.3	132.1	139.8	15.3	0.5
Other	369.6	385.9	339.3	-8.2	1.2
Total	28578.5	28575.0	28300.7	-1.0	100.0

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/employment/C3/C3.3_UK_Employment_by_Ethnicity_Sector_and_SSC.xls.

4.3.4 Quality of work

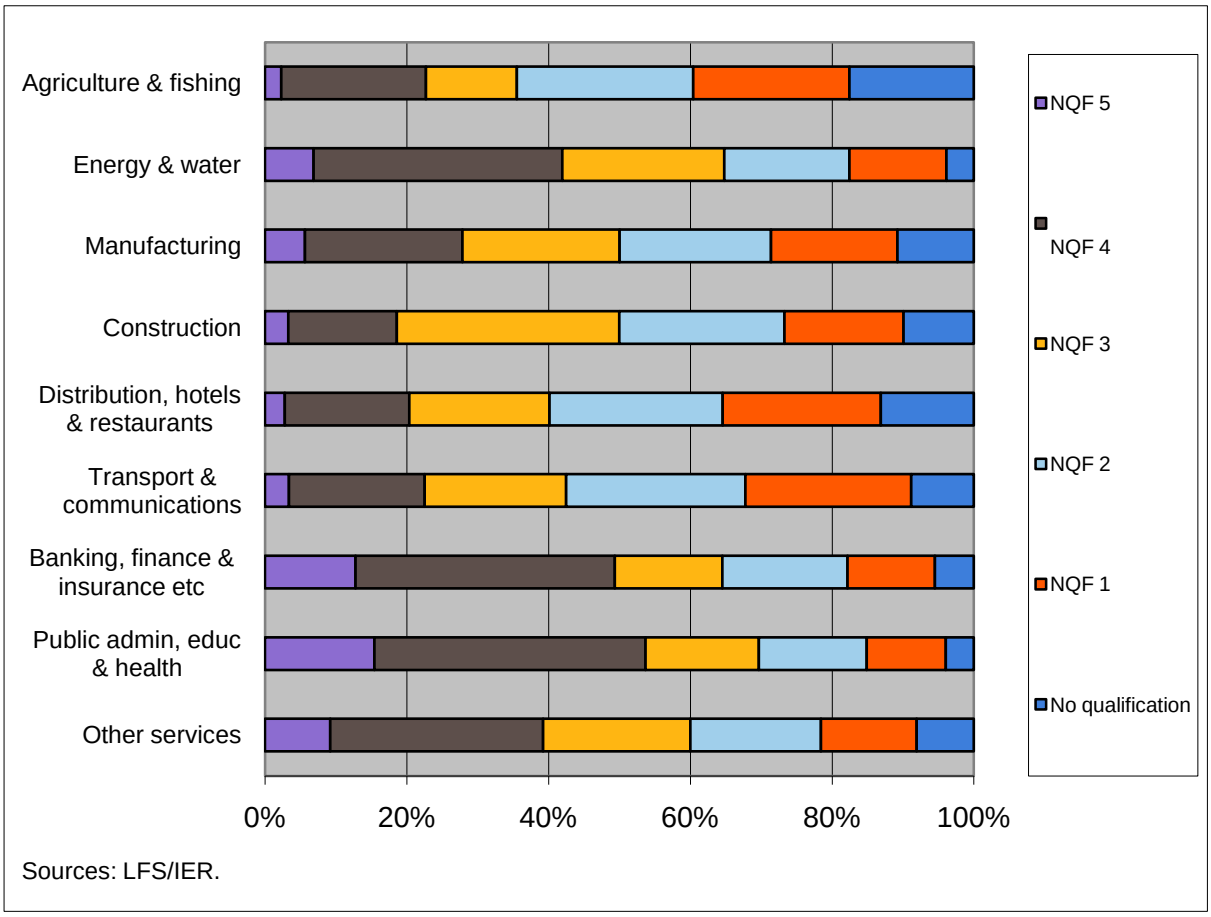
In this final section we begin to consider the quality of work for those in employment. Figure 4.5 sets out the proportion of workers working in each of the broad sectors by the highest qualification they have achieved on the National Qualifications Framework (NQF) in 2009. Employment by qualification obtained to some extent reflects the effectiveness of those in work, the quality of the jobs and the incomes that are earned from work, since we would expect those with higher qualifications to be more productive, and to be able to choose higher-quality and higher-paid jobs.

In the economy as a whole, 38% of workers had higher education qualifications. The sectors with the greatest proportion of workers with higher education qualifications (NQF5 and NQF4)[42] were Public administration, education & health (54%) and Banking, finance & insurance (50%). The sectors with the lowest proportion of workers with higher education qualifications were Distribution, hotels & restaurants (20%), Construction (19%), Transport and communication (23%) and Agriculture & fishing (23%).

In the economy as a whole, just less than 8% had no qualifications. The sector with the highest proportion of workers with no qualifications (18%) was Agriculture & fishing. Distribution, hotels & restaurants, and Manufacturing and Construction each had more than 10% of their workers with no qualifications. The sectors with the fewest workers with no qualifications were Public administration, education & health (4%) and Banking, finance & insurance (5%).

[42] For definition of qualification levels, please see Box 5.2 in appendix 5.

Figure 4.5 Highest Qualification obtained share by Sector in 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D2/D2.1_UK_Workers_by_Qualification_Level.xls.

Remuneration gives a further indication of job quality. Table 4.15 provides information on remuneration by gender, occupation and sector.

Table 4.15 Remuneration by gender, by occupation and by sector

	(average hourly remuneration, £)		
	2007	**2008**	**2009**
UK	13.38	13.94	14.40
Gender			
UK – Male	14.67	15.34	15.78
UK – Female	11.64	12.08	12.60
Occupation			
Managers and Senior Officials	21.22	21.90	18.45
Professional Occupations	20.45	21.02	17.58
Associate Professional and Technical	14.64	15.37	13.26
Administrative and Secretarial	9.85	10.25	8.33
Skilled Trades Occupations	10.84	11.24	9.15
Personal Service Occupations	8.23	8.61	6.80
Sales and Customer Service Occupations	7.32	7.54	6.61
Process, Plant and Machine Operatives	9.56	9.91	7.95
Elementary Occupations	7.58	7.81	6.34
Sector			
Agriculture, forestry and fishing		10.22	10.74
Mining and quarrying		18.39	21.12
Manufacturing		13.61	13.94
Electricity and gas supply		18.28	17.29
Water supply		13.01	13.68
Construction		13.84	14.37
Wholesale and retail trade		11.00	11.23
Transport, storage and communication		12.44	13.16
Hotels and restaurants		8.39	8.25
Information and communication		19.58	19.68
Financial services		21.62	22.05
Real Estate, renting and business activities		14.95	14.65
Professional, scientific and technical activities		18.83	19.46
Administrative and support service activities		10.96	11.20
Public administration		14.45	14.94
Education		14.67	15.38
Health and social work		13.47	14.01
Arts, entertainment and recreation		11.17	12.15
Community, social and personal services		12.29	12.72
Other (not classified)		16.33	16.27

Notes: Due to the adoption of SIC 2007 in 2008, the number of sectors presented in ASHE in 2008 and 2009 is different from what is available for the earlier years. Consequently, there is no data for Other (not classified) in 2007.

Sources: ASHE, ONS.

Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101.

Datalink: https://almanac.ukces.org.uk/employment/C4/C4.3_Average_Hourly_Pay_UK_by_Age_by_Occupation_by_Sector.xls.

In 2009, the average UK hourly remuneration was £14.40; this represented an increase of 7.6% since 2007. Male workers were on average paid £15.78, £1.38 more than the average whereas female workers were on average paid £12.60, £1.80 less than the average. The ratio of the average female worker's hourly wage to that of male workers was little changed from 2007.

By occupation, Managers and Senior Officials (£18.45), Professional occupations (£17.58) and Associate Professional and Technical (£13.26) received the highest hourly wages, whereas Other (£6.34), Sales and Customer Service (£6.61) and Personal Service Occupations (£6.80) received the lowest hourly wages.

By sector, the highest hourly wage was paid in the Financial services sector (£22.05). As Figure 4.3 showed, this sector has a relatively high proportion of employees working as Managers and Senior Officials and Professional Occupations and a relatively low proportion of workers working in occupations lower down the occupational scale.

5 Skills


skills
qualifications
occupations
employment
level
training
qualification
chart
demand
employers
occupation
supply
proportion
higher
different
sector
labour
uk
jobs
gaps
market
including
education
skill
many
services
workforce
national
population
significant
levels
employees
patterns
professional
activity
numbers
sectors
shortages
service
high
low
highest
structure
workers
share
distribution
individuals
well
measures
qualified
business
used
report
people
number
mismatches
total
measured
occupational
framework
vacancies
contrast
international
imbalances
measure
figure
driven
large
formal
england
received
less
problems
compared
much
box
economic
elementary
technological
proportions
employer
diploma
within
important
changes
off-the-job
on-the-job
ssvs
data
managerial
construction
public
comparisons
although
countries
skilled
shared
various
profiles
first
technical
change
relatively
external
returns
side
source
sales
areas
age
general
manufacturing
working age
generally
deficiencies
structures
see
investment
types
hotels
aspects
locus
highlights
acquired
around
shows
intermediate
nqf
evidence
across
similar
may
particular
focuses
roles
reflects
mvq
held
migration
degree
priority
uk's

Skills Chapter Summary

Skills are one of the key contributors to economic and social success, at both an individual and macro level, although there is also recognition that, in isolation or without careful thought as to their utilisation, they are not enough to guarantee success for businesses or employees.

There are many ways of assessing changing patterns of skills, each of which has its strengths and weaknesses. The formal qualifications that individuals hold and the occupations they undertake are the most widely used indicators, both of which have the advantage of being relatively easy to measure and quantify. Other aspects of skills can be captured by examining in more detail the knowledge, experience and generic and technical competences that individuals possess or that are required in the job they are doing. Of course only some of the skills an individual has may be deployed in any particular job they undertake.

Trends in employment by qualification and occupation suggest that the UK has an increasingly skilled workforce, albeit not as skilled as some of its major competitors: it is not increasing its skills base fast enough to close this gap. According to most international comparisons, the UK fares relatively well when considering higher level qualifications (university degree level and equivalents) but does less well at intermediate level and lower levels.

In terms of formal qualifications, the UK has seen a steady improvement in the levels of qualifications held by its workforce over the past few decades, with increasing numbers going into further and higher education and obtaining qualifications at National Qualification Framework (NQF)[43] Levels 4 and above. These trends have continued into 2009 despite the effects of the recession. Around 33% of the working-age population were qualified to NQF Level 4 and above in 2009. This was up from 26% in 2002. At the other end of the scale, the share of those with no formal qualification had fallen over the same period from 16% to 12%. There has therefore been a continued significant improvement on the skills supply side.

When considering this expansion in the *supply* of skills in the economy, it is important to bear in mind that the evidence of the overall returns to investment in education and skills continues to suggest that, over the past decade as a whole, *demand* for skills, and the concomitant wage premium, has been maintained.

Developments in the occupational structure of employment tell a similar story. There has been a significant increase in the numbers and shares of employment in higher level occupations such as managerial, professional and technical jobs. In contrast, the numbers in many (but not all) less skilled jobs have been falling. These developments have been driven in part by changes in sectoral employment structure (notably the decline of primary and manufacturing sectors and the growth of both private and public sector employment in services). This has been reinforced by changing occupation structures within sectors, driven by skill biased technological and organisation changes, which has also tended to favour the higher level occupations. By 2009, Managers and Senior Officials, Professional Occupations and Associate Professional and Technical Occupations together accounted for some 44% of total employment compared to 39% in 2002. In contrast, the employment shares of the least skilled occupational groups (Process, Plant and Machine Operatives and Elementary Occupations) fell from 21% to 18% over the same period.

[43] See Box 5.2.

At the same time there has also been significant increase in the numbers of jobs for some relatively low skilled service sector workers such as sales and personal service occupations, as well as some jobs in the least skilled "Elementary Occupations" category. Some commentators have characterised this as a polarisation in the demand for skills, emphasising the hollowing out of the number of jobs for intermediate level skills (especially those typically requiring more vocational education and training) in the centre of the occupational spectrum.[44]

5.1 Introduction

5.1.1 The importance of skills

Skills play a key role in economic and social activity, for both individuals and employers, helping to secure and retain employment in higher-quality jobs. Investment in skills can help to increase both the employment rate and pay/productivity. This has benefits for both employers (providing a larger pool of skilled and flexible labour to choose from) and employees (increasing the range and extent of their employment opportunities and the rewards they receive for taking part). For more detailed discussion see *Ambition 2020*[45].

5.1.2 Defining and measuring skills

A more detailed overview on defining skills and the links between skills and the needs of the wider economy can be found in appendix 5.

Skills are capabilities and expertise in a particular occupation or activity. There are a large number of different types of skills, which can be split into a number of different categories:

- basic skills such as literacy and numeracy;
- other generic skills, such as team working and communication;
- specific skills, such as the ability to operate a machine.

There is no perfect measure of skills, and a range of measures can be used. Skill is usually measured by:

- how competence is used (e.g. occupation);
- achievement of competence (e.g. as certified by a qualification); or
- level of competence (e.g. relative ability and levels of execution).

The focus in this chapter is on the first two measures, although it should be recognised that others are also important.

[44] See Spotlight Feature, *Polarisation of the demand for skills*, *UK Employment and Skills Almanac 2009* (UKCES, 2010). Available online at: http://www.ukces.org.uk/publications-and-resources/browse-by-title/uk-employment-and-skills-almanac-2009

[45] UKCES (2010). *Ambition 2020: World Class Skills and Jobs for the UK: The 2010 Edition*. Available online at: http://www.ukces.org.uk/our-work/research-and-policy/ambition2020/.

5.1.3 Understanding the link between skills and the needs of the economy

The links between skills and the rest of the economy are many and complex, as evidenced in the discussion of the Policy Framework in Figure 1.1. There are various aspects which interplay in shaping the skill structure of the workforce, namely:

- **employer demand for skills** is shaped by the general economic activity levels, changing demand for goods & services and by the business strategies adopted by employers in meeting that demand.
- **the supply of skills** is driven by a combination of factors that influence the size of the potential workforce force: demographic change (including migration), and patterns of participation in the labour market as well as participation in education and training and investment in human capital (i.e. the demand for learning).

The balance between these two can lead to matches and mismatches (imbalances) between supply and demand, including various measures of 'shortage' and 'surplus' and the returns to education and training. These can take various forms:

- skill shortages, where employers find it difficult to fill their vacancies with appropriately skilled applicants;
- skills gaps, where members of the existing workforce are seen to lack the skills necessary to meet business needs;
- unemployment, inactivity, 'over-qualification' or 'under-employment', where there is insufficient demand.

Such imbalances may lead to various market and other responses, including adjustments to labour supply (including inward migration, where foreign workers take up jobs that the domestic workforce is unable or unwilling to undertake) and changes in pay. Other aspects and related issues include:

- the changing nature of jobs, including polarisation;
- issues of sustainability and progression;
- particular problems faced by disadvantaged groups.

5.1.4 Content of this chapter

The focus in this chapter is on:

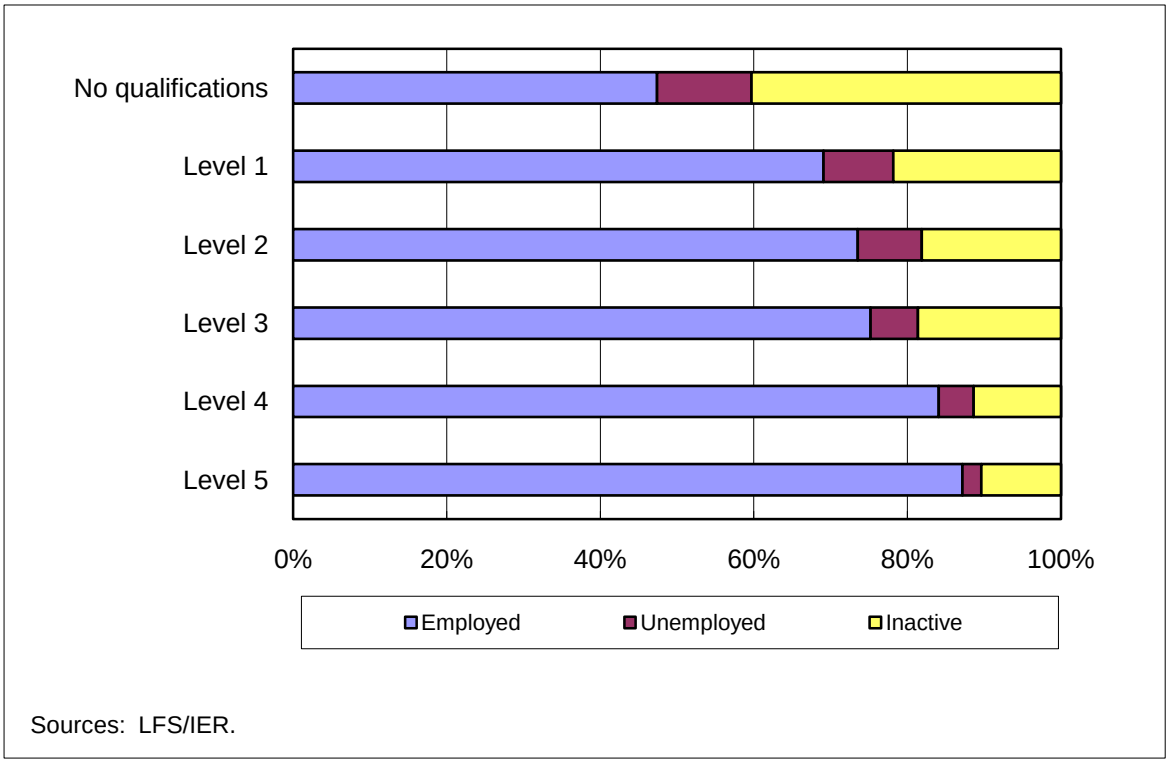
- why skills matter: the link between skills and performance in the labour market;
- levels of skills held by the working age population and how this varies according to a number of factors;
- international comparisons of skills;
- evidence of skills mismatch; and
- evidence on skills acquisition, mainly in the area of training activity.

5.2 Why skills matter: skills and performance in the labour market

Skills matter to individuals, having considerable impact on whether they are in or out of work, and the wages received. There is a very strong and positive correlation between possession of formal qualifications and employment and labour market participation rates. Figure 5.1 also highlights the negative correlation qualification attainment has with unemployment and economic inactivity. Employment rates fell in 2009, especially for the less well qualified

categories. Unemployment rates increased compared to 2008 for all but the NQF 5 category. Inactivity rates increased for some, especially the low and no qualification groups.

Figure 5.1: Economic activity by highest qualification, UK, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D5/D5.%201_Economic_Activity_by_Qualification_Level.xls.

Once in work, qualifications also impact upon pay rates. As Table 5.1 demonstrates, those with qualifications at NQF Level 5 (i.e. a post-graduate qualification or equivalent) get paid 66% more than the UK average. In contrast those with no qualifications tend to earn 39% less than the UK average. This pattern of higher pay rates for higher qualification levels has remained consistent over time. However, the margin has declined in recent years as more graduates have entered the labour market. The premium for Level 4 qualifications has fallen from 37% above the UK average in 2002 to 29% in 2009; for Level 5 qualifications the premium has fallen from 76% in 2002 to 66%.

Table 5.1: Gross weekly pay by qualification, UK, 2002-2009 (£)

	2002	2005	2008	2009	2009 (100=UK)
Level 5	608.50	653.68	702.57	719.51	166.04
Level 4	475.37	508.46	559.89	558.26	128.83
Level 3	334.39	360.93	391.46	383.21	88.43
Level 2	287.39	315.69	339.69	339.09	78.25
Level 1	267.73	293.66	329.07	334.04	77.09
No qualifications	209.89	303.77	265.37	265.87	61.36
UK Average	345.82	387.09	431.34	433.33	100.00

Sources: Annual Population Survey (APS), Labour Force Survey (LFS).
Statlink: https://www.nomisweb.co.uk/ ; http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/Skills/D5/D5.4_Weekly_Pay_by_Qualification_Level_(Region_and_Nation).xls.

5.3 UK evidence on skills

5.3.1 Profile of skills supply in the UK

When considering the UK's current skill profile, the main emphasis is on formal qualifications. Figures 5.2 and 5.3 focus on the UK population's stock of skills as measured in that way.[46]

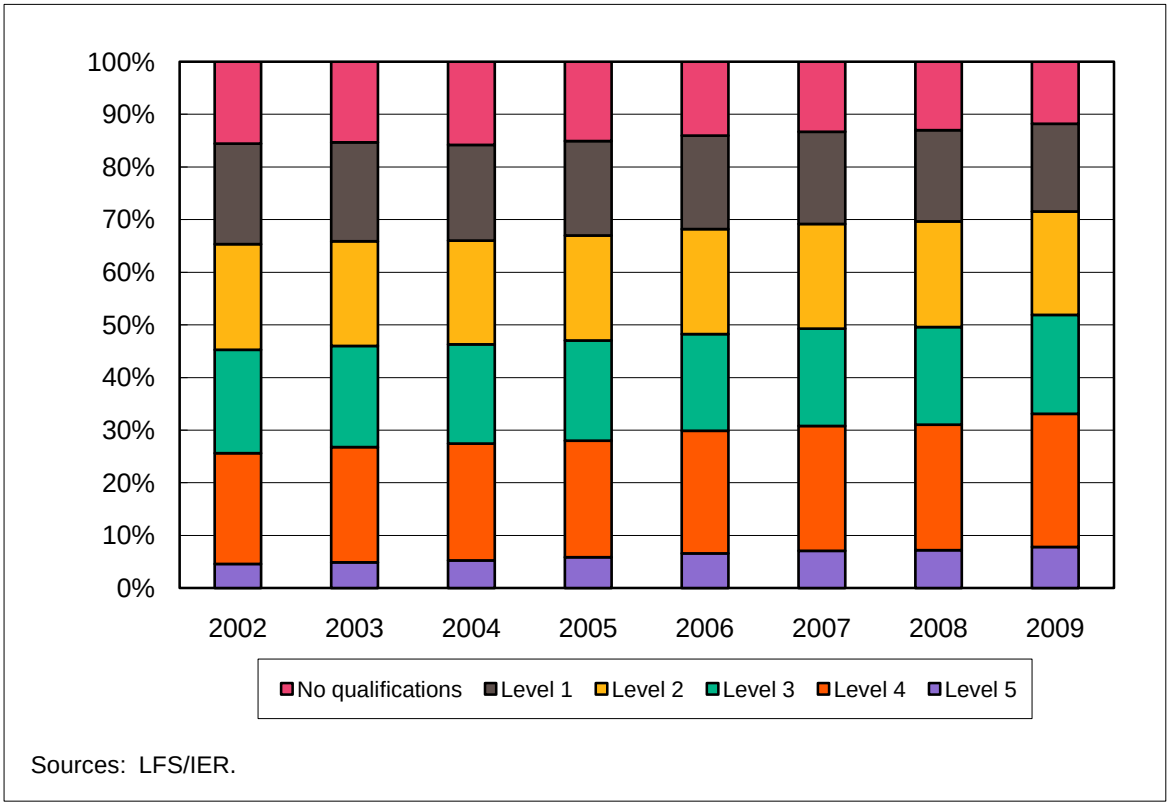
The UK population's stock of skills, as measured by highest qualification held, has shown steady improvement in recent years (see Figure 5.2). The proportion of the working-age population who have achieved qualifications at degree level or above (NQF Level 4 and over) has risen steadily over the past few years (continuing a much longer term trend), such that:

- in 2009 around 33% of the UK working-age population (aged 19-59/64) was qualified to Level 4 or above; this compared to below 26% in 2002;
- at the other end of the qualifications scale, the proportion whose highest qualification is below NQF Level 2 has steadily declined from 35% in 2002 to 28% in 2009. The proportion with no qualifications at all was around 12% in 2009, down from 16% in 2002.

The proportions with highest qualifications at NQF Levels 2 and 3 have not changed much, because, although large numbers of individuals have acquired such qualifications, many of these have then moved on to acquire even higher-level qualifications.

[46] Note that data have not been gathered on basic skills in the workbooks, nor on generic skills, as these are not available in such a comprehensive manner as information on qualifications and occupations. For example, it has not been possible to obtain any more recent data on levels of literacy and numeracy than those that were available in the Leitch Interim Report.

Figure 5.2: Qualifications held by the working age population

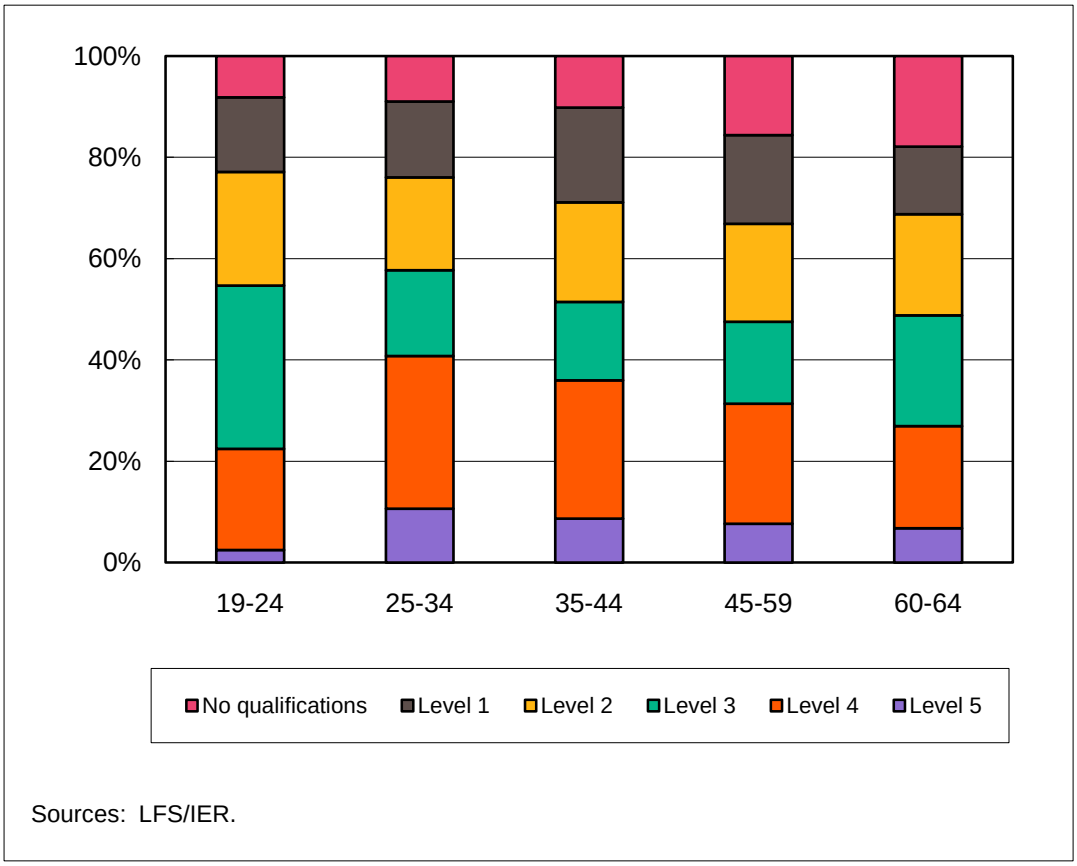


Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D1/D1.1_UK_Working_Age_population_by_qualification_level.xls.

A significant part of this change is attributable to young people entering the working-age population with much better qualifications than older workers reaching retirement age. The improvement in the qualifications held by those already in the labour force is much less significant. Thus, as older workers retire over the next 5-10 years, there should be an overall improvement of the skills profile of the labour force, with higher proportions holding Level 4 and 5 qualifications. At the same time, the number of workers set to retire over the next 5-10 years will be greater than the flow of new workers in. Thus, the workforce is set to get smaller but better qualified. This trend will be less observable where older workers delay retirement. Nevertheless, a smaller population of young workers should, in theory, act to push up salaries for young people, while higher rates of educational attainment may apply downward pressure on wages rates for those qualified to Level 4 or Level 5; thus, it is not clear what the net effect might be.

Figure 5.3: Age and distribution of qualifications, 2009



Sources: LFS/IER.

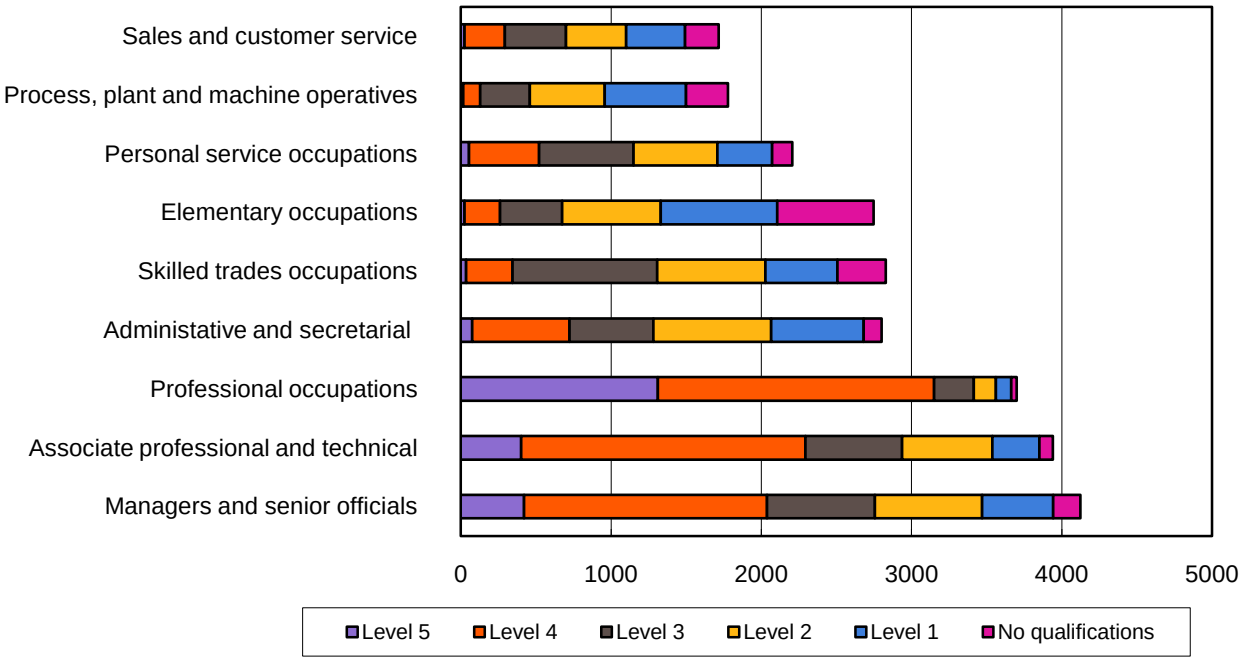
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/Skills/D1/D1.3_UK_Working_Age_Population_by_Qualification_Level_by_Age.xls.

The differential between qualification attainment levels by different age groups can be seen in Figure 5.3 above. In 2009, just 8% of those aged 19-24 had no formal qualifications compared with around 15-20% of those aged 45-64. Of course, many older workers have acquired skills through experience and informal on-the-job training undertaken while at work. Although such skills may not be formally accredited they are of considerable value, both to the individuals concerned and to their employers and often need to be replaced as such workers retire.

Qualifications held vary according to other workplace characteristics, such as the occupational employment structure and the types of skills required.

Looking first at occupations, some occupations have much higher concentrations of higher-level qualifications, with (on average) the higher the occupational level the higher the qualification level (Figure 5.4). Thus, while more than half of those employed in Elementary Occupations and as Process, Plant and Machine Operatives hold no or low-level qualifications, among Managers and Senior Officials this figure is just under 16% and fewer than 4% of those in Professional occupations hold low or no qualifications. About 85% of those employed in Professional occupations are qualified to NQF Level 4 or above and 58% of Associate Professional and Technical are similarly qualified.

Figure 5.4: Employment by highest qualification and occupation, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D2/D2.3_UK_Workers_by_qualification_Level_by_Occupation.xls

Turning to industry / sector, it is clear that (i) some sectors have a more qualified workforce than others, but also (ii) that the differences in patterns of qualifications within sectors largely reflect their occupational employment structures. Changes in the industrial structure of employment, driven by shifts in the patterns of demand for the goods and services that they produce, therefore have significant implications for the demand for skills. The very different occupational structures within broad sectors[47] are shown in Table 5.2. This highlights the high concentration of Sales and Customer Service occupations in Distribution, hotels & restaurants, of Personal Service Occupations in Public administration, education and health and of Skilled Trades Occupations in Manufacturing and Construction.

The implications for qualifications employed in each of these sectors are such that:

- The Distribution, hotels & restaurants sector contains the largest group of workers with no or low qualifications, largely due to its large scale but also its high share of people employed in low level jobs (e.g. Elementary Occupations and some Sales and Customer Service Occupations);
- Transport & communications along with the Distribution, hotels & restaurants sector has the greatest proportion with no, or low (below Level 2) qualifications (around 30%, see Table 5.3).
- Public administration, education and health and Banking, finance and insurance are the sectors with the highest shares of those with higher level qualification (NQF 4+) around 1 in every 2 jobs in both cases.

[47] See Appendix 2 for the LFS definition of broad sectors

Table 5.2: Employment by occupation and broad sector, 2009 (%)

	Managers and Senior Officials	Professional Occupations	Associate Professional and Technical	Administrative and Secretarial	Skilled Trades	Personal Service	Sales and Customer Service	Process, Plant and Machine Operatives	Elementary Occupations	Total Employment
Agriculture & fishing	10.5	0.9	0.8	4.9	59.3	1.4	1.2	3.9	17.1	100
Energy & water	20.2	16.3	12.2	10.0	17.0	0.7	8.1	12.6	2.8	100
Manufacturing	20.1	8.5	11.2	8.3	21.7	0.1	1.5	19.3	9.3	100
Construction	14.4	7.5	4.6	6.4	50.1	0.4	0.9	7.6	8.2	100
Distribution, hotels & restaurants	19.9	2.2	4.8	6.6	9.5	1.0	28.9	5.3	21.8	100
Transport & communications	15.1	4.9	8.5	9.4	3.6	6.1	3.8	32.2	16.3	100
Banking, finance & insurance	22.3	20.6	19.6	17.3	3.1	1.1	5.0	1.6	9.4	100
Public admin, educ & health	8.4	24.1	22.2	13.9	1.5	21.8	0.7	1.2	6.3	100
Other services	11.5	9.9	24.7	9.4	4.6	21.3	3.1	3.0	12.4	100

Sources: Labour Force Survey.
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/employment/C2/C2.5_UK_Employment_by_Occupation_Sector_and_SSC.xls.

Table 5.3: Employment share by highest qualification and broad sector, 2009 (%)

	Level 5	Level 4	Level 3	Level 2	Level 1	No quals	All levels
Agriculture & fishing	2.4	18.4	12.5	24.4	19.8	22.3	100
Energy & water	6.8	34.8	23.2	17.9	13.5	3.8	100
Manufacturing	5.5	21.9	21.9	21.6	17.7	11.3	100
Construction	3.2	14.7	30.6	23.6	17.4	10.5	100
Distribution, hotels & restaurants	2.5	16.2	20.0	26.3	21.8	13.2	100
Transport & communications	3.5	18.5	19.7	25.6	23.3	9.5	100
Banking, finance & insurance	12.5	35.9	15.1	17.8	12.5	6.0	100
Public admin, educ & health	15.1	37.3	15.9	15.8	11.5	4.4	100
Other services	8.8	28.5	19.8	20.0	14.1	8.8	100

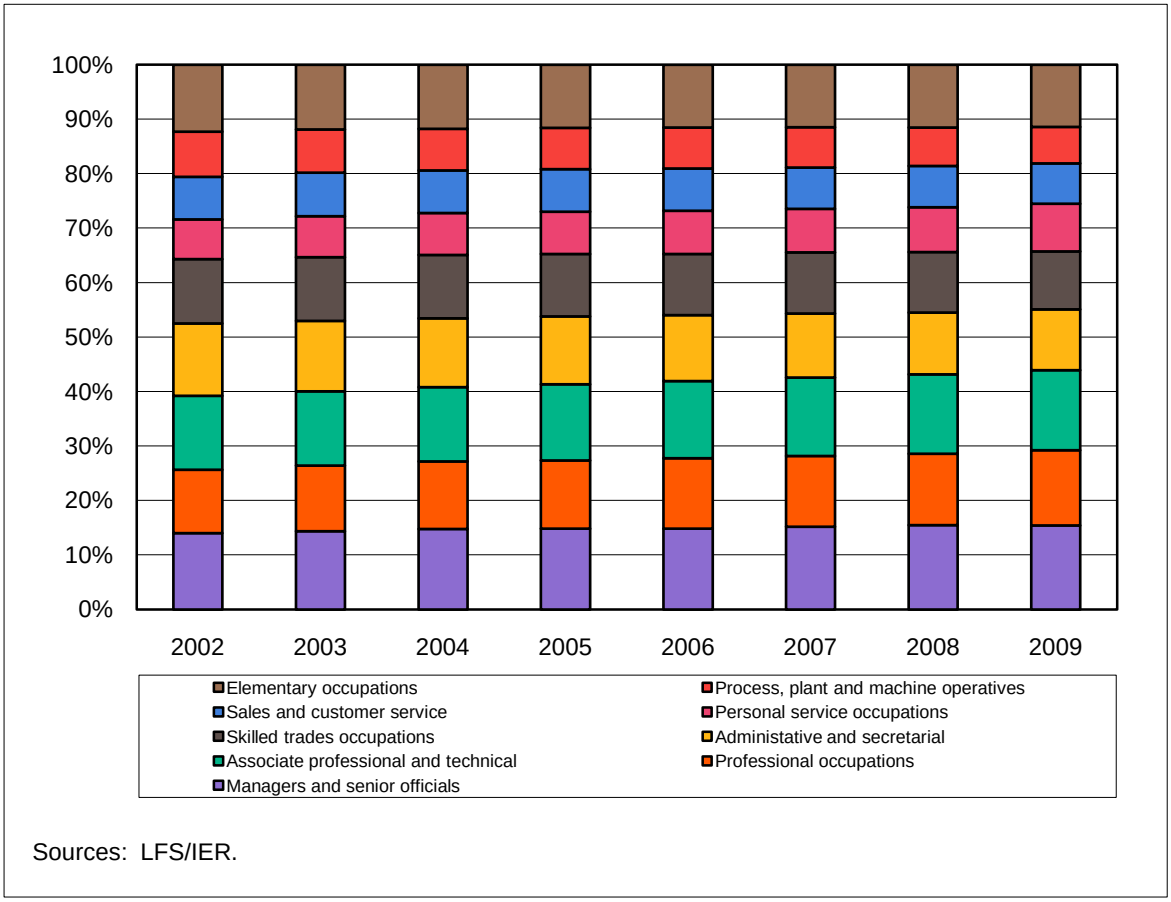
Sources: Labour Force Survey.
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D5/D5.3_UK_Employment_by_Qualification_(Sector_and_SSC).xls.

All this matters because there has been a steady shift in the industrial and occupational structure of the UK workforce, which has tended to increase skill requirements.

UK employment is now heavily concentrated in services. Categories such as Distribution, hotels and restaurants, closely followed by Banking, finance and insurance, and Health & social work, each now account for a similar or higher share of total employment as the whole of Manufacturing. Education, Public administration & defence and, if recent trends continue, Hotels & restaurants, and Other services, are not far behind. In contrast Manufacturing and Construction, primary industries, such as Agriculture, hunting and forestry, and Mining, quarrying, and some service activities such as Transport & communications have experienced employment decline and now only account for a modest share of total employment.

This has, by itself, led to changes in the occupational structure. The changes in sectoral employment structure (notably the decline of primary and secondary sectors and the growth of both private and public sector employment in services), has resulted in a significant increase in the numbers and shares of employment in managerial, professional and technical jobs. In contrast the numbers in many less skilled jobs have been falling.

Figure 5.5: Occupational structure of employment



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/employment/C2/C2.5_UK_Employment_by_Occupation_Sector_and_SSC.xls.

These structural developments have been reinforced by changing occupation structures within sectors. Driven by skill biased technological and organisation changes, these have also tended to favour the higher level occupations. By 2009, managerial and professional occupations (Managers and Senior Officials, Professional Occupations and Associate Professional and Technical) accounted for some 44% of total employment compared to 39% in 2002. In contrast, the employment shares of the least skilled occupational groups (Process, Plant and Machine Operatives and Elementary Occupations) fell from 21% to 18% over the same period.

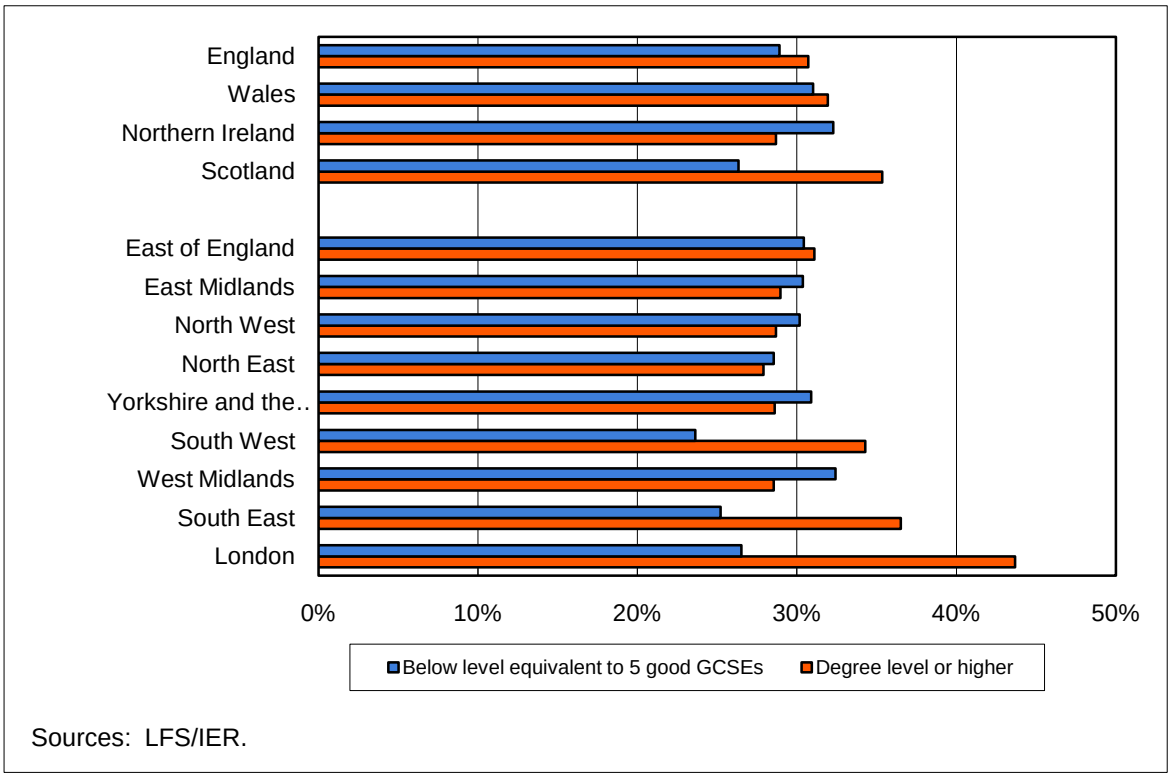
5.3.2 The geographical distribution of skills

Neither the demand for nor the supply of skills are evenly distributed across the UK. The demand for skills depends in large part on the sectoral mix of employment. The supply of skills also reflects this to some degree, but also the educational systems in different parts of the UK.

Most of the patterns relating to the geographical distribution of skills are long standing and persistent. Figure 5.6 shows that, measuring skills by the qualifications of those in employment (a consequence of both demand and supply influences), Scotland is the best qualified of the four home countries. Scotland has a higher proportion in employment qualified to at least degree level (NQF Level 4), and a smaller proportion with low or no qualifications (below NQF Level 2). While Wales has the second highest proportion of workers qualified to at least degree level, it also has the second highest proportion with low or no qualifications. The working-age population of Northern Ireland in employment, however, is generally less well qualified.

Amongst the English regions London stands out as having the highest proportion qualified to first degree level or above, but it also has a relatively high proportion with low or no qualifications. This reflects its sectoral structure, especially the concentration of jobs in business and finance, as well as tourist related activities. There is also something of a North-South divide, with higher proportions well qualified and smaller proportions with no or low qualifications in the south.

Figure 5.6: Skills profile of workers across the UK, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D2/D2.2_UK_Workers_by_Qualification_Level_by_Region.xls.

It should be noted, however, that within each of these geographical areas there are often big disparities. In London, for example, the financial and business services sector demands highly qualified people (many of whom commute in from the city region). In contrast, there are many local areas in which the workforce and inactive population have very poor qualifications.

Spotlight Feature: International labour migration to the UK

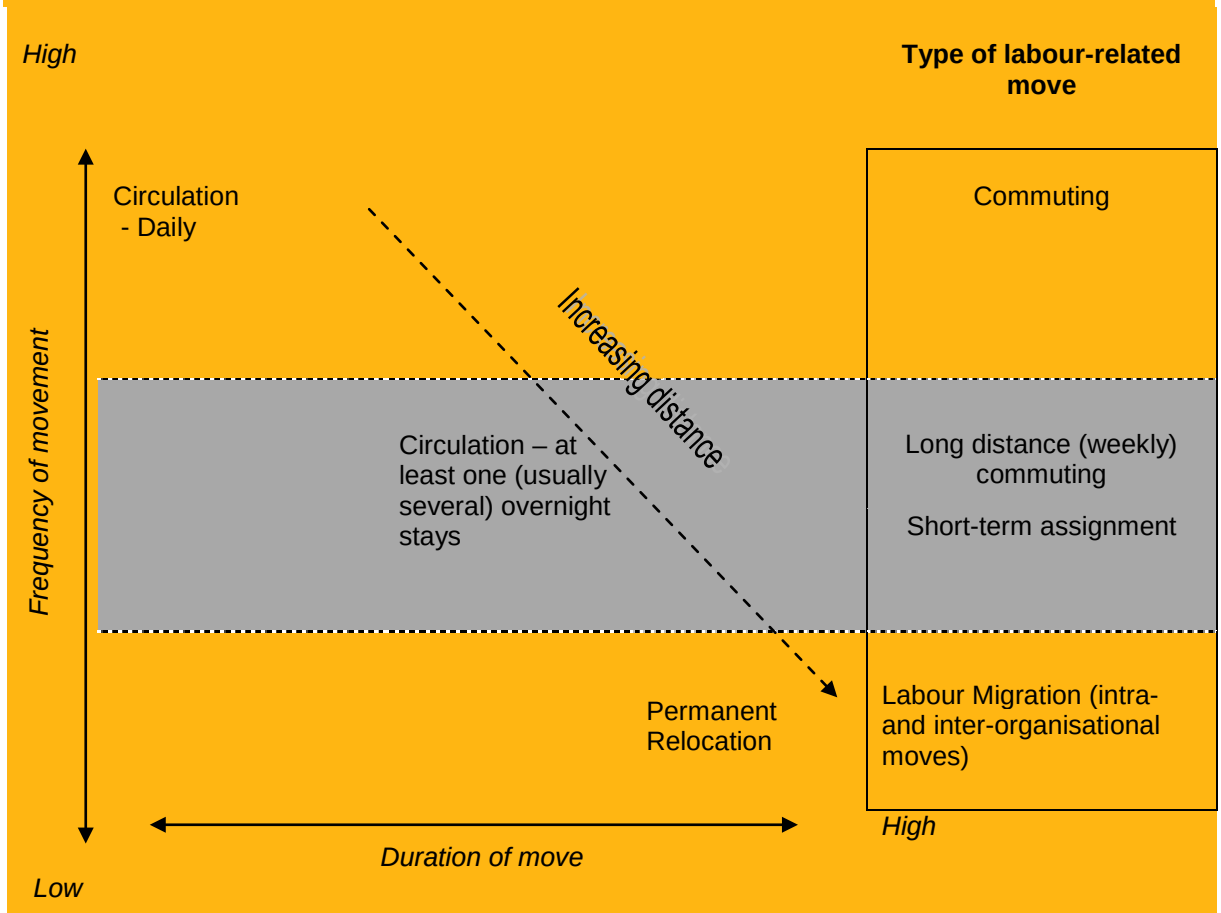
International labour migration has been the subject of some debate in recent years. From 2002 onwards 'immigration' has been identified in the Ipsos Mori Issues Index as one of the 'most important issues facing Britain today' (albeit it declined in importance as public concerns about the economy and unemployment rose from 2008).[i]

Nevertheless, it is a contentious issue. 'Migration' is a term that is in widespread use, but it is inconsistently defined. It tends to be used in different ways, in different contexts and cultures and differently with different data sets. This poses problems for comparability between information sources. This lack of clarity adds to confusion about numbers of migrants and about the impact of migration on labour market dynamics, employment and skills.

Concepts of migration

In conceptual terms it is useful to consider 'migration' as part of a wide concept of mobility – as outlined in Figure S5.1. This Figure illustrates how mobility varies on two dimensions: firstly the duration of the move and secondly the frequency of the move.

Figure S5.1 **Workers' geographical mobility: migration and circulation**



Source: adapted from Green et al. (2009)[ii]

At one end of the continuum are frequent short-duration *commutes* typically undertaken on a daily basis (and in the UK context virtually all are undertaken within the UK). Less frequent longer duration or permanent moves – typically referred to as *migration* – are located at the opposite end of the continuum. Such moves may be sub-national or international in nature and may or may not involve a change of employer.

The United Nations (UN) distinguishes two groups of migrant by duration of stay.[iii] First a *long-term migrant* is a person who moves to a country other than that of his or her usual residence for a period of at least a year (12 months), so that the country of destination effectively becomes his or her new country of usual residence. Secondly, and more recently, the UN has defined a *short-term migrant* as a person who moves to a country other than that of his or her usual residence for a period of at least 3 months but less than a year (except in cases where the movement to that country is for purposes of recreation, holiday, visit to friends and relatives, business, medical treatment or religious pilgrimage). This is indicative of a trend towards the greater importance of short-duration moves (see the shaded area in Figure S5.1) where the conventional distinction between migration and commuting becomes blurred, as there is potential for the latter to substitute for the former. Importantly, statistical sources find such short-term mobility and long distance weekly commuting difficult to capture, with consequent implications for the measurement of migration volumes and impact.

In practice, in debates on international labour migration in the UK 'migrants' are defined in several different ways. For example, in the UK migrants may be described by their *country of birth* (non-UK born) – and this is the Office for National Statistics' (ONS) preferred definition – or by their *nationality* (non-UK nationals). According to estimates from the *Annual Population Survey* for the year to December 2009, 88.7 % of UK residents were born in the UK, while 92.9 % were UK nationals.[iv]

Further distinctions are made between European Economic Area (EEA) nationals (which include the 27 Member States of the European Union (EU) and Norway, Iceland and Liechtenstein) and non-EEA nationals. This reflects the *policy context* for migration – notably, the principle of *free movement* within the EEA and *managed migration* for individuals from outside the EEA.

Another key criterion that has been used in studies of migration is *Year of entry to the UK.* This raises the issue of whether an individual should remain categorised as a migrant as their length of stay increases.

Data sources

No single data source provides a comprehensive picture of migration. It is therefore necessary to rely on data from a range of sources which measure different aspects of migration, define migration in different ways and cover different sections of the population – hence the potential for alternative estimates of migrant volumes and labour market impacts.

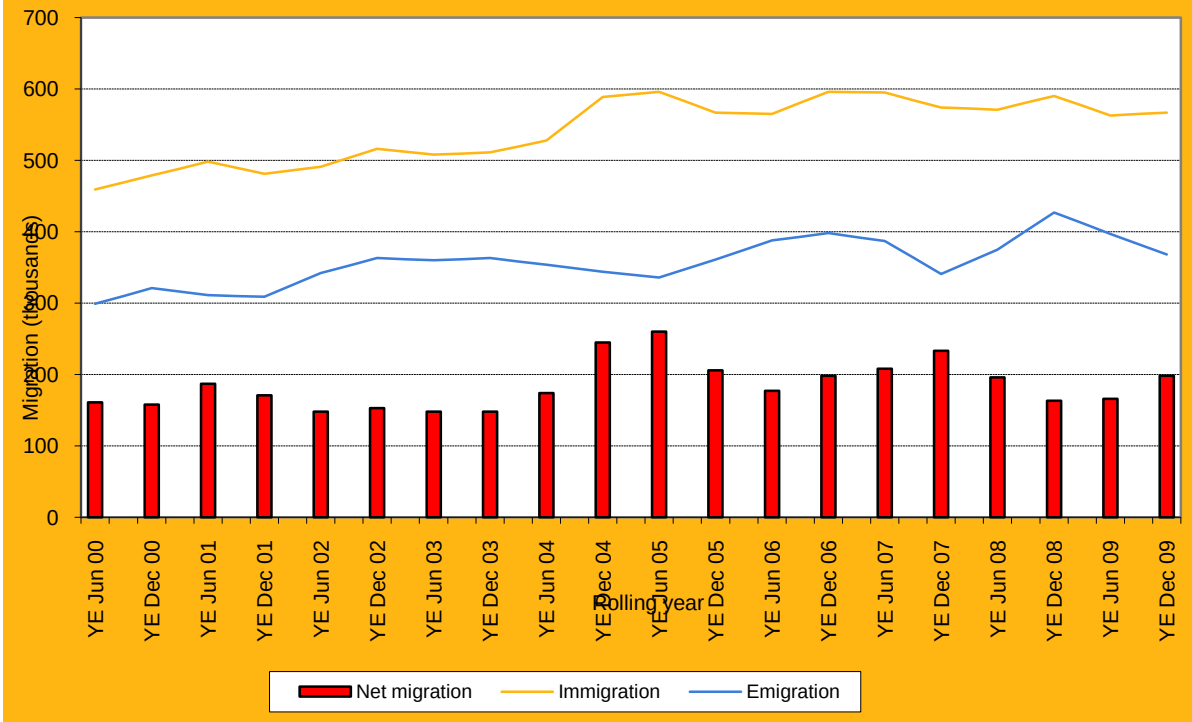
Among the information sources available are:

- Censuses and surveys (notably the ONS' *Labour Force Survey* and *Annual Population Survey*) provide detailed data on migrants resident in the UK but provide no information on emigration.
- Administrative data sources (such as National Insurance number (NINo) registrations and the Worker Registration Scheme) provide information on inward-migration for different population sub-groups (particularly in the working age population). Again, they provide no information on emigration.

This dearth of information on emigration is particularly significant given increasing policy interest in short-term migration and 'return' migration. The ONS attempts to address this deficiency in its estimates of gross and net migration flows, but these are derived from a small sample survey (the *International Passenger Survey*) of migration flows and therefore provide limited geographical or socio-economic detail on the nature of international migrants. By its very nature, 'irregular migration' (including illegal entrants and migrants who remain after their permitted period of stay) is very difficult to measure, but a recent study estimated that the numbers of irregular migrants resident in the UK are somewhere in the range of 373,000-719,000 with a central estimate of 533,000 at the end of 2007[v], up from a central estimate of 430,000 in 2001[vi]. A very large percentage of this population lives in London, and the London Mayor has commissioned studies into the impact of regularising the position of these migrants.

Most of the debate on international labour migration in the UK has focused on *immigration*. Yet *emigration* is important also – with *net migration* measuring the balance between immigration and emigration (see Figure S5.2). Over the last decade the net migration balance to the UK has been positive. In the year to December 2009 the estimate for total long-term immigration was 567,000 while the estimate for total long-term emigration was 371,000, leaving a (provisional) positive net migration balance of 196,000.[vii]

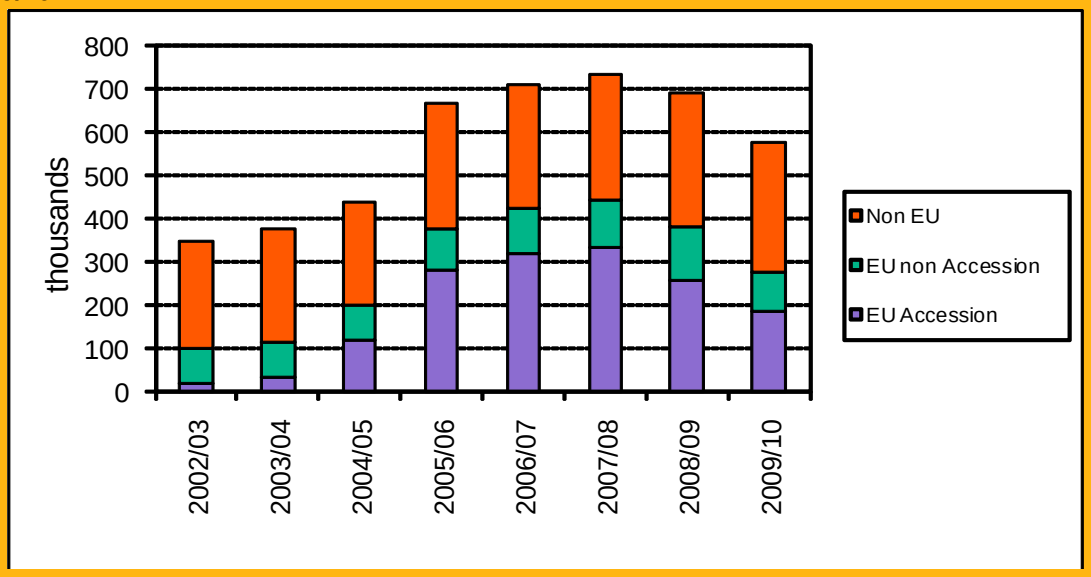
Figure S5.2 Total long-term international migration, UK, 2000-2009



Source: ONS, Long-Term International Migration (LTIM) estimates[viii]

Figure S5.2 relates to all moves – whether or not those moves are work-related. However, the foremost interest here is in international *labour* migration. Figure S5.3 shows the changing volume of international labour immigration to the UK from 2002/3 to 2009/10 using data on the total number of National Insurance number (NINo) registrations to adult overseas nationals. A substantial year-on-year increase is evident from just over 346,000 in 2002/3 to just over 733,000 in 2007/8, thereafter declining to around 573,000 in 2009/10.

Figure S5.3 NINo registrations to adult overseas nationals entering the UK, 2002/03 to 2009/10



Source: DWP, National Insurance number (NINo) allocations to adult overseas nationals[ix]

Sub-populations of migrants

As noted earlier, if we wished to distinguish between those permitted to move freely into the UK and those whose movement is 'managed', we would draw a distinction between EEA* migrants and non-EEA migrants. However, National Insurance data, on which Figure S5.3 is based, distinguishes instead between EU nationals and non-EU nationals, illustrating the point that different data sources define and delineate the concept of 'migrants' differently.

This focus on EU migrants (instead of EEA migrants) in the NINo data does allow two different categories of EU nationals to be shown, for whom the trend in inward migration to the UK differs: Accession countries and non-Accession countries. The Accession countries are the eight Eastern and Central European Member States that joined the EU in 2004 (the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia – often referred to as the 'A8') and the two that joined in 2007 (Bulgaria and Romania – sometimes referred to as the 'A2'). Collectively, these are the A10. It is clear from Figure S5.3 that EU Accession country nationals were the main driver of increase in international labour migration to the UK in the period from 2004/5 to 2007/8; and subsequently of decline thereafter. By contrast the number of overseas non-Accession EU nationals allocated NINos remained much more constant.

International labour migrants from outside the EEA are subject to a *managed migration* policy. Since 2008, work permits and an array of other work and study routes to the UK have been replaced with the phased implementation of a Points Based System (PBS). This is designed to meet UK skills needs, with an emphasis on *highly skilled* individuals to contribute to UK growth and prosperity and *skilled* workers (with a job offer) to fill specific gaps in the UK workforce. The PBS has five tiers, one of which (Tier 3 – for limited numbers

of low-skilled workers needed to fill temporary labour shortages) has been indefinitely suspended since the introduction of the PBS. The remaining four open tiers are:

- *Tier 1* – for highly skilled individuals to contribute to growth and productivity;
- *Tier 2* – for skilled workers with a job offer, to fill specific gaps in the UK workforce (in accordance with an approved shortage occupation list, largely following recommendations by the independent Migration Advisory Committee (MAC));
- *Tier 4* – for students; and
- *Tier 5* – for participants in the youth mobility scheme and temporary workers (allowed to work in the UK for a limited period to satisfy non-economic objectives).

The Coalition Government will be introducing an annual limit (or 'cap') on the number of non-EEA migrants (around half the total of adult overseas nationals NINo registrations in 2009/10) admitted to the UK to live and work from April 2011. Specifically, the General (highly skilled worker) route of Tier 1 will be closed and replaced with a new, more demanding *Exceptional Talent* route (limited to 1000 people) and Tier 2 (skilled workers with a job offer) will be limited to graduate level jobs only with an annual quota of 20,700. There will be some exemptions from the cap such as for those earning over £150,000 per annum and for most of those entering through intra-company transfers. Nevertheless, the imminent introduction of the migration cap has raised substantial concerns in some quarters about the ability of employers to obtain (some) high level skills and about retention of, and success in competition for, inward foreign investment.

Turning from the policy to the economic context, according to mainstream economic theory, migration (and subsequent return) decisions are based on individuals' rational assessments about maximising their earnings from employment over a period. In other words, an individual would move for a more lucrative job and then return once their target earnings have been achieved or economic conditions have improved in their country of origin. This suggests that migrant workers act in accordance with labour market opportunities in their origin country, the destination country and competing destination countries. The large inflows of A8 migrants to the UK in the period from 2004 to 2007 may have been due to the removal of previous entry restrictions (especially so in comparison to other EEA countries), with subsequent reductions in inflows simply reflecting the start of a levelling-off period. In line with the economic context it is interesting to note, however, that the inflows also coincided with three circumstances favouring migration from Eastern and Central Europe to the UK:

- a buoyant labour market in the UK;
- much higher unemployment rates in key migrant source countries (such as Poland) than the UK; and
- exchange rate differentials that favoured migration to the UK.

Subsequent recession in the UK has meant that the economic context has become less favourable for Eastern European labour migrants. 'Buffer theory' suggests that migrant workers will return home at a time of recession, so freeing up jobs for the local population. The trend outlined in Figure S5.3 indicates a reduction in international labour migration to the UK as economic conditions worsened. However, the likelihood of migrant workers returning home in times of recession in the UK is also influenced by economic conditions in their home countries (and in alternative destination countries). Moreover, decisions are not made solely on economic grounds; non-economic factors (e.g. learning a new language, discovering a different country, etc) are important too and social networks may perpetuate migration even when the initial triggers (e.g. economic factors) that first prompted flows decline in importance. Indeed, low levels of "happiness" and life satisfaction in the country of origin and the multitude of economic and social, rational and irrational factors associated with it has been shown to be even more highly correlated with the propensity to migrate than is GDP per capita.[x, xi] So while some economic theories suggest that a downturn in inflows to, and

outflows from, the UK might be expected in the context of recession, migration is not a 'tap' that can be turned on and off with ease.

Spatial, sectoral and occupational variations in UK immigration

In the UK migrant workers are unevenly distributed spatially and by sector and occupation. Easily the largest single geographical concentration of migrant workers is in London. There is a general tendency for new immigrants to live in areas with higher existing immigrant shares of the population, but the A8 migrants displayed a more dispersed spatial distribution than most other immigrant groups, with substantial numbers going to small towns and rural areas.[xii, xiii]

Analyses of LFS and administrative data sources reveal that relative to UK-born workers, migrant workers are concentrated in Agriculture; some parts of Manufacturing (notably Food Processing); Hotels & Restaurants; Transport, Storage and Communication; and Health and Social Work (amongst others).[xiv] Obviously, the dependence of these sectors on migrant workers varies in different parts of the UK. Occupationally, migrant employment has traditionally displayed a bi-polar distribution – i.e. migrant employment relative to employment of the UK-born has been greatest in highest and lowest skilled jobs. However, this bi-polar distribution is less apparent for more recent cohorts of migrant workers (including Accession country migrants) who have been disproportionately concentrated in less skilled occupations (working as Process, Plant and Machine Operatives and in Elementary Occupations).[xv] Many such migrants are working in jobs below their skill levels, but may be prepared to tolerate this on the expectation that such work will be temporary.

The broader labour market impacts of international labour migration are subject to ongoing analysis and debate. From a positive perspective, migration may lead to an increase in national income and may help to address skill shortages.[xvi] As such, by 'attracting talent' migration may help to generate a 'high skill equilibrium'. It has been argued that migrants can enhance productivity by bringing new ideas and enhancing the adoption of new technologies. However, while empirical analysis has shown no consistent patterns between skills and productivity, there is robust evidence that migrants – particularly highly-skilled migrants – can play a positive role in productivity developments in 'skill intensive' industries.[xvii] This underscores the policy of taking into account human capital in selecting migrants.

From a negative perspective, there are concerns that may exacerbate a 'low skill equilibrium' as employers rely on cheap migrant labour – often prized for their 'work ethic' - to address current needs and maintain the status quo rather than seeking either to up-skill their existing workforce / other local workers or to invest in new products / processes. Use of flexible and hard working migrant workers can help employers to keep costs down, but may also rest on a constant influx of willing workers to fill low skilled and low paid jobs.[xviii, xix] Such a model may not be sustainable in the longer-term and does not contribute very much to raising GVA.

Also there have been fears about the negative consequences of international labour migration in relation to wage suppression and unemployment amongst local workers – especially if migrant workers substitute for, rather than complement, local workers. Studies tend to suggest that the impact of international labour migration on the labour market outcomes of local people is relatively small, but that any negative consequences are most likely to be felt by the low skilled.[xx, xxi, xxii, xxiii]

In conclusion, concepts and definitions of migrants and migrant workers vary considerably, as do data sources. However, as long as one remains cognisant of the caveats concerning the different data sources, it is possible to develop a clearer picture of international labour migration to the UK. What is most evident is that the picture is neither static nor homogeneous, with strong spatial, sectoral and occupational differences in the stock and flow of different sub-populations of migrants over time. Which economic and social factors

influence these changes and how, in turn, migrant workers contribute to the UK economy and labour market are subject to considerable ongoing research and debate, especially in the light of present changes to immigration policy.

Notes

* Switzerland, though not a member of the EU or the EEA, is linked to the EU by a series of bilateral agreements allowing free movement of Swiss nationals to the UK and other EU countries. Consequently, distinctions between "EEA and non-EEA migrants" usually include Swiss nationals in the former category.

Further Reading

Green A., Owen D. and Adam D. (2008) *A resource guide on local migration statistics*. London Government Association, London.
Migration Advisory Committee – for reports and consultations; see:
http://www.ukba.homeoffice.gov.uk/aboutus/workingwithus/indbodies/mac/

References: see Bibliography.

5.4 International evidence on skills

5.4.1 International comparison of outcomes

This and the next section focus on evidence about the changing patterns of demand for and supply of skills. This begins with an overview of the international evidence, to set the position in the UK into a broader international context.

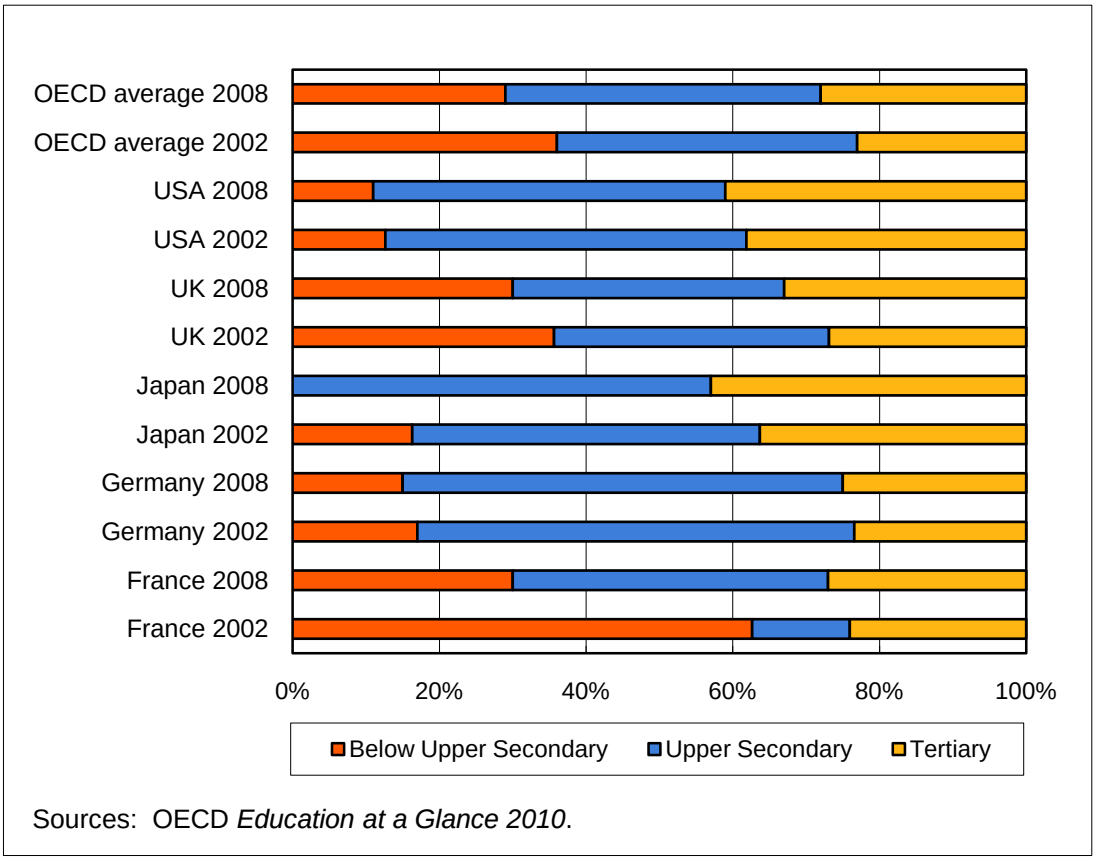
A comparison of qualification profiles highlights how the UK sits in international ranking in terms of formal qualifications attainment. OECD data enables a comparison of qualification profiles across countries on a reasonably comparable basis. Figures 5.7-5.8 show the detailed profiles for 2002 and 2008 (the latest information currently available).[48]

The proportion of adults in the UK with only low formal qualifications (without basic school leaving qualifications) has fallen between 2002 and 2008, but it remains high; around double the rate in Canada and Germany. In 2008 around 30% of people of working age in the UK did not hold upper secondary qualifications although a slightly larger proportion did have tertiary qualifications. However, these figures compared to 36% and 27% in 2002, showing that the situation has improved rapidly

[48] OECD (2005). *Education at a Glance 2005*. Available online at http://www.oecd.org/document/34/0,3746,en_2649_39263238_35289570_1_1_1_1,00.html; OECD (2010). *Education at a Glance 2010: OECD Indicators*. Available online at http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html.

While France and Ireland had a similar proportion of the adult population with low qualifications, in the USA, Japan and Germany and many other developed economies the proportions were much less in 2008. With regard to the proportion with higher level (tertiary) qualifications, the UK fares rather better but is still well below Japan, Canada and the USA. The UK continues to have a higher proportion of adults with high level qualifications compared to France and Germany. At this level, the UK compares well against the OECD mean, but it sits just above mid-table when ranked against other OECD countries.

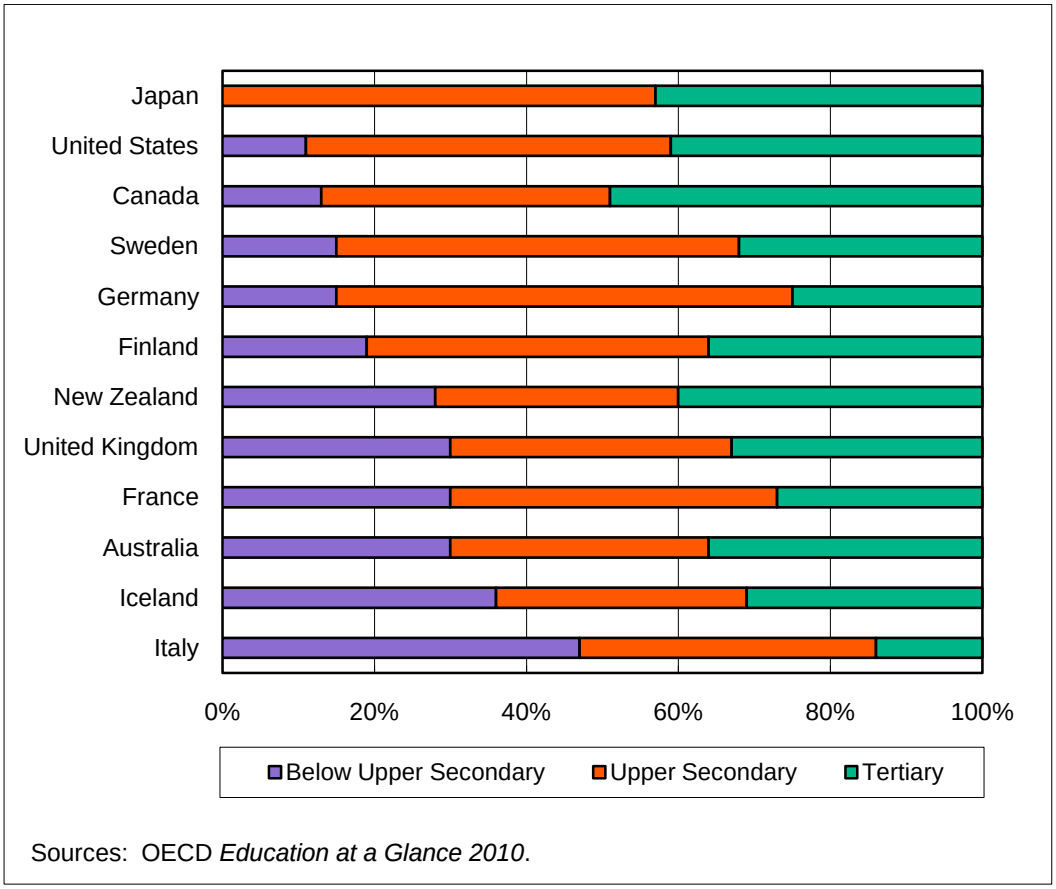
Figure 5.7: Changes in international comparisons of qualification profiles



Sources: OECD *Education at a Glance 2010*.

Statlink: http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html.
Datalink: https://almanac.ukces.org.uk/Skills/D1/D1.1_UK_Working_Age_Population_by_Qualification_Level.xls.

Figure 5.8: International comparisons of qualification profiles, 2008



Sources: OECD *Education at a Glance 2010*.

Statlink: http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html.
Datalink: https://almanac.ukces.org.uk/Skills/D1/D1.1_UK_Working_Age_Population_by_Qualification_Level.xls.

5.5 Further skills measures

5.5.1 Skills mismatches, imbalances and deficiencies

There are concerns that the supply of skills does not always match what is required by employers. There are a number of indicators available of skill mismatches, imbalances and deficiencies in the UK labour market. Deficiencies in the UK's skills profile can also be considered on the basis of international comparisons of qualifications profiles as summarised earlier.

The focus here is on UK employers' perceptions of skill shortages in the external labour market, and of internal skill gaps within their current workforce. Box 5.3 sets out the main ways in which these have been characterised and measured, based on the practice in England.

Separate skills surveys of employers have been undertaken in each of the constituent countries within the UK. The most recent is the 2009 *National Employer Skills Survey in*

England (NESS).[49]. Within Scotland and Northern Ireland the last employer skills surveys were undertaken in 2008, and in Wales it was 2005[50,51]

Box 5.1: Measurement of skills deficiencies

The main measures used to assess reported skills deficiencies in the skills surveys across the UK (NESS in England, SESS in Scotland, NISMS in Northern Ireland and Future Skills Wales in Wales are *skill-shortage vacancies* (SSVs) and *skills gaps*. SSVs are vacancies that are hard to fill for skills-related reasons, such as a lack of experience or lack of qualifications held by the available pool of labour.

Skills gaps relate to a lack of proficiency in the existing workforce. These exist when the employer indicates that staff at the establishment are not fully proficient at their jobs. The employer surveys record only whether staff are fully proficient or not, without probing into the extent or depth of the skills gap.

The *Leitch Review* emphasised that such reports of skills deficiencies should not be regarded as indicators of employer demand for skills *per se*. These measures are products of the way employers recruit and use skills in the workplace, and do not show the full extent of demand for skills.

In addition to perceived skills gaps some employers may also suffer from "latent skill gaps" (Bosworth *et al*., 2004). Such gaps exist where employers do not recognise the skills they need to sustain their businesses in the long term.

Looking at estimated levels of skill shortages and skill gaps:

- The 2009 *National Employer Skills Survey for England* (UKCES, 2010) indicated that there were just 63,000 skill-shortage vacancies (SSVs) in England as a whole. This represents around 3% of English employers reporting SSVs. Not surprisingly, given the recession, these figures were down sharply compared to 2007, when the corresponding estimates were 130,000 SSVs from around 5% of employers. Around 5% of Scottish establishments reported SSVs in 2008 (Futureskills Scotland, 2009)[52]. The proportion of establishments reporting such SSVs within Northern Ireland in 2008 and Wales in 2005 was 3% and 4% of establishments respectively (DELNI, 2009[53]; Future Skills Wales, 2006[54]).
- Skills gaps are also reported in all four UK countries. Employers in England indicated that in 2009 the proportion of them experiencing such problems was 19%, up from 15% in 2007. In the 2007 survey around 1.4 million employees were not fully proficient, accounting for some 6% of total employment: in 2009, this was 1.7 million, or 7% of

[49] UKCES (2010). *National Employer Skills Survey for England 2009*. Available online at: https://ness.ukces.org.uk/NESS09/default.aspx

[50] Significant progress has been made over the last few years in the conduct of employer surveys, with increasing co-ordination of surveys within nations and reduction of duplication of effort across agencies in the conduct of surveys. There has also been progress in the harmonisation of questions and method across the nations in the employer skills surveys, although this has not been matched by harmonisation of the surveys as a whole, including timing, making it difficult to provide UK assessments, or to facilitate benchmarking within the UK.

[51] Although we reference the 2008 *Northern Ireland Skills Monitoring Survey* in this section, the data are not included in the 2010 workbooks as the survey had only just been published prior to going to print.

[52] Futureskills Scotland (2009). *Skills in Scotland 2008*. Available online at: http://www.scotland.gov.uk/Resource/Doc/263613/0078884.pdf

[53] DELNI (2009). *The Northern Ireland Skills Monitoring Survey 2008 Main Report*. Available online at: http://www.delni.gov.uk/nisms08_final_main_report.pdf.pdf.

[54] Future Skills Wales (2006). *Future Skills Wales 2005 Sector Skills Survey – Main Report*. Available online at: http://www.learningobservatory.com/uploads/publications/436.pdf

total employment. Skills gaps as a percentage of employment in Scotland and Northern Ireland were both slightly higher at 8% in 2008 (Futureskills Scotland, 2009; DELNI, 2009). All of the National Employer Skills Surveys (England) suggest that internal skills gaps are more significant, in terms both of numbers of employers and numbers of individuals affected than external recruitment problems as reflected in SSVs.

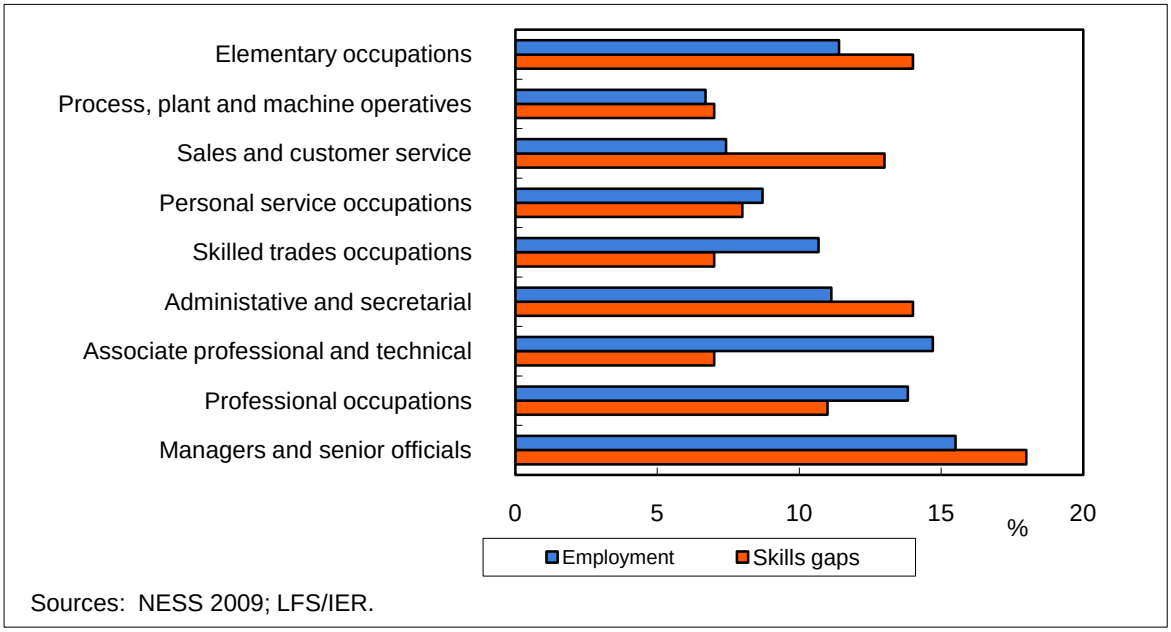
Problems with regard to skills mismatch (in the form of skills gaps and SSVs) vary by occupation. There is a distinction to be drawn between the absolute numbers of jobs affected by skills deficiencies and their density: the former may be large but because there may be large numbers employed in that occupation the relative density may be less. Looking at each skill gaps and shortages within England we can see that:

- The highest numbers of SSVs occur for Associate Professional and Technical occupations, but the highest SSV densities are for Professional occupations and Skilled Trades;
- Relatively high numbers of SSVs were also reported for Personal Service Occupations in 2009. However all of these were (not surprisingly) well down on values reported in earlier surveys.
- The highest numbers of skills gaps are for Sales and Customer Service Occupations and Elementary occupations, which also have the highest density of skills gaps.
- Skills gaps are reported by around 1 in 5 establishments.
- In 2009, SEMTA and People 1st reported the highest proportions (around 1 in 4) of firms with skills gaps. In contrast in Creative and Cultural Skills only 1 in 10 establishments reported problems.
- As a proportion of employment skills gaps generally only affected about 7% of the total (in Skills for Justice this was just 3%).

Data from the *Northern Ireland Skills Monitoring Survey* (DELNI, 2009) highlights a similar pattern in (skills gaps) for Sales and Customer Service Occupations and Elementary Occupations.

Some of these difficulties persist over time, but in many cases the problems appear to be more ephemeral and transitory. Where problems do persist this often reflects lack of market adjustment (parts of the public sector) or the perception that these are jobs in areas of declining employment, with relatively poor long-term prospects.

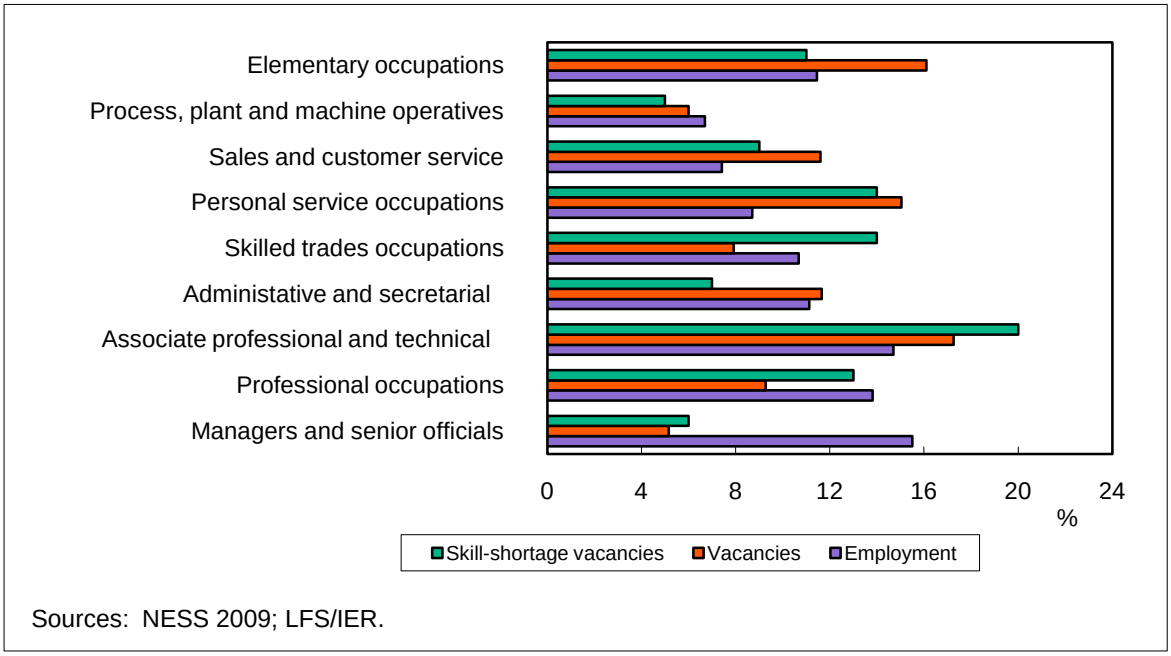
Figure 5.9: Shares of Skills Gaps and Employment by Occupation, England 2009



Sources: NESS 2009; LFS/IER.

Statlink: http://nessdata.ukces.org.uk/ness/home/home.asp ; http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D4/D4.6_Skills_gaps_England_by_SSC.xls.

Figure 5.10: Skill-shortage vacancies by occupation, England 2009



Sources: NESS 2009; LFS/IER.

Statlink: http://nessdata.ukces.org.uk/ness/home/home.asp ; http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D4

For some occupations, such as Administrative and Secretarial, Sales and Customer Service Occupations, there are above-average shares of unfilled vacancies relative to share of employment but a relatively low level of SSVs. This may indicate problems of retention and high labour turnover rather than shortages of skills.

Shares of SSVs by occupation vary between SSCs, reflecting their different occupational employment structures. For SSCs like Automotive Skills and Construction Skills the main problems are for Skilled Trades, whereas for SSCs like Creative and Cultural Skills and for the Financial Services Skills Council the problems are more for the Associate Professional and Technical Occupations. Others have problems in other areas (e.g. Asset skills (Elementary Occupations); Skills for Care and Development (Personal Service Occupations); and SEMTA (Professional Occupations).

The largest share of skill gaps by occupation is to be found in the Sales and Customer Service occupational group. Significant shares also arise amongst: Managers and Senior Officials; Administrative and Secretarial Occupations; and Elementary Occupations.

The employer skills surveys also highlight the generic and other skills which employers report as lacking in both the existing workforce and in the external market. Figure 5.11 indicates that team-working, customer handling and communication and problem solving are all important, but technical and practical skills remain the most significant category within England. These patterns do, however, vary systematically by occupation.

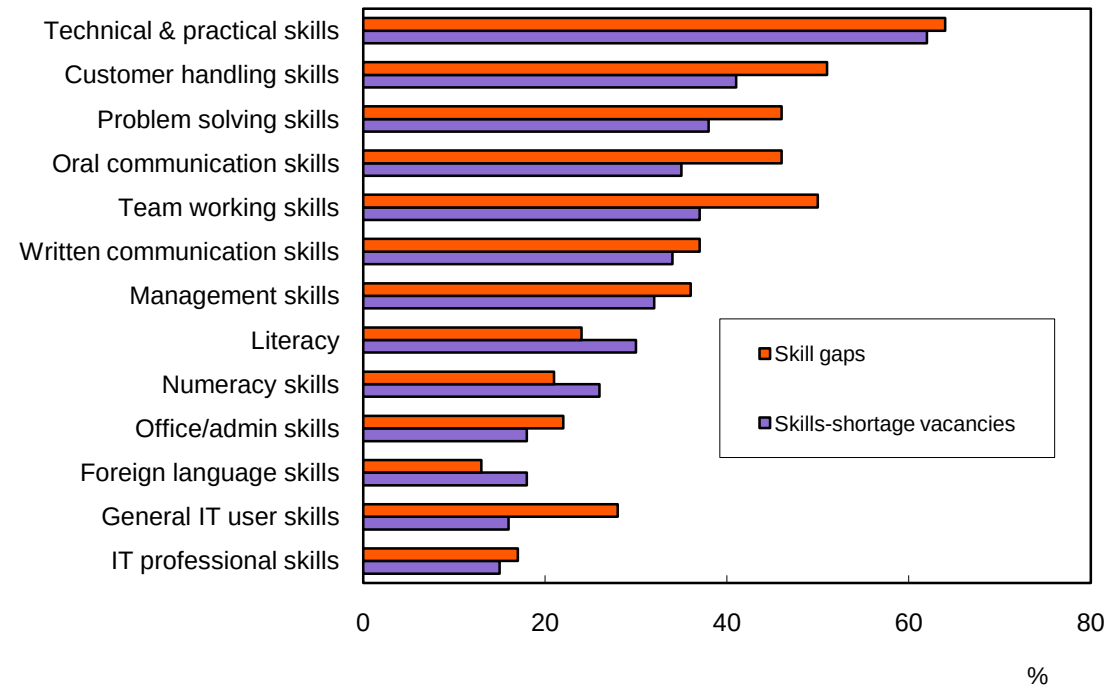
When asked about the skills that are difficult to obtain where there are skill shortage vacancies, employers responses are dominated by references to technical, practical or job specific skills (reported in almost two thirds of cases). However, customer handling skills, communication skills, problem solving skills and management skills are also reported in about one third of cases. These patterns vary only slightly across SSCs and where differences do arise they tend to reflect their occupational employment structures.

There are similar responses when asked about the skills lacking where there are skill gaps, although generally these are somewhat higher than the percentages reported for SSVs.

There are some differences between occupations. For example, management skills are most reported as a problem for the corresponding occupational category; customer handling and oral communication skills are especially important for Personal Service Occupations and Sales and Customer Services Occupations.

Figure 5.12 shows how these patterns vary across sectors (here measured using footprints for SSCs). Some sectors report a significantly greater share of SSVs than their share of employment (for example, SEMTA and Financial Services Skills Council). This is largely driven by their occupational structures. The concentration of problems in sectors such as engineering and finance reflects their strong dependence on technical occupations.

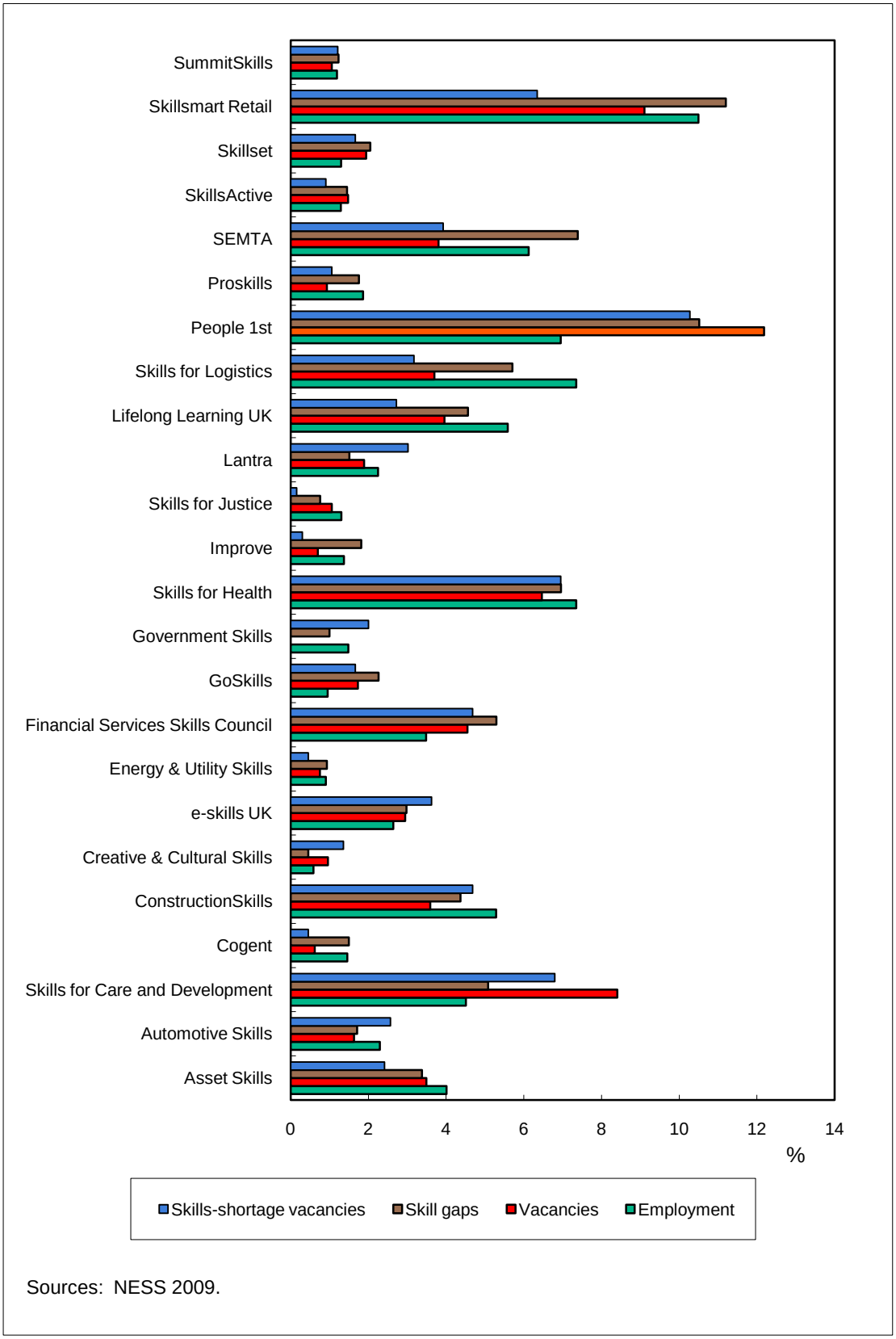
Figure 5.11: Skills lacking in connection with skills gaps and shortage vacancies, England 2009



Sources: NESS 2009.

Statlink: http://nessdata.ukces.org.uk/ness/home/home.asp.
Datalink:
https://almanac.ukces.org.uk/Skills/D4/D4.1_Skills_Shortages_Vacancies_by_UK_Nation_English_Region.xls.

Figure 5.12: Share of employment, vacancies, and SSVs by sector skills council, 2009



Sources: NESS 2009.

Statlink: http://nessdata.ukces.org.uk/ness/home/home.asp.
Datalink: https://almanac.ukces.org.uk/Skills/D4/D4.2_England_Skills_Shortages_by_SSC.xls.

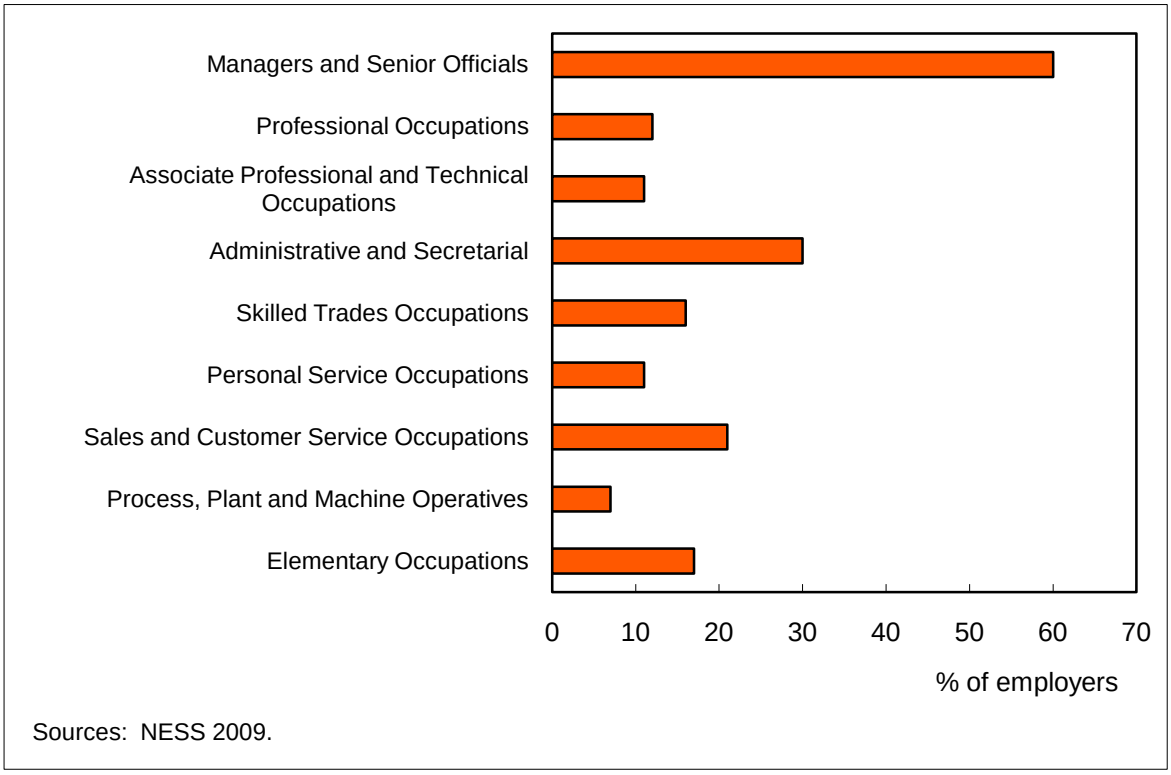
5.5.2 Training activity

Training activity contributes to the supply of skills. The focus here is on the efforts of employers to train those in the workplace, through both on-the-job and off-the-job training.

Data from the NESS for England show that, overall, two-thirds of employers provided training in the previous 12 months. Training activity increases markedly with size of firm: over nine out of 10 employers with more than 25 employees had funded training compared to 55% of the smallest establishments (i.e. those with fewer than 5 employees).

Employers are more likely to offer on-the-job training than off-the-job training; in England in 2009, 51% of employers funded or arranged off-the-job training compared with 55% for on-the-job training. The gap was twice as wide in 2007, when 46% of employers funded or arranged off-the-job training.

Figure 5.13: Training by occupation, England 2009



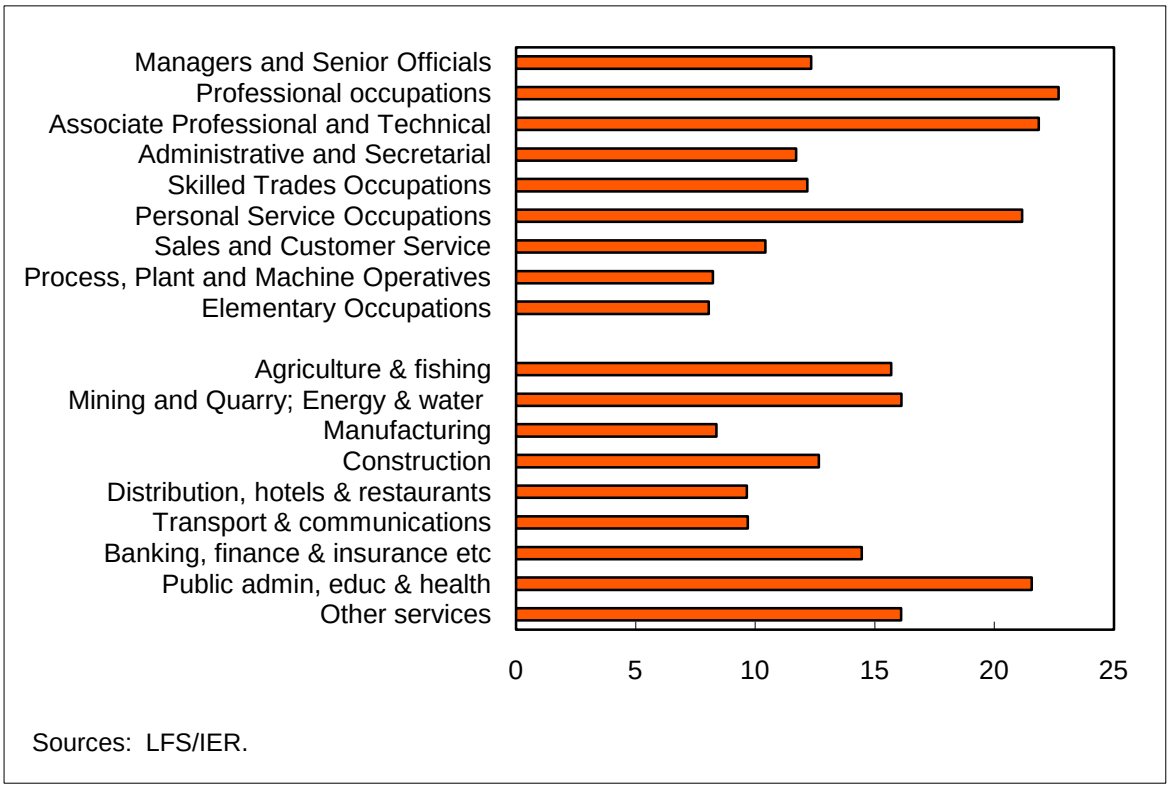
Statlink: http://nessdata.ukces.org.uk/ness/home/home.asp.
Datalink:
https://almanac.ukces.org.uk/Skills/D3/D3.6_Employer_Provided_Training_by_UK_Nation_Sector_SSC.xls.

Figure 5.13 shows that employers focus considerably more training activity on Managers and Senior Officials. Around a third of employers invest in training in Administrative and Secretarial staff, but several other occupations that cut across the qualifications spectrum are much less likely to receive training. The occupations least likely to receive training are Process, Plant and Machine Operatives, with just 7% of employers funding or providing training for this occupational group.

LFS data for 2009 show that around 13% of all employees had received training in the last 4 weeks (see Figure 5.14)

Those occupations in which the largest proportions of employees received training were Professional occupations (23% of employees), Associate Professional and Technical occupations (25%), and Personal Service occupations (21%).

Figure 5.14: Training activity by occupation and sector, UK 2009



Sources: LFS/IER.

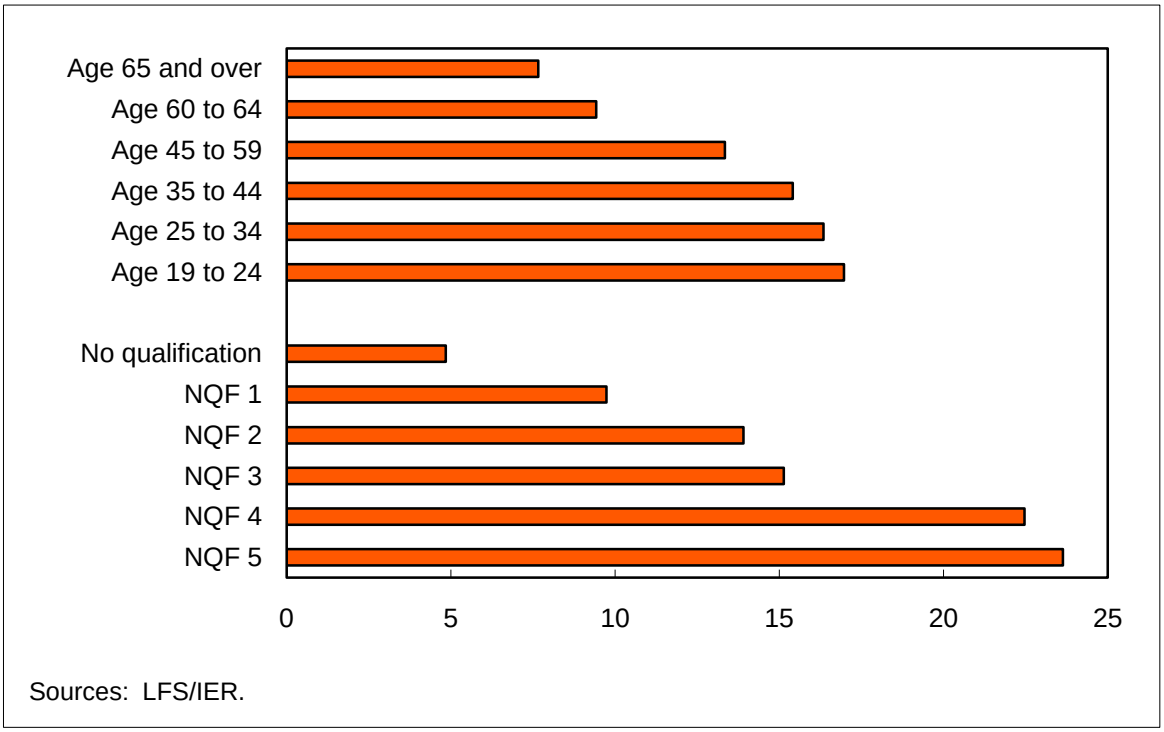
Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink:
https://almanac.ukces.org.uk/Skills/D3/D3.3_Employees_Receiving_Training_4_13_Weeks_by_Occupation.xls.

This occupational pattern is reflected in the training activity of industry sectors where the largest proportions of employees that received training were in the public sector (22%) and other services (16%), both of which have a relatively large share of Personal Service occupations. The large share of Professional occupations, Associate Professional and Technical occupations also helps to explain why a large proportion of employees received recent training in the public sector, and in financial services (15%).

Those with low qualifications are much less likely to receive training than more highly-qualified employees. Almost a quarter of employees with at least a Level 4 qualification had received training from their employer in the last four weeks. This compared with only 10% of those with a Level 1 qualification and below 5% of those with no qualifications.

Of the more than 3½ million workers that had received training in the last 4 weeks (in 2009), almost 2 million were aged 35-59. However, when expressed as a proportion of employees, there is a clear pattern that younger workers are more likely to have received training (Figure 5.15).

Figure 5.15: Training activity by highest qualification and age, UK, 2009



Sources: LFS/IER.

Statlink: http://www.esds.ac.uk/Government/lfs/.
Datalink: https://almanac.ukces.org.uk/Skills/D3/D3.4_Employees_Receiving_Training_4_13_Weeks_by_Gender_Age_Ethnicity.xls.

It is worth noting that only about a fifth of this training activity is designed to lead to awards and nationally recognised qualifications – so although there clearly are skills needs being addressed by this training activity it may not necessarily lead to a proportionate increase in qualification attainment.

6 Inequality

Inequality Chapter Summary

Income inequality in the UK has been increasing over the last 30 years. The UK has a much more unequal income distribution than most of the other EU countries, and slightly more unequal than the OECD average.

The percentage of the working-age population in employment is much higher in the UK than in much of the EU, but well below that in most northern European countries. It is similar to the proportion in the United States. The current recession has resulted in a sharp fall in the employment rate (in common with a number of other countries) but it remains 5-6 percentage points above the OECD average.

The UK population has increased rapidly in recent years. Net international migration has been high during this period and the UK has gained population through net immigration in the younger economically active age range.

Participation in higher education has increased steadily over the last decade. More than half of young women now undertake higher education, but the increase has been much slower for young men.

Economic activity rates are higher for men than women, but the differential is narrowing. Participation rates for young people have fallen slightly, while those for older people have increased slightly. Recession conditions since 2008 have depressed economic activity rates more for young people and men than for older people and women.

Employment rates are also higher for men than women, and are highest in the 35-49 age range. The percentage in employment remains lower for ethnic minorities than for white population, but there is slow convergence in employment rates. The recession has resulted in a fall in employment rates for young people and some minority ethnic groups. Unemployment rates tend to decline with age, and are higher for men than women. Unemployment rates for ethnic minorities as a whole are still at least twice those for the white population. The relative position of some ethnic groups has improved, but the unemployment rate for the black population has increased sharply during the current recession.

Earnings tend to increase with age, peaking between the ages of 40 and 49, showing a decline again for workers above this age. Average weekly wages have increased strongly since 1997 for people aged over 30, but wages for younger people have increased much more slowly.

6.1 Introduction

Success in improving employment and productivity outcomes will depend to some extent on reducing the inequality of labour market outcomes (e.g. by increasing the labour market participation of disadvantaged groups). Equality refers to the level of fairness or disparity in access to opportunities or material circumstances, such as income, health or quality of life, or in future life chances. Here the focus is on national level data for disadvantaged sections of the population. The dimensions of concern may be disadvantaged groups (e.g. ethnicity, disability, age, etc) or disadvantaged local areas.

The Equality and Human Rights Commission suggests the need to focus attention on the range and dispersion of a number of key indicators across the following sections of the population: gender; age; ethnicity; disability; faith/religion; sexual orientation/transgender;

and social class. A number of indicators, e.g. employment and unemployment rates, are readily measured on the basis of gender, age and ethnicity (and are used in the definition of social class) but the other sections are difficult to measure and result in gaps in the evidence base.

6.2 International evidence on inequality

The comparative international position of the UK in terms of income distribution and the probability of being in work is summarised here and in Tables 6.1 and 6.2 below. The OECD data shows:

- Income inequality tends to be lower in countries with redistributive tax systems, and higher where the labour market is more polarized. Countries where the free market is least restrained tend to have the highest inequality. Income inequality may be regarded as indicative of a society with less potential for social mobility and a more unequal distribution of educational opportunities.

Table 6.1 International income inequality

Income distribution: Gini coefficient for income (after taxes and transfers) in the working age population

Country	mid-70s	mid-80s	around 1990	mid-90s	around 2000	mid-2000s
Australia				0.31	0.32	0.3
Austria		0.24		0.24	0.25	0.27
Belgium		0.27		0.29	0.29	0.27
Canada	0.29	0.29		0.28	0.3	0.32
Czech Republic			0.23	0.26	0.26	0.27
Denmark		0.22	0.23	0.21	0.23	0.23
Finland	0.23	0.21		0.23	0.26	0.27
France		0.31	0.3	0.28	0.28	0.28
Germany		0.26	0.26	0.27	0.27	0.3
Greece	0.41	0.34		0.34	0.34	0.32
Hungary			0.27	0.29	0.29	0.29
Iceland						0.28
Ireland		0.33		0.32	0.3	0.33
Italy		0.31	0.3	0.35	0.34	0.35
Japan		0.3		0.32	0.34	0.32
Korea						0.31
Luxembourg		0.25		0.26	0.26	0.26
Mexico		0.45		0.52	0.51	0.47
Netherlands	0.25	0.26	0.28	0.28	0.28	0.27
New Zealand		0.27	0.32	0.34	0.34	0.34
Norway		0.23		0.26	0.26	0.28
Poland					0.32	0.37
Portugal	0.35		0.33	0.36	0.36	0.38
Slovak Republic						0.27
Spain		0.37	0.34	0.34	0.34	0.32
Sweden	0.21	0.2	0.21	0.21	0.24	0.23
Switzerland					0.28	0.28
Turkey		0.43		0.49		0.43
United Kingdom	0.28	0.33	0.37	0.35	0.37	0.34
United States	0.32	0.34	0.35	0.36	0.36	0.38
OECD Total						0.31

Sources: OECD.
Statlink: http://stats.oecd.org/Index.aspx?DataSetCode=INEQUALITY.
Datalink: https://almanac.ukces.org.uk/inequality/E1/E1.1_International_Income_Distribution.xls

- Looking over the last 30 years income inequality increased over this period in most countries, but declined slightly in France, Greece and Ireland. The Scandinavian countries stand out as having the most equal income distribution (indicated by the lowest Gini coefficients) throughout this period. In contrast, Turkey and Mexico display the highest levels of income inequality.

- Income inequality in the UK was lowest in the mid-1970s and increased from the 1980s to a maximum at around the year 2000, before reducing slightly by the mid-2000s. A similar pattern is displayed by countries like New Zealand who also adopted neo-liberal (radical free market) economic policies over this period.
- The UK's level of income inequality is higher than that of most other EU countries, Japan and the OECD average, but slightly lower than that of the United States, where inequality has consistently been higher, and increased after 2000.

Table 6.2 Gini coefficients for EU Member States

Country	2005	2006	2007	2008	2009
Belgium	0.28	0.28	0.26	0.28	0.26
Bulgaria	0.25	0.31	0.35	0.36	0.33
Czech Republic	0.26	0.25	0.25	0.25	0.25
Denmark	0.24	0.24	0.25	0.25	0.27
Germany	0.26	0.27	0.30	0.30	0.29
Estonia	0.34	0.33	0.33	0.31	0.31
Ireland	0.32	0.32	0.31	0.30	0.29
Greece	0.33	0.34	0.34	0.33	0.33
Spain	0.32	0.31	0.31	0.31	0.32
France	0.28	0.27	0.27	0.29	0.30
Italy	0.33	0.32	0.32	0.31	0.32
Cyprus	0.29	0.29	0.30	0.28	0.28
Latvia	0.36	0.39	0.35	0.38	0.37
Lithuania	0.36	0.35	0.34	0.34	0.36
Luxembourg	0.27	0.28	0.27	0.28	0.29
Hungary	0.28	0.33	0.26	0.25	0.25
Malta	0.27	0.27	0.26	0.27	0.28
Netherlands	0.27	0.26	0.28	0.28	0.27
Austria	0.26	0.25	0.26	0.26	0.26
Poland	0.36	0.33	0.32	0.32	0.31
Portugal	0.38	0.38	0.37	0.36	0.35
Romania	0.31	0.33	0.38	0.36	0.35
Slovenia	0.24	0.24	0.23	0.23	0.23
Slovakia	0.26	0.28	0.25	0.24	0.25
Finland	0.26	0.26	0.26	0.26	0.26
Sweden	0.23	0.24	0.23	0.24	0.25
United Kingdom	0.35	0.33	0.33	0.34	0.32

Sources: Eurostat.
Statlink:
http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/data/database.
Datalink: https://almanac.ukces.org.uk/inequality/E1/E1.1_International_Income_Distribution.xls.

More recent trends at the EU level can be seen in the table above. This indicates that the level of income inequality in the UK fell slightly between 2005 and 2009. It increased in 2008, only to fall back again in 2009; so overall, income inequality in the UK fell during the recession. In comparison, income inequality has risen slightly in Germany and France between 2005 and 2009. Nevertheless, income inequality in the UK remains high compared to some of its EU neighbours, most notably the Scandinavian countries, smaller countries such as Austria, Belgium and the Netherlands, and some of the newer Member States from eastern Europe.

6.3 UK evidence on inequality

This chapter examines trends over time in patterns of inequality in the labour market, focusing in particular on three dimensions of interest: gender, age and ethnic group. These encompass groups of people who have historically been marginalised in UK society as a whole and in the labour market. UK and EU legislation has been introduced to combat discrimination on these dimensions.

6.3.1 Population

The demographic balance of the UK population is changing rapidly. The population of the UK was estimated to be 61.8 million on June 30th 2009 (Table 6.3), with the recent population increase driven by sustained historically high levels of net international immigration and high birth rates. Current projections of the national population assume that fertility and migration will remain high, leading to the population reaching 70.9 million in 2031. In addition, the ethnic balance of the population has changed very greatly in recent years, with substantial growth of the ethnic minority population (of which international migration and the relatively high fertility of migrants are the main drivers).

- The UK population is ageing (see Table 6.3). The percentage of the population aged under 24 declined from 36.6% in 1981 to 30.8% in 2009. The percentage aged 60 and over has increased slightly since the early 1980s, from 20.2% in 1981 to 22.4% in 2009. The largest component of population ageing has been of people aged 35 to 44 and those aged 45 to 59. The percentage aged 35 to 59 increased from 28.9% in 1981 to 33.9% in 2009.
- Overall, the population increased by 4.5% between 2001 and 2009, the rate of increase being faster for males than females. Even so, two age groups lost population between 2001 and 2009: the number of 25 to 34 year olds declined by half a million (-5.7%), while the number of 0 to 15 year olds declined by 2.6%. The most rapid population increases during this period were for 60 to 64 year olds (29%) and 16 to 24 year olds (14.8%).

Table 6.3: Population trends in the UK 1981-2009

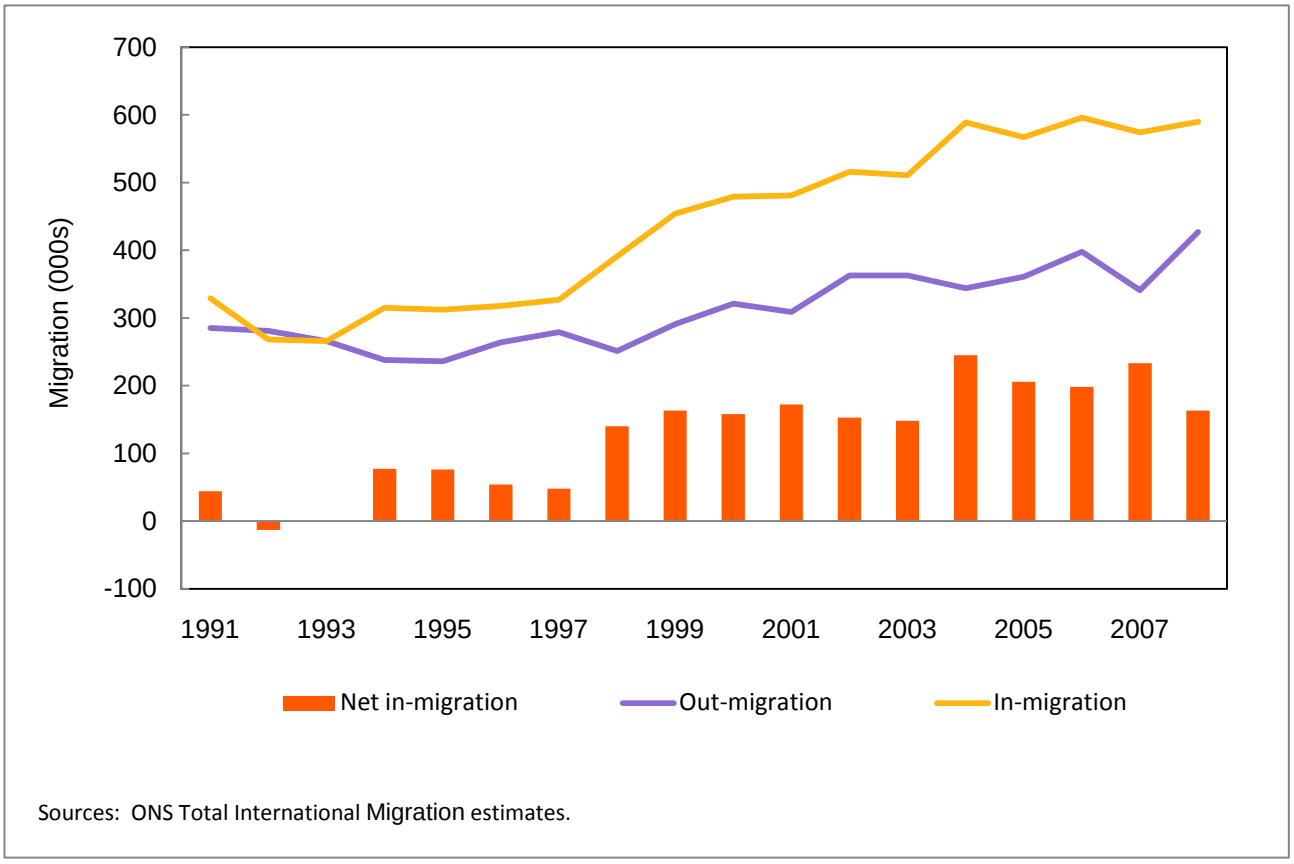
Population sub-group	Population (000s)			Share of population (%)			% change 2001-9
	1981	2001	2009	1981	2001	2009	
All	56,357	59,114	61,792	100.0	100.0	100.0	4.5
Male	27,412	28,832	30,374	48.6	48.8	49.2	5.3
Female	28,946	30,281	31,418	51.4	51.2	50.8	3.8
All	56,357	59,113	61,792.0	100.0	100.0	100.0	4.5
0 to 15	12,352	11,863	11,549.1	21.9	20.1	18.7	-2.6
16 to 24	8,271	6,504	7,466.9	14.7	11.0	12.1	14.8
25 to 34	8,010	8,475	7,993.3	14.2	14.3	12.9	-5.7
35 to 44	6,774	8,846	9,012.0	12.0	15.0	14.6	1.9
45 to 59	9,540	11,168	11,945.7	16.9	18.9	19.3	7.0
60 to 64	2,935	2,884	3,719.1	5.2	4.9	6.0	29.0
65 and over	8,476	9,373	10,105.8	15.0	15.9	16.4	7.8
Aged 16-64	35,530	37,878	40,137.0	63.0	64.1	65.0	6.0

Sources: ONS.
Statlink: http://www.statistics.gov.uk/downloads/theme_population/mid-09-uk-eng-wales-scot-northern-ireland-24-06-10.zip.
Datalink: https://almanac.ukces.org.uk/context/A5/A5.4_UK_Population_by_Age_and_Gender.xls

The next section provides an overview of recent trends in international migration to the UK. The issue of migration is explored in greater detail in the Spotlight feature in chapter 5.

- The number of people migrating to the UK and the number leaving for another country were broadly similar (around 300,000 pa) until 1997 (Figure 6.1). While the numbers of both immigrants and emigrants increased after that date, the increase in in-migration was faster. Hence, net in-migration increased from around 50,000 pa in the mid-1990s to over 150,000 pa for much of the period since then, approaching 250,000 pa following EU expansion in 2004. The current recession has resulted in a fall in both gross and net immigration.

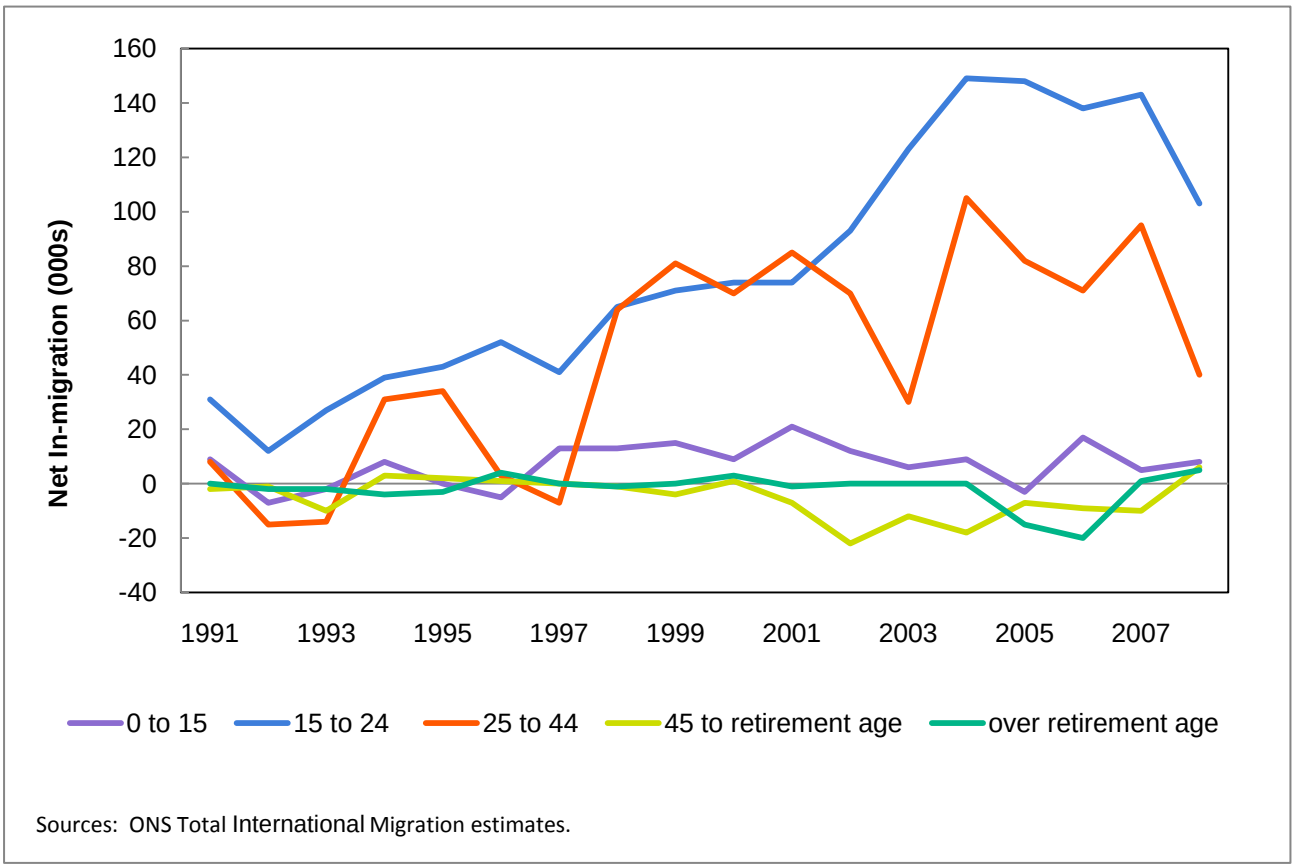
Figure 6.1: Trends in International Migration to the UK, 1991-2008



Sources: ONS Total International Migration estimates.

Statlink: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=507.
Datalink: https://almanac.ukces.org.uk/context/A5/A5.5_UK_Migration_Inflow_and_Outflow.xls

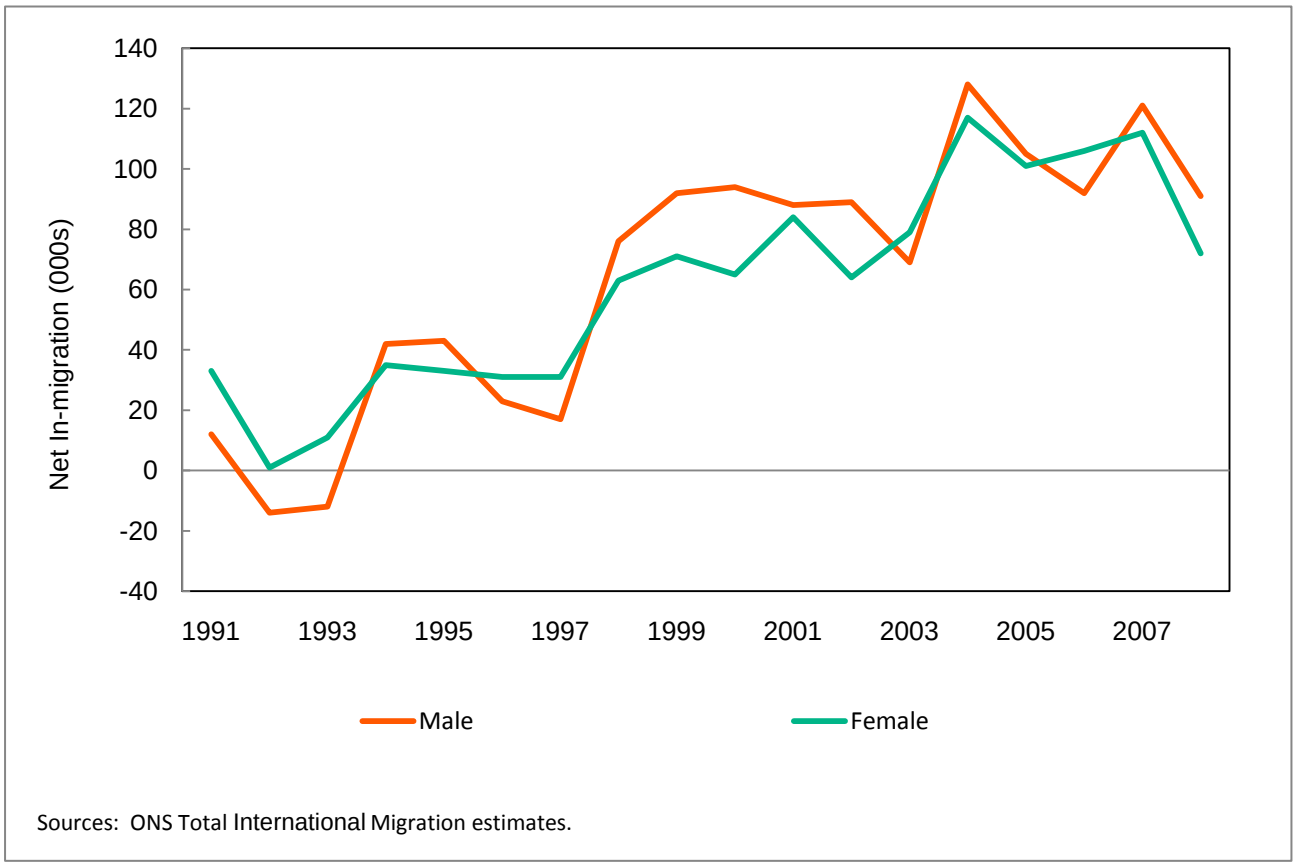
Figure 6.2: Net International Migration to the UK by age group, 1991-2008



Sources: ONS Total International Migration estimates.

Statlink: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=507.
Datalink: https://almanac.ukces.org.uk/context/A5/A5.5_UK_Migration_Inflow_and_Outflow.xls

Figure 6.3: Net International Migration to the UK by gender, 1991-2008



Sources: ONS Total International Migration estimates.

Statlink: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=507.
Datalink: https://almanac.ukces.org.uk/context/A5/A5.5_UK_Migration_Inflow_and_Outflow.xls

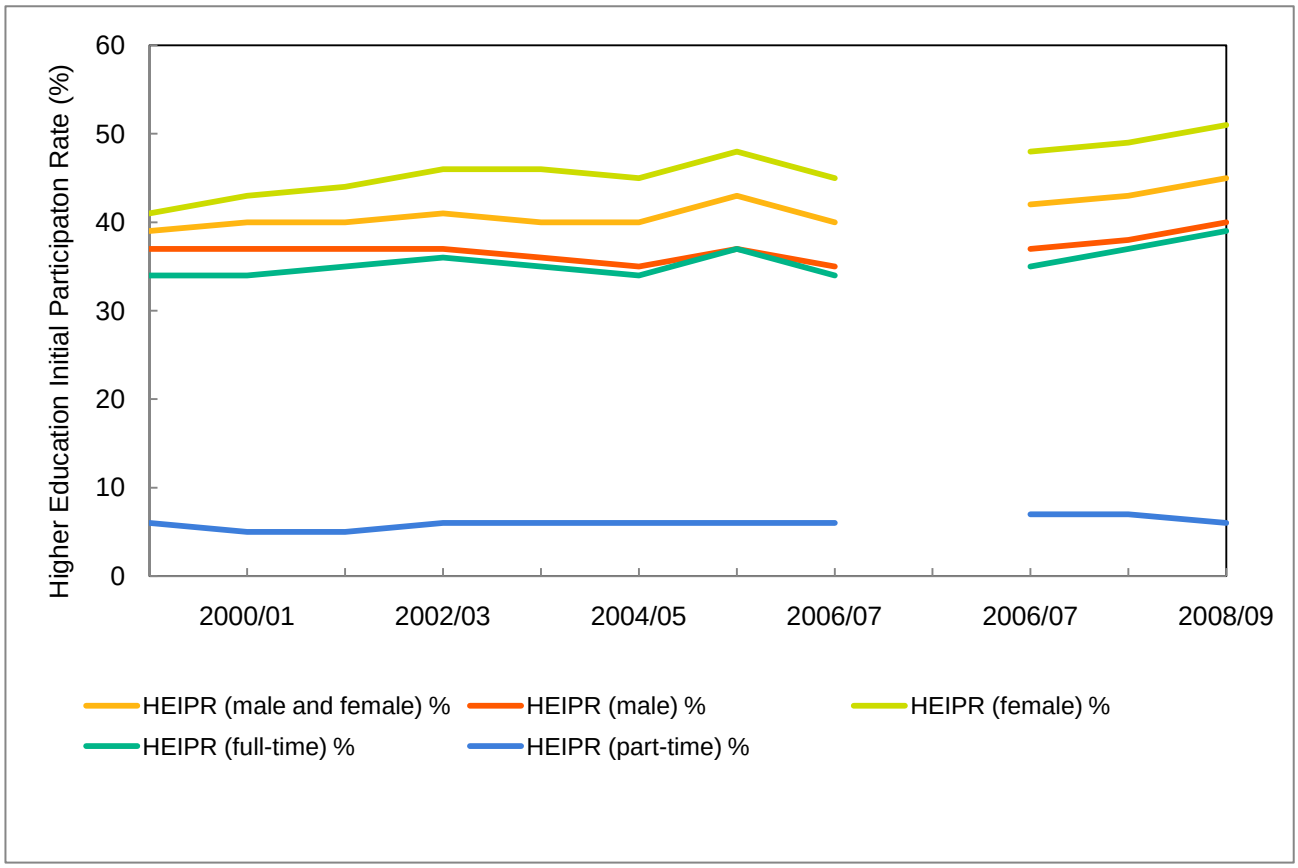
- The trend of net in-migration has been similar for males and females, with net migration for males being usually slightly greater than that for females (Figure 6.3). The number of net international migrant children (aged 0 to 15) is relatively small and there is no clear trend over time in their numbers. The UK has mainly been gaining people of younger working age (16 to 44) through migration, since there is an increasing trend towards net out-migration amongst people aged from 45 to retirement age, while the number of people of retirement age entering and leaving the UK is broadly in balance. The largest gain through net migration is for 16 to 24 year olds. Net migration of this age group has increased substantially since 1991, with the greatest acceleration from 2001 onwards, until the sharp decline during 2007-8. The net immigration of 25 to 44 year olds also increased over this period, but there were declines in 1995-7, 2002-3 and 2007-8, followed in the first two instances by a rebound.

  Data on migration and net-migration are important for helping us to understand inequality measures and to what extent changes in inequality measures are being driven by net-migration flows, as opposed to failures in the labour market.

6.3.2 Educational participation

Following the Browne Review and the 2010 Comprehensive Spending Review, the priorities are to ensure 19-24 year olds receive full funding for a first Level 2 or Level 3 qualification, and to offering every adult a Lifelong Learning Account. Investment in apprenticeships will be increased by up to £250m over the Spending Review period and, as a result, the number of adult apprenticeships available will be expanded by up to 75,000 by 2014-15, leading to more than 200,000 people starting an apprenticeship each year. Building on the recommendations of Lord Browne's Review of Higher Education Funding and Student Finance, the Spending Review announced that, from the 2012-13 academic year, universities will be able to increase graduate contributions. At the same time, a new £150m National Scholarship Fund to support students in higher education from disadvantaged backgrounds will be established.

Figure 6.4: Participation in Higher Education

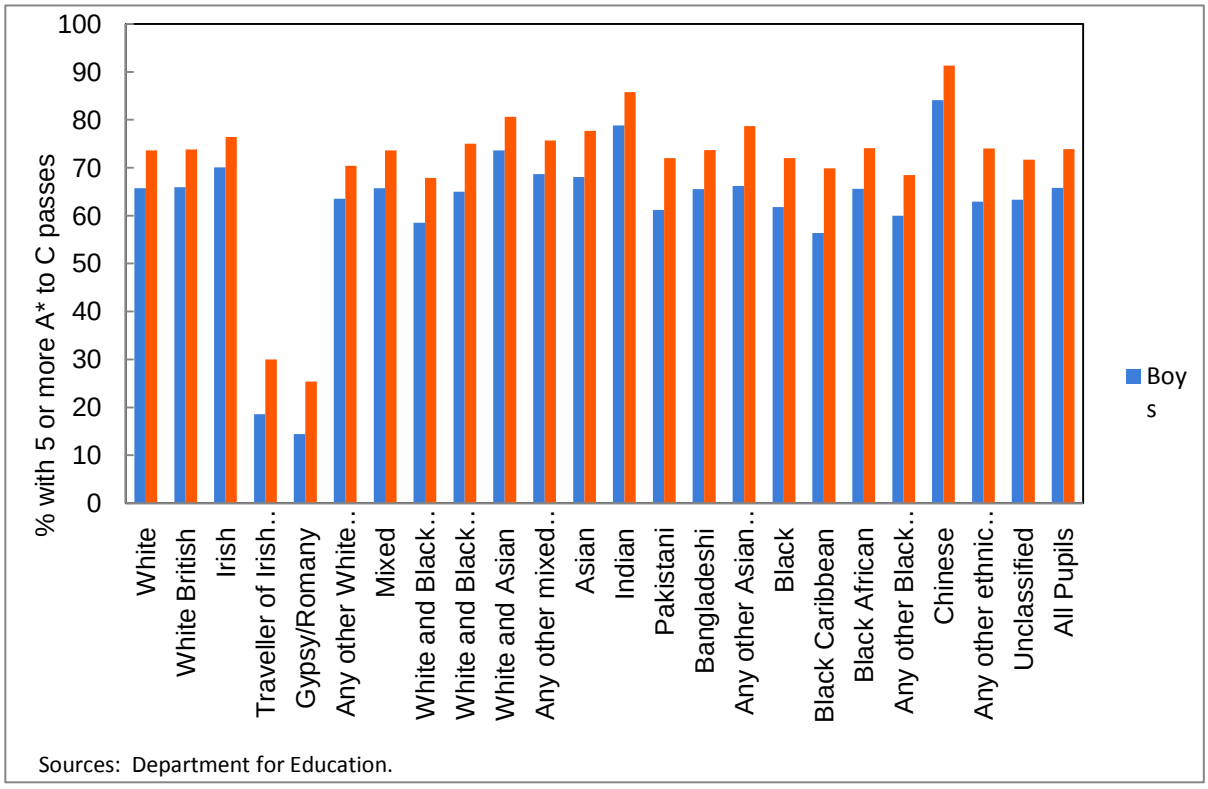


Notes: Due to a change in the underlying data, a discontinuity has been introduced at 2006/07. The latest figures (for 2006/07, 2007/08 and 2008/09) are therefore not comparable to the historical time series.
Statlink: http://www.education.gov.uk/rsgateway/DB/SFR/s000839/index.shtml.
Datalink: https://almanac.ukces.org.uk/inequality/E2/E2.3_Higher_Ed_Participation_by_Gender.xls

- The Higher Education Initial Participation Rate or HEIPR (Figure 6.4) summarises the percentage of people aged 17 to 30 who commence higher education. This rate has increased steadily from just under 40% during 1999/2000 to 45% in 2008/09. However, there is a large gender differential. For females, this ratio increased from 41% in 1999/2000 to 51% in 2008/09. However, the male rate increased from 34% to 39% over the same period, hence the gender differential widened by 5 pp over this decade. The increase in participation was faster for full-time than part-time students, and the part-time HEPIR was declining by the end of the period considered.
- Information on educational achievement is mostly produced for the individual countries of the UK, and there is therefore limited information at UK level. The Department for Education produces detailed information on educational attainment by ethnic group, and Figure 6.4 summarises GCSE achievement for England. The indicator presented is the percentage of pupils achieving 5 or more A* to C passes during 2008/9.
- There is a clear gender differential, with girls in each ethnic group being more likely to achieve 5 or more GCSE passes at A* to C. Children from the Chinese and Indian ethnic groups displayed the highest levels of achievement. Bangladeshi, Pakistani and Black-Caribbean children were less likely than white children to achieve 5 or more GCSE passes of grade A* to C. The poorest levels of achievement were displayed by Gypsies/Romanies and Travellers of Irish heritage.

Further information on the economic activity and educational participation of young people can be found in the Spotlight feature later in this chapter.

Figure 6.5: Educational achievement by ethnic group, England 2008-9



Statlink: http://www.education.gov.uk/performancetables/.
Datalink:
https://almanac.ukces.org.uk/inequality/E2/E2.1_GCSE_Attainment_by_Ethnicity_SEN_School_Meals.xls

6.3.3 Economic activity rates

Table 6.4 presents economic activity rates by gender, age group and (broad) ethnic group for 2006 to 2009. These age groups reflect the recent decision of ONS that (due to the gradual raising of state pension age for women between 2010 and 2020) from August 2010, the current working age measures will be replaced with measures based on those aged from 16 to 64 for both men and women[55].

- The percentage of men economically active is highest in the 25-34 and 35-49 year old age groups. The youngest and oldest working age groups display the lowest levels of economic activity: only around three-quarters of men in the 50-64 age group and just over half of those aged 16 to 19 are economically active.

[55] ONS (2010) Implications of the change in female state pension age for labour market statistics, *Economic & Labour Market Review*, Vol.4, No.1, pp.25-29. Available online at: http://www.statistics.gov.uk/cci/article.asp?ID=2346.

Table 6.4: Activity rates by gender, age and ethnicity

	Economic activity rate (%)			
	2006	**2007**	**2008**	**2009**
Males				
16-19	55.5	54.7	54.0	51.2
20-24	82.3	81.3	80.5	79.7
25-34	92.4	92.5	92.4	92.6
35-49	91.9	91.7	91.9	92.1
50-64	74.9	75.0	75.3	75.4
Aged 65 +	9.6	10.0	10.4	10.8
White	70.6	70.4	70.3	70.1
Mixed parentage	76.6	72.6	70.8	72.2
Indian	77.7	75.9	76.3	76.4
Pakistani/Bangladeshi	69.8	68.5	72.5	73.0
Black	72.8	71.9	71.9	71.1
Other ethnic group	72.0	71.4	72.6	70.6
Females				
16-19	55.4	53.9	52.6	50.3
20-24	70.3	70.9	70.9	71.1
25-34	75.2	75.6	76.4	76.0
35-49	78.5	78.5	78.9	79.6
50-64	59.1	59.1	59.4	60.0
Aged 65+	4.5	4.7	5.0	5.4
White	56.5	56.5	56.7	57.0
Mixed parentage	65.8	67.9	63.0	63.5
Indian	59.2	59.7	57.6	59.1
Pakistani/Bangladeshi	28.1	29.8	30.0	31.5
Black	60.5	61.4	60.3	60.9
Other ethnic group	51.8	53.4	55.2	55.6

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/Employment/C1/C1.1_Activity_Rate_by_Nation_Region_Age_Gender_and_Ethnicity.xls

- In general, the marked increase between the age group 16-19 and 20-24 is due to men leaving full-time education and joining the labour market. Economic activity rates declined between 2006 and 2009 for both age groups, with the decline particularly marked in the younger age group.
- Amongst men aged 25 to 64, the percentage participating in the labour market barely changed over this period. Only a tenth of men aged above retirement age are economically active, but this percentage increased in each year from 2006 to 2009.
- The percentage of women economically active is generally much smaller than the corresponding figure for men, in each age group. The pattern of economic activity by

age is very similar, but the percentage of women participating in the labour market is highest in the 35 to 49 year old age group (compared to 25-34 year olds for men).

- The percentage of 16-19 year old women in the labour market is almost equal to the male rate in the same age group, but declined earlier than the male percentage in the current recession. In the 20-24 age group, women experienced a smaller decline in economic activity rates than men.
- Economic activity rates for women aged 25 to 34 and 35 to 49 increased steadily between 2006 and 2009. Around three-fifths of women aged 50 to 64 are economically active. The percentage economically active increased slightly, probably reflecting the entry of younger cohorts of women who have been more active throughout their lifetime entering this age group. This effect can also be seen in the faster increase in economic activity rates for women aged over 65 (around 1 in 20 of whom participate in the labour market).
- Economic activity rates by ethnic group are calculated for all people aged 16 and over. This disguises the differential between white and minority ethnic groups because there are proportionately more older white people, increasing the size of the denominator and hence reducing the percentage economically active. The percentage of white men economically active fell very slowly between 2006 and 2009, while there was a slow increase in the white female economic activity rate.
- Among minority ethnic men, the percentage economically active was highest for the Indian and mixed parentage ethnic groups and lowest for Pakistani and Bangladeshi men in 2006. While the percentage of men economically active declined by 2009 in most ethnic groups, there was a marked increase for Pakistani and Bangladeshi men.
- Turning to women, the highest economic activity rates were displayed by the mixed parentage and Black ethnic groups throughout the period 2006 to 2009. The most notable feature is the very low percentage of Pakistani and Bangladeshi women in the labour force, but as is the case for men, this percentage increased markedly between 2006 and 2009 (though less than a third of women from these ethnic groups were economically active in 2009).

Spotlight Feature: The Impact of the Recession on Young People

The recession which started in 2008 saw the national employment rate fall from 73% in 2008Q1 to 70.3% in 2010Q1. This was accompanied by a rise in the unemployment rate over the same period from 5.3% to 8.1%, and a slight *increase* (contrary to what might have been expected according to the 'discouraged worker effect') in economic activity. In this section we ask whether the experience of young people during the recession was different from that of the rest of the labour market.

Theory

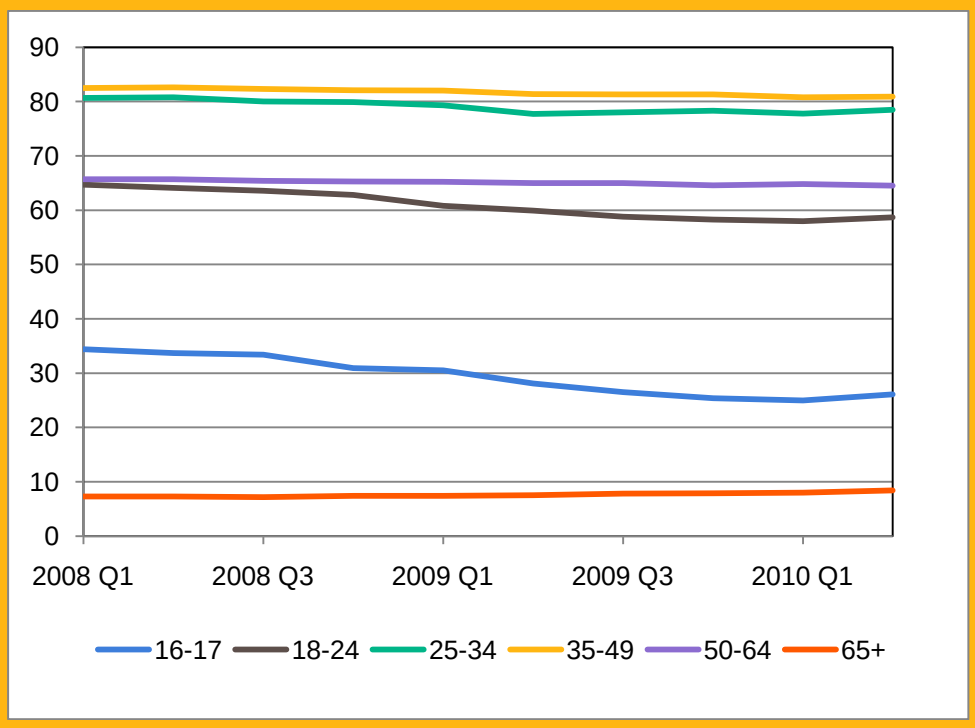
There are several reasons why we might expect young people to have suffered more during the recession. Firstly, a decline in recruitment affects all people looking for work, and a disproportionate number of these are young people entering the labour market for the first time. Secondly, if they are forced to cut jobs, employers may choose to try to retain workers in whom they have invested more heavily in training and work experience, even if those workers are more highly paid. Thirdly, those sectors in which young people tend to be over-represented (e.g. construction, retailing, hotels & catering) were among the worst affected during the recession, and job openings as well as trainee and apprenticeship positions in these areas would have declined.

Evidence

Employment rates

Employment rates among older age categories fell very slightly over the recession (typically by 1-3 percentage points) and actually increased for the over 65s. However, employment rates for 16-17 and 18-24 year olds fell by 9.4% and 6.7% respectively.

Figure S6.1: Employment rate by age group (%)

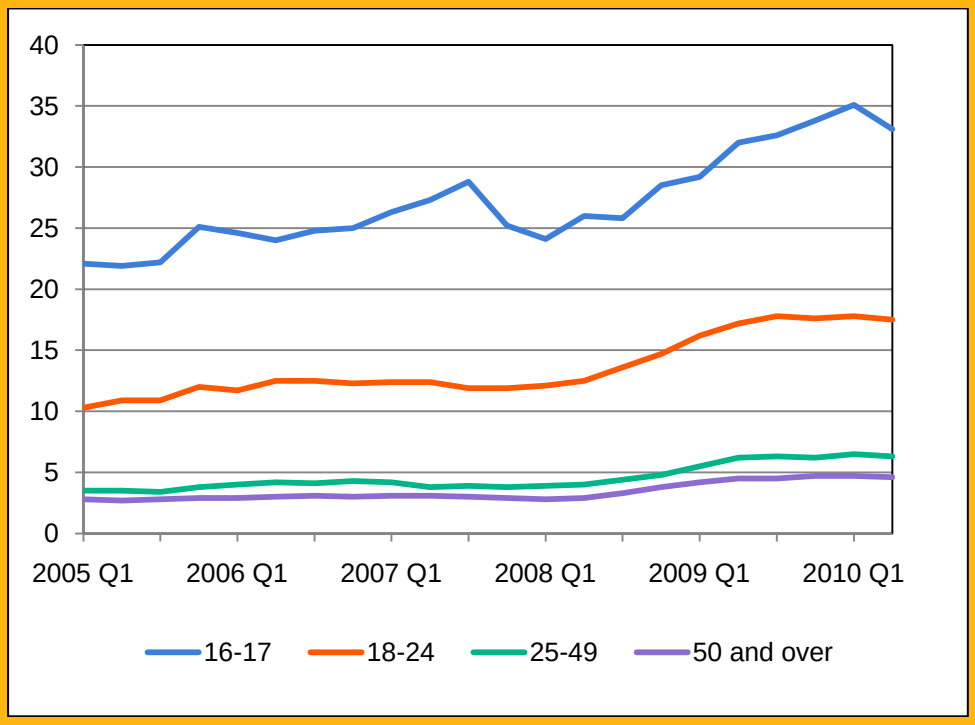


Source(s): ONS, *Labour Market Statistics.*

Activity rates
Activity rates among young people were already falling before the recession as the government's attempts to widen access to education and the Education Maintenance Allowance (EMA) encouraged some young people to stay on in full-time education. Even so, activity rates among young people suffered the most during the recession. The activity rate for 16-17 year olds fell by 7% and the rate for 18-24 year olds by 3%. Among older age groups, activity and inactivity rates were flat or even increased.

Unemployment
The increase in the unemployment rate among young people (18-24) was much sharper than for older age categories (those aged 25 and over).

Figure S6.2: Unemployment rate by age group (%)



Source(s): ONS, *Labour Market Statistics*.

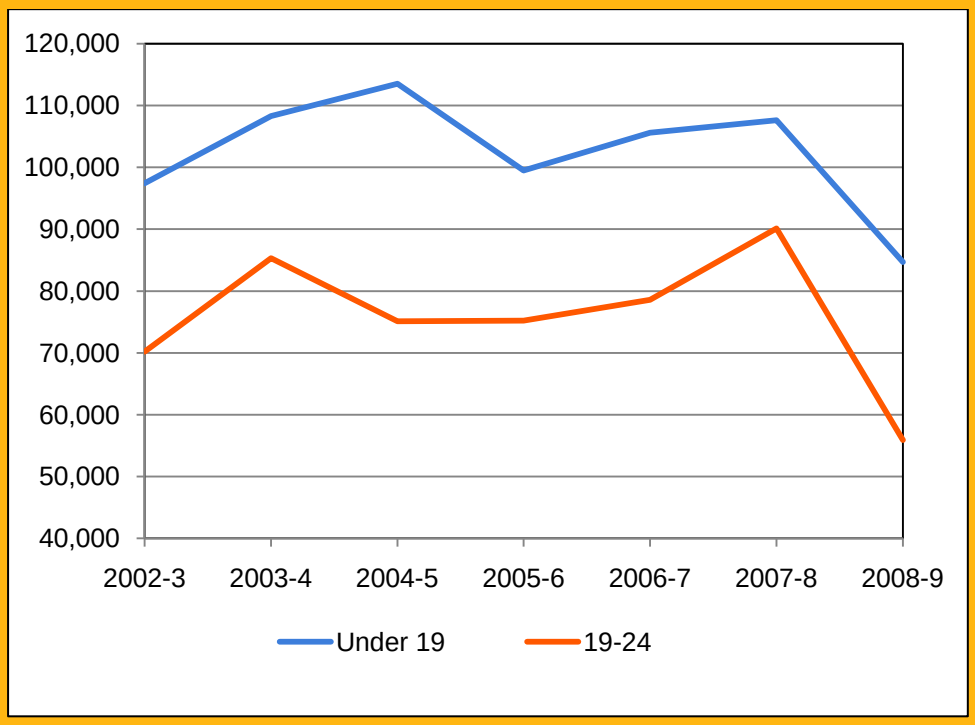
In addition, more young people spent a longer period unemployed. The share of young people unemployed for more than 12 months increased steadily between 2008 and 2009. Among 16-17 year olds, it increased from a low of 5.5% in 2008Q2 to 14.5% in 2009Q4, and at 12.25% in 2010Q1 was around double the rate seen in early 2008. In contrast, among older age groups the share of those unemployed for more than 12 months actually fell in 2008 and the first half of 2009 and only returned to pre-recession rates in 2010Q1.

It appears also that young males suffered more, with the gender employment gap (the difference between female and male employment rates) for 16-17 year olds and 18-24 year olds moving in favour of women in 2009.

Education and training

The annual growth rate for applicants to higher education aged 20 and under rose sharply from 1.5% pa over 1998-2007 to 6.7% pa over 2007-2009, while the rate for applicants aged 21-24 rose from 3.6% pa over 1998-2007 to 15.2% pa over 2007-2009, consistent with a desire to postpone entry to the labour market. However, the recession saw a sharp increase in the number of rejected university applicants. The position was worse for those seeking apprenticeships as firms cut back on offers, reflected in the sharp fall in the number of apprenticeships starts between 2007/08 and 2008/09.

Figure S6.3: Apprenticeship Starts by Age Band, 2002-2009



Source(s): The Data Service, *Statistical First Release* (Apprenticeship Supplementary Tables).

In conclusion, on all the measures reviewed here, the labour market experience of young people was, as expected, worse than for older age groups.

Bibliography

Clancy, Gareth (2009). *The Impact of the Recession on the Labour Market*. Office for National Statistics. http://www.statistics.gov.uk/downloads/theme_labour/impact-of-recession-on-LM.pdf

Equality and Human Rights Commission. *Monitoring the Impact of the Recession on Various Demographic Groups*. Department for Work and Pensions. http://www.dwp.gov.uk/docs/monitoring-impact-recession-demographic-groups.pdf

6.3.4 Employment rates

Table 6.5 presents employment rates (the percentage of the population in work) by gender, age group and ethnic group. Overall, employment rates have declined slightly, but this disguises a decline in male employment rates and an increase in female employment rates. Moreover, while the percentage of white people in work has declined slightly, minority ethnic group employment rates have increased. There is evidence that, in the case of some ethnic groups, initiatives to close the gap with white people have had some success as the gap has declined slightly.

Table 6.5: Employment rates by gender, age and ethnicity

	Employment rate (%)			
	2006	**2007**	**2008**	**2009**
Males				
16-19	42.6	42.6	40.8	36.4
20-24	72.6	72.0	70.0	65.1
25-34	87.7	88.1	87.3	84.8
35-49	88.4	88.7	88.4	86.8
50-64	72.2	72.4	72.4	71.2
Aged 65 +	9.4	9.7	10.2	10.4
White	79.4	79.6	79.0	77.0
Mixed parentage	68.1	63.5	62.2	62.3
Indian	77.5	77.3	78.2	76.3
Pakistani/Bangladeshi	64.6	64.7	67.0	65.6
Black	67.6	67.6	66.4	63.6
Other ethnic group	67.1	68.9	68.8	66.2
Females				
16-19	45.9	44.6	43.4	39.4
20-24	64.4	64.6	63.9	62.6
25-34	71.5	72.1	72.4	70.9
35-49	75.8	75.6	75.9	75.5
50-64	57.7	57.7	57.9	58.1
Aged 65+	4.5	4.7	4.9	5.3
White	68.3	68.2	68.3	67.7
Mixed parentage	61.8	63.6	58.3	57.6
Indian	59.8	61.1	59.0	59.7
Pakistani/Bangladeshi	23.7	24.8	25.8	26.5
Black	58.2	59.8	57.7	54.7
Other ethnic group	48.3	50.1	52.8	52.6

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/Employment/C1/C1.3_Employment_Rate_by_Country_Nation_Region_Gender_and_Ethnicity.xls

- The percentage of people of working age in employment is higher for men than women in all age groups except the youngest (aged 16-19), in which the female employment rate is higher. In this age group, employment rates declined for both men and women between 2006 and 2009, but the decline was particularly marked between 2008 and 2009, leaving just over a third of 16-19 year old men in work.
- For both men and women, the employment rate increases with age, reaching its maximum for 35 to 49 year olds. Employment rates for men aged less than 50 years declined markedly between 2008 and 2009, but women and older people experienced a relatively smaller decline in employment rates. Employment rates increased for men aged 65 and over and for women aged 50 and over.

- Employment rates are highest for white men, but the percentage of white men in work declined between 2008 and 2009. Employment rates for men from minority ethnic groups increased from 2006 to 2008, but fell between 2008 and 2009.
- Employment rates for Indian men were higher than those for men from other minority ethnic groups, but did not increase greatly before the decline during 2008-9. The percentage of Pakistani and Bangladeshi men in work increased between 2006 and 2008, but the employment rate for men of mixed parentage declined quite quickly. Those for men from the Black and 'Other' ethnic groups were fairly stable (at around two-thirds of the population) until they fell sharply between 2008 and 2009.
- Turning to women, white women had the highest employment rates, followed by women of mixed parentage, Indian and Black women. The lowest employment rates were displayed by women from Pakistani, Bangladeshi groups, only around a quarter of whom were in work, but the percentage of women in work from these ethnic groups increased markedly between 2006 and 2009. There was a general decline in employment rates for women between 2008 and 2009, which was greatest for Black women.

6.3.5 Unemployment rates

Table 6.6 presents unemployment rates by gender, age group and ethnic group. There are marked differences in unemployment rates across the three dimensions of inequality. Unemployment rates were extremely low for much of the first decade of the 21st century, but those for men remain higher than those for females, while younger and older people experience higher unemployment rates than people of prime working age. The average unemployment rate for ethnic minorities is well over twice that for white people, but there are large differences between individual minority ethnic groups.

- For men, unemployment rates decline with increasing age. The proportion of 16-19 year olds unemployed stayed above one-fifth for the period 2006-2009, and increased between 2008 and 2009, reaching 28.9%. Unemployment rates for 20-24 year old men have also increased markedly. The male unemployment rate increased between 2008 and 2009 for all age groups, but the increase was greatest in the youngest age groups.

Table 6.6: Unemployment rates by gender, age and ethnicity

	Unemployment (%)			
	2006	**2007**	**2008**	**2009**
Males				
16-19	23.2	22.1	24.5	28.9
20-24	11.8	11.5	13.0	18.3
25-34	5.1	4.7	5.5	8.4
35-49	3.8	3.2	3.7	5.7
50-64	3.6	3.5	3.8	5.6
Aged 65 +	2.6	2.2	1.9	2.8
White	5.2	5.0	5.6	8.1
Mixed parentage	12.9	14.2	14.1	16.0
Indian	7.6	6.0	6.1	7.9
Pakistani/Bangladeshi	13.3	11.6	12.7	15.2
Black	15.5	14.2	15.6	18.9
Other ethnic group	10.7	8.1	9.2	9.8
Females				
16-19	17.1	17.2	17.6	21.8
20-24	8.5	9.0	9.9	12.0
25-34	4.9	4.7	5.2	6.8
35-49	3.5	3.6	3.8	5.1
50-64	2.4	2.5	2.5	3.2
Aged 65+	1.6	1.4	1.8	2.1
White	4.3	4.3	4.6	5.9
Mixed parentage	9.2	9.8	10.9	11.5
Indian	7.6	7.7	7.9	9.0
Pakistani/Bangladeshi	20.3	21.4	18.7	20.5
Black	11.0	11.1	12.5	17.0
Other ethnic group	11.3	11.1	9.6	10.3

Sources: Annual Population Survey (APS).
Statlink: https://www.nomisweb.co.uk/.
Datalink:
https://almanac.ukces.org.uk/Employment/C1/C1.4_Unemployment_Rate_by_Country_Nation_Region_Gender_Ethnicity.xls

- The pattern of female unemployment rates by age is similar to that for men, but unemployment rates were lower for women than men across the age range, reflecting their overall lower participation in the labour market (see Table 6.4). The gender differential was narrowest for people aged 35 to 49. Unemployment rates increased for all age groups between 2006 and 2009, most rapidly between 2008 and 2009. The increase in unemployment rates was much greater for women aged under 35 than for women aged 35 and over.
- The unemployment rate increased faster for white than Indian men between 2006 and 2009, when the Indian unemployment rate was marginally lower. For other minority ethnic groups, the male unemployment rate was much higher than that for white men. Unemployment rates for men of mixed parentage and from the Pakistani, Bangladeshi

and Black ethnic groups were twice or more the corresponding rate for white men. The increase in unemployment rates between 2008 and 2009 was greatest for Black men.

- Differentials in unemployment rates by ethnic group were more extreme for women. White women experienced the lowest unemployment rate throughout the period 2006 to 2009 and the increase in the percentage unemployed was smaller than for most minority ethnic groups. A fifth of Pakistani and Bangladeshi women were unemployed, but the percentage unemployed hardly increased over this period. In contrast, the experience of Black women deteriorated substantially, as they experienced the largest increase in unemployment rate between 2008 and 2009 of any ethnic group of either gender.

6.3.6 Earnings

Levels of pay (measured by average weekly wages) are substantially higher for men than women. Average wages increase with age before declining again for workers aged 50 and over.

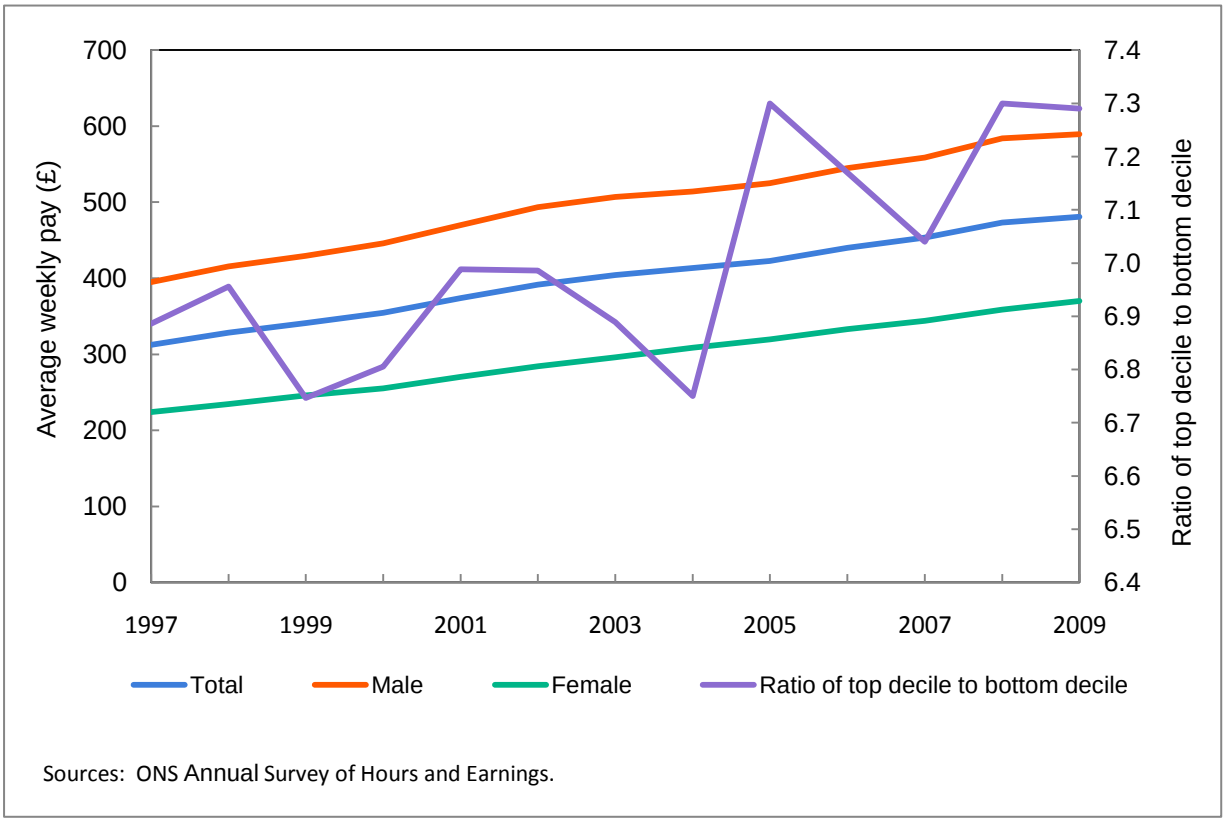
- Whilst average wages have increased steadily for both men and women over the period 1997 to 2009 (Figure 6.5). Male earnings were about a third higher than those of females in 1997, and this differential widened by 2009. The highest earners (people in the top decile of earnings) received around 7 times as much as the lowest paid (people in the lowest decile). This differential clearly widened between 2007 and 2009.
- The lowest earnings (by far) were experienced by 16-17 year olds (although this group does have a lower National Minimum Wage), and rose to a maximum for people aged 40-49. Average wages declined with increasing age for people aged 50 and over (Table 6.7).
- The increase in average wages over time was strongest for people aged over 30 years. (Figure 6.6). The growth in average wages was much weaker for those aged 18 to 29, and average wages for 16-17 year olds hardly increased between 1997 and 2009.

Table 6.7: Earnings by gender and age

	Mean weekly wage rate (£)			
	1997	**2001**	**2005**	**2009**
Total	312.5	373.8	422.8	480.9
Ratio of top decile to bottom decile (%)	6.9	7.0	7.3	7.3
Male	394.9	470.1	524.9	589.3
Female	224.2	270.4	319.5	370.2
16-17			97.2	98.5
18-21	154.3	174.8	191.0	204.7
22-29	275.7	336.4	362.2	398.9
30-39	343.7	410.8	472.7	533.7
40-49	353.4	418.6	486.0	554.6
50-59	306.9	365.6	449.7	519.4
60+			323.1	387.5

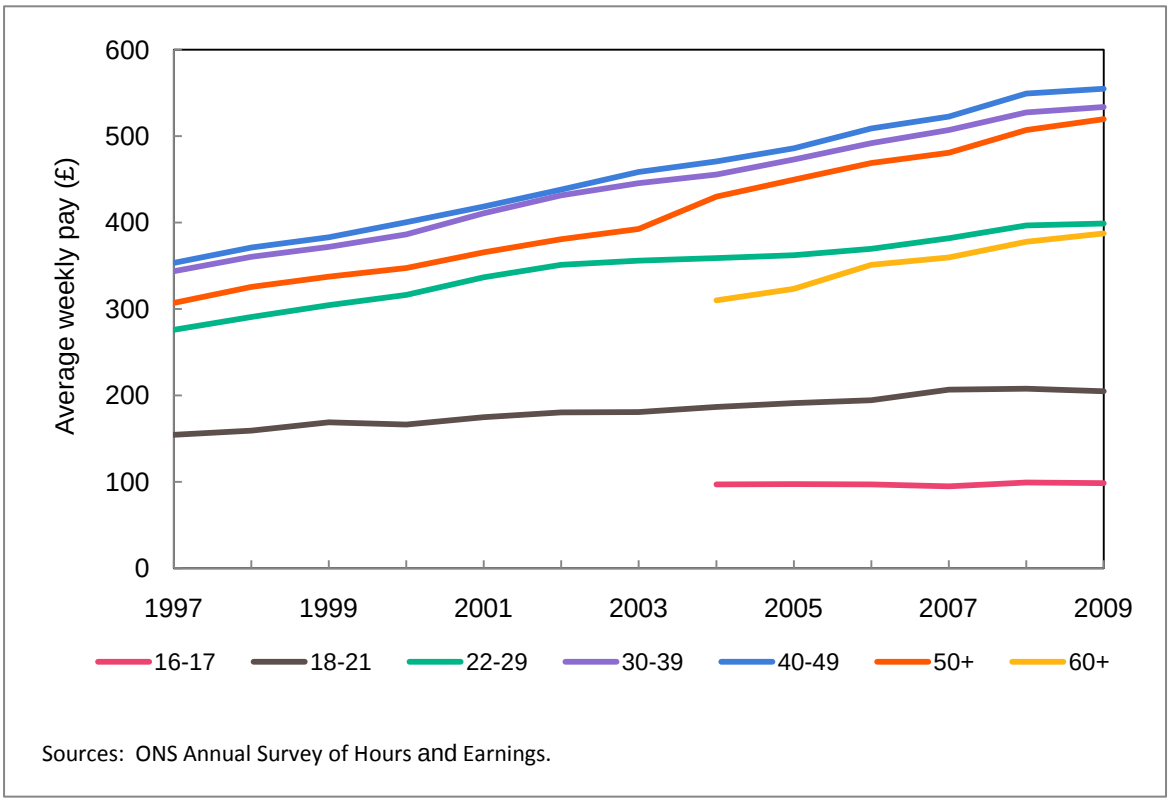
Sources: ONS, ASHE.
Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101.
Datalink: https://almanac.ukces.org.uk/inequality/E1/E1.2_Ave_Weekly_Pay_by_Age_and_Gender.xls

Figure 6.6: Earnings by gender, 1997-2009



Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101.
Datalink: https://almanac.ukces.org.uk/inequality/E1/E1.2_Ave_Weekly_Pay_by_Age_and_Gender.xls.

Figure 6.7: Earnings by age, 1997-2009



Sources: ONS Annual Survey of Hours and Earnings.

Statlink: http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=13101.
Datalink: https://almanac.ukces.org.uk/inequality/E1/E1.2_Ave_Weekly_Pay_by_Age_and_Gender.xls.

Appendix 1

Notes on data coverage and limits

A1.1 Employer Skills Surveys

The data presented in this *UK Employment and Skills Almanac* and *Almanac Online* workbooks from the Northern Ireland Skills Monitoring Survey (NISMS) were reprocessed for last years' Almanac to match the definitions of SSC footprints as they were at April 2009. Therefore these data differ from those presented in NISMS 2005 and the results will also be different from those shown in previously published reports. Further details on the NISMS definitions can be found in appendix 3.

Statistics for England by SSC from National Employers Skills Survey 2009 (NESS09) are based on the new relicensed SSC definitions (see appendix 2). The 'old' SSC definitions (used in the original NESS09 report) are noted in appendix 3.

Data for Wales from The Welsh Employers' Skills Survey is presented in Future Skills Wales (FSW) 2005. Although the sample for the survey was drawn by an older SSC footprint, insufficient details are available to reprocess the data to match the newer SSC definitions (in appendix 2). For more information on the SSC definitions used in FSW, please see appendix 3.

A1.2 Note on Labour Force Survey data

Some of the data for SSCs presented in the *Almanac Online* workbooks and this report were derived from the ONS' Labour Force Survey. This involved aggregating detailed SIC data into the corresponding SSC definitions (see appendix 2).

There are a few reasons why SSC data we have generated from the LFS (and presented in the Almanac and its associated workbooks) may be different from the data released in other publications that also use LFS data.

One reason for these differences is the existence of different versions of LFS data, while another is due to differences in the methodologies used in processing of the LFS data.

LFS is weighted using population estimates and therefore the versions of LFS based on different population estimates will give different estimates of employment data. Methodologically, employment variables generated by considering population as a whole will be different from the ones generated by merely considering a subset of the population, e.g. the working-age population or those who are 16+. Furthermore, whether or not the annual data is generated by taking the average across four quarters or by taking the results from one quarter can give different employment estimates. Moreover, different options for dealing with 'no answer', 'does not apply', and missing variables in the surveys will inevitably result in different results.

For LFS-based data presented in this report and *Almanac Online* workbooks, quarterly micro-LFS data from the UK data Archive based on the 2007 population estimates have been used. For the employment variables, population in all age groups are used whereas for skills/qualifications variables only working-age (19-59/64) population has been considered. For example, headline LFS indicators published in the ONS labour market statistics are

either based on working-age population or people who are 16+, which implies that these indicators are inevitably smaller than their counterparts in the Almanac.

As for the quarterly data that have been used, the employment variables have been generated by taking the average across four quarters and the skills/qualifications variables only consider the fourth calendar quarter of the year. The different treatment of the skills/qualifications data is intended to reduce the inconsistencies between the Almanac and Ambition 2020 data.

For all variables in the Almanac generated from the LFS data, we have not re-allocated the numbers in 'no answer', 'does not apply', and missing variables categories, nor have we used any scaling/estimation techniques which might distort the raw data we receive. However, the ONS uses the whole population to weight the LFS indicators, but their weighting strategy is complex due to differential non-response rates in age groups and genders.

A1.3 Moving from SIC 2003 to SIC 2007

The use of the LFS dataset to populate some of the worksheets encountered several problems related to: difficulties with the conversion from old (2003) to new (2007) Standard Industrial Classification (SIC); issues related to old and new definitions of SSC footprints based on old and new SICs; and other problems, including missing data.

The SIC issues were the most problematic. In principle, it is possible to estimate historical data by sector or SSC using information from the LFS and mappings between old and new SICs provided by ONS. In practice, without detailed mappings at the 4/5 digit level, it remains unclear what proportions of employment correspond from one SIC to the other at this more detailed level. This means that it is currently possible to produce consistent time series for 2 digit SIC categories, not 4/5 digit ones. The only practical solution for estimating more detailed categories is to work with the most detailed data available together with the general mappings between old and new SICs provided by ONS, making the best of what limited information is available. This includes making estimates for the SSCs, which are now defined using 4/5 digit categories.

This means that there are still some significant discontinuities for some SSCs between 2008 and 2009. These discontinuities are particularly marked for e-Skills. The discontinuities arise as a result of three inter-related problems:

- Conversion of 4 digit Industry SIC1992 to SSC 2007;
- Conversion of 5 digit Industry SIC2007 to 67 Industry SIC2003;
- Conversion of Industry SIC2007 to SSC 2007.

We investigated if an alternative approach might result in less marked discontinuities. This involved a two stage method of creating a more continuous series, based around converting 2 digit SIC categories to a continuous series first, and then applying a fixed SIC to SSC mapping to all the historical years prior to 2009 to get to the estimates for SSCs. This was only done in aggregate. While this appears to result in a smoother transition over the 2008/2009 period, it is still far from perfect.

Furthermore, the scale of the task to apply this alternative method to the whole database used in the Almanac workbooks means that the SSC time series results, including those for e-Skills used in the workbooks, have not been revised using the alternative method. This means that such series should be treated with caution, especially regarding changes over the period 2008-2009.

Revised estimates for SIC and SSC categories will be generated as part of the next Working Futures (2010-2020) exercise, which will be available later in 2011. For a more detailed explanation of the issues surrounding the generation of the SSC data from the LFS/ABI datasets, please contact almanac@ukces.org.uk.

Appendix 2

A2.1 Sector Skills Councils

Sector Skills Councils (SSCs) are independent, employer-led, UK–wide organisations designed to build a skills system that is driven by employer demand. There are currently twenty-three SSCs, covering about 85 per cent of the UK workforce. SSCs are licensed by the Government through the UK Commission for Employment and Skills (UKCES). Most SSCs were originally licensed between 2004 and 2005.

Further information on SSC's can either be accessed from the Alliance of Sector Skills Councils http://www.sscalliance.org/ or from individual SSC web pages which are detailed below.

Asset Skills
Sector Coverage: Property, housing, cleaning services, parking and facilities management
Visit their website at: http://www.assetskills.org/

Cogent
Sector Coverage: Bioscience, Chemical, nuclear, oil and gas, petroleum and polymer industries
Visit their website at: http://www.cogent-ssc.com/

ConstructionSkills
Sector Coverage: Construction
Visit their website at: http://www.cskills.org/

Creative & Cultural Skills
Sector Coverage: Craft, cultural heritage, design, literature, music, visual and performing arts.
Visit their website at: http://www.ccskills.org.uk/

e-skills UK
Sector Coverage: Information technology and telecommunications
Visit their website at: http://www.e-skills.com/

Energy & Utility Skills
Sector Coverage: Electricity, gas, waste management and water industries
Visit their website at: http://www.euskills.co.uk/

Financial Services Skills Council
Sector Coverage: Financial services, finance and accounting sectors
Visit their website at: http://www.fssc.org.uk/

GoSkills
Sector Coverage: Passenger transport
Visit their website at: http://www.goskills.org/

Improve Ltd
Sector Coverage: Food and drink manufacturing and processing
Visit their website at: http://www.improveltd.co.uk/

Institute of the Motor Industry
Sector Coverage: The retail motor industry
Visit their website at: http://www.motor.org.uk/

Lantra
Sector Coverage: Environmental and land-based industries
Visit their website at: http://www.lantra.co.uk/

Lifelong Learning UK
Sector Coverage: Career guidance, community learning and development, further education, higher education, libraries, archives and information services, work-based learning
Visit their website at: http://www.lluk.org/

People 1st
Sector Coverage: Hospitality, leisure, travel and tourism
Visit their website at: http://www.people1st.co.uk/

Proskills UK
Sector Coverage: Process and manufacturing industry
Visit their website at: http://www.proskills.co.uk/

SEMTA
Sector Coverage: Science, engineering and manufacturing technologies (including Composites)
Visit their website at: http://www.semta.org.uk/

Skills for Care and Development
Sector Coverage: Early years, children and young people's services, and social work and social care for adults and children
Visit their website at: http://www.skillsforcareanddevelopment.org.uk

Skills for Health
Sector Coverage: The health sector across the UK
Visit their website at: http://www.skillsforhealth.org.uk/

Skills for Justice
Sector Coverage: Community safety; courts, tribunals and prosecution; custodial care; fire and rescue; forensic science; law enforcement; offender management and support; policing; victim, survivor and witness support; youth justice and the children's workforce. Legal services joined the footprint in 2010/11.
Visit their website at: http://www.skillsforjustice.com

Skills for Logistics
Sector Coverage: Freight logistics industry and Wholesale
Visit their website at: http://www.skillsforlogistics.org

SkillsActive
Sector Coverage: Active Leisure, Learning and Well-Being
Visit their website at: http://www.skillsactive.com/

Skillset
Sector Coverage: Broadcast, film, video, interactive media, photo imaging, publishing and advertising. Fashion and Textiles (from 1 April 2010).
Visit their website at: http://www.skillset.org/

Skillsmart Retail
Sector Coverage: Retail
Visit their website at: http://www.skillsmartretail.com

SummitSkills
Sector Coverage: Building services, engineering
Visit their website at: http://www.summitskills.org.uk/

A2.2 Sector Skills Councils and Labour Market Intelligence

Good quality sectoral labour market and skills data and, crucially, interpretation and analysis of data (i.e. adding intelligence to the information) is vital to the success of each SSC. SSC's remit with regard to labour market intelligence is outlined in the UK Commission (2009) publication *Information to Intelligence,* which can be found in the publication section of our website www.ukces.org.uk.

A2.3 Sector Skills Council Definitions

SSC definitions use Standard Industrial Classification (SIC) codes that most closely match each SSC's employer coverage. SIC 2007 is used to define SSCs within this Almanac. These SIC 2007 definitions are a 'best fit' of each SSC's core business sectors (as defined by each SSC's contract in spring 2010). In some cases the use of core SIC codes excludes elements of the SIC footprint because they are included in other areas.

The extent to which the 2007 SIC codes used in the Almanac are an exact fit with each SSC's employer coverage varies between SSC's.

We recommend that users seeking richer, deeper intelligence on, employer and employee needs within a specific sector contact the relevant SSC.

SSC	SIC 2007 codes covered
ASSET SKILLS	55.90, 68.10, 68.20, 68.31, 68.32, 77.33, 81.10, 81.21, 81.22, 81.29
COGENT	06.10, 06.20, 09.10, 19.10, 19.20, 20.11, 20.12, 20.13, 20.14, 20.15, 20.16, 20.17, 20.20, 20.41, 20.42, 20.51, 20.52, 20.53, 20.59, 21.10, 21.20, 22.19, 22.21, 22.22, 22.23, 22.29, 24.46, 47.30, 82.92
CONSTRUCTIONSKILLS	41.10, 41.20, 42.11, 42.12, 42.13, 42.21, 42.22, 42.91, 42.99, 43.11, 43.12, 43.13, 43.29, 43.31, 43.32, 43.33, 43.34, 43.39, 43.91, 43.99, 71.11, 71.12/2, 71.12/9, 74.90/2
CREATIVE AND CULTURAL	18.20/1, 32.12, 32.13, 32.20, 59.20, 74.10, 85.52, 90.01, 90.02, 90.03, 90.04, 91.02, 91.03
ENERGY & UTILITY SKILLS	35.11, 35.12, 35.13, 35.14, 35.21, 35.22, 35.23, 36.00, 37.00, 38.11, 38.12, 38.21, 38.22, 38.31, 38.32, 39.00, 49.50
E-SKILLS UK	18.20/3, 58.21, 58.29, 61.10, 61.20, 61.30, 61.90, 62.01, 62.02, 62.03, 62.09, 63.11, 63.12, 95.11, 95.12
FINANCIAL SERVICES	64.11, 64.19, 64.20/5, 64.30, 64.91, 64.92, 64.99, 65.11, 65.12, 65.20, 65.30, 66.11, 66.12, 66.19, 66.21, 66.22, 66.29, 66.30, 69.20, 70.22/1
GOSKILLS	49.10, 49.31, 49.32, 49.39, 50.30, 51.10, 52.21/2, 52.21/3, 52.23, 85.53
GOVERNMENT SKILLS	82.99, 84.11, 84.12, 84.13, 84.21, 84.22, 84.30
IMPROVE	10.11, 10.12, 10.13, 10.20, 10.31, 10.32, 10.39, 10.41, 10.42, 10.51, 10.52, 10.61, 10.62, 10.71, 10.72, 10.73, 10.81, 10.82, 10.83, 10.84, 10.85, 10.86, 10.89, 10.91, 10.92, 11.01, 11.02, 11.03, 11.04, 11.05, 11.06, 11.07, 46.38
INSTITUTE OF THE MOTOR INDUSTRY/AUTOMOTIVE SKILLS	45.11, 45.19, 45.20, 45.31, 45.32, 45.40, 52.21/9, 77.11, 77.12
LANTRA	01.11, 01.12, 01.13, 01.14, 01.15, 01.16, 01.19, 01.21, 01.22, 01.23, 01.24, 01.25, 01.26, 01.27, 01.28, 01.29, 01.30, 01.41, 01.42, 01.43, 01.44, 01.45, 01.46, 01.47, 01.49, 01.50, 01.61, 01.62, 01.63, 01.64, 01.70, 02.10, 02.20, 02.30, 02.40, 03.12, 03.21, 03.22, 46.61, 64.20/1, 47.76, 74.90/1, 75.00, 77.31, 81.30, 91.04, 93.19/1
LIFELONG LEARNING UK	85.31, 85.32, 85.41, 85.42, 85.59, 85.60, 91.01

SSC	SIC 2007 codes covered
PEOPLE 1ST	55.10, 55.20, 56.10, 56.21, 56.29, 56.30, 79.11, 79.12, 79.90, 82.30, 92.00, 93.21
PROSKILLS	05.10, 05.20, 07.10, 07.21, 07.29, 08.11, 08.12, 08.91, 08.92, 08.93, 08.99, 09.90, 13.92/1*, 16.10, 16.21, 16.22, 16.23, 16.24, 16.29, 17.11, 17.12, 17.21, 17.22, 17.23, 17.24, 17.29, 18.11, 18.12, 18.13, 18.14, 20.30, 23.11, 23.12, 23.13, 23.14, 23.19, 23.20, 23.31, 23.32, 23.41, 23.42, 23.43, 23.44, 23.49, 23.51, 23.52, 23.61, 23.62, 23.63, 23.64, 23.65, 23.69, 23.70, 23.91, 23.99, 31.01, 31.02, 31.03, 31.09, 95.24
SEMTA	22.11, 24.10, 24.20, 24.31, 24.32, 24.33, 24.34, 24.41, 24.42, 24.43, 24.44, 24.45, 24.51, 24.52, 24.53, 24.54, 25.11, 25.12, 25.21, 25.29, 25.30, 25.40, 25.50, 25.61, 25.62, 25.71, 25.72, 25.73, 25.91, 25.92, 25.93, 25.94, 25.99, 26.11, 26.12, 26.20, 26.30, 26.40, 26.51, 26.52, 26.60, 26.70, 26.80, 27.11, 27.12, 27.20, 27.31, 27.32, 27.33, 27.40, 27.51, 27.52, 27.90, 28.11, 28.12, 28.13, 28.14, 28.15, 28.21, 28.22,28.23, 28.24, 28.25, 28.29, 28.30, 28.41, 28.49, 28.91, 28.92, 28.93, 28.94, 28.95, 28.96, 28.99, 29.10, 29.20/1, 29.20/2, 29.31, 29.32, 30.11, 30.12, 30.20, 30.30, 30.40, 30.91, 30.92, 30.99, 33.10, 33.11, 33.12, 33.13, 33.14, 33.15, 33.16, 33.17, 33.19, 33.20, 46.72, 71.12/1, 71.20, 72.10, 72.11, 72.19
SKILLS FOR CARE AND DEVELOPMENT	85.10, 87.10, 87.20, 87.30, 87.90, 88.10, 88.91, 88.99
SKILLS FOR HEALTH	86.10, 86.21, 86.22, 86.23, 86.90
SKILLS FOR JUSTICE	84.23, 84.24, 84.25
SKILLS FOR LOGISTICS	46.11, 46.12, 46.13, 46.14, 46.15, 46.17, 46.18, 46.19, 46.21, 46.22, 46.23, 46.31, 46.32, 46.33, 46.34, 46.35, 46.36, 46.37, 46.39, 46.43, 46.44, 46.45, 46.46, 46.47, 46.48, 46.49, 46.51, 46.52, 46.62, 46.63, 46.64, 46.65, 46.66, 46.69, 46.71, 46.73, 46.74, 46.75, 46.76, 46.77, 46.90, 49.20, 49.41, 49.42, 50.20, 50.40, 52.10, 52.21/1, 52.22, 52.24, 52.29, 53.10, 53.20
SKILLSACTIVE	29.20/3, 32.30, 55.30, 77.21, 85.51, 93.11, 93.12, 93.13, 93.19/9, 93.29
SKILLSET	13.10, 13.20, 13.30, 13.91, 13.92/2, 13.92/3, 13.93, 13.94, 13.95, 13.96, 13.99, 14.11, 14.12, 14.13, 14.14, 14.19, 14.20, 14.31, 14.39, 15.11, 15.12, 15.20, 18.20/2, 20.60, 46.16, 46.24, 46.41, 46.42, 58.11, 58.12, 58.13, 58.14, 58.19, 59.11, 59.12, 59.13, 59.14, 60.10, 60.20, 63.91, 63.99, 73.10, 73.11, 73.12, 74.20, 95.23, 96.01
SKILLSMART RETAIL	47.11, 47.19, 47.21, 47.22, 47.23, 47.24, 47.25, 47.26, 47.29, 47.41, 47.42, 47.43, 47.51, 47.52, 47.53, 47.54, 47.59, 47.61, 47.62, 47.63, 47.64, 47.65, 47.71, 47.72, 47.73, 47.74, 47.75, 47.77, 47.78, 47.79, 47.81, 47.82, 47.89, 47.91, 47.99, 77.22, 77.29, 82.20, 96.03
SUMMITSKILLS	35.30, 43.21, 43.22, 95.21
Not Covered	03.11, 12.00, 32.11, 32.40, 32.50, 32.91, 32.99, 50.10, 51.22, 64.20, 69.10, 70.10, 70.21, 70.22, 72.20, 73.20, 74.30, 74.90, 77.32, 77.34, 77.35, 77.39, 77.40, 78.10, 78.20, 78.30, 80.10, 80.20, 80.30, 82.11, 82.19, 82.91, 85.20, 94.11, 94.12, 94.20, 94.91, 94.92, 94.99, 95.22, 95.25, 95.29, 96.02, 96.04, 96.09, 97.00, 98.10, 98.20, 99.00

Inclusion/exclusion of 5-digit SIC codes dependent on the level of industrial disaggregation available within the specific data source in the Almanac.

Appendix 3

A3.1 Other SSC Definitions

Definitions for SSCs by SIC codes have varied over time. This year we used the definitions presented in appendix 2 which are based on the most recent SIC 2007 SSC definitions for the majority of data presented.

Last year we used the most recently available SIC 2003 definitions for the majority of data. Those definitions used can be found in last year's Almanac 2009 publication: **http://www.ukces.org.uk/publications-and-resources/browse-by-title/uk-employment-and-skills-almanac-2009**. The data from the devolved administrations employer skills surveys included in this years' publication however have not been updated since last year and are therefore based on the definitions presented in last year's Almanac 2009 appendix.

Any data presented from the National Employer Skills Survey for England (NESS) 2009 is new to this years' Almanac, and is based on the most recent SSC definitions by SIC 2007 presented in appendix 2. However at the time of publication of NESS for England 2009 last year, the SIC 2007 definitions were not available, and SSC definitions were instead based on the same SIC 2003 definitions used in last years' Almanac 2009. Therefore some data tables for SSCs using the NESS 2009 data in the Almanac 2010 may differ slightly from the NESS 2009 main publication. The SIC 2003 SSC definitions used in the National Employer Skills Survey 2009 published report can be found in annex C: **http://www.ukces.org.uk/reports/national-employer-skills-survey-for-england-2009-main-report-evidence-report-23**

Appendix 4

Definition of broad sectors.

The LFS industry grouping are based on the Industry Sections defined under Standard Industry Classification (SIC) 2003 and 2007 codes.

SIC 2007 Section	SIC 2007 Section name	SIC 2007 Definition
A	Agriculture, hunting, forestry and fishing	SIC 01, 02, 03
B	Mining and quarrying	SIC 05, 06, 07, 08, 09
C	Manufacturing	SIC 10 to 33
D, E	Electricity, gas, steam and air conditioning supply. Water supply; sewerage, waste management and remediation activities	SIC 35, 36, 37, 38, 39
F	Construction	SIC 41, 42, 43
G	Wholesale and retail trade repair of motor vehicles and motor cycles	SIC 45, 46, 47
I	Accommodation and food service activities	SIC 55, 56
H, J	Transport and storage Information and communications	SIC 49, 50, 51, 52, 53, 58, 59, 60, 61, 62, 63
K	Financial and insurance activities	SIC 64, 65, 66
L, M, N	Real estate activities, Professional, scientific and technical activities. Administrative and support service activities	SIC 68 to 75, 77 to 82
O	Public admin. and defence; compulsory social security	SIC 84
P	Education	SIC 85
Q	Human health and social work activities	SIC 86, 87, 88
R, S	Arts, entertainment and recreation. Other service activities	SIC 90 to 99

SIC 2003 Section	SIC 2003 Section name	SIC 2003 Definition
A, B	Agriculture, hunting, forestry and fishing	SIC 01,02,05
C	Mining and quarrying	SIC 10,11,12,13,14
D	Manufacturing	SIC 15 to 37
E	Electricity, gas and water supply	SIC 40,41
F	Construction	SIC 45
G	Wholesale and retail trade; repair of motorcycles and personal household goods	SIC 50,51,52
H	Hotels and restaurants	SIC 55
I	Transport, storage and communications	SIC 60,61,62,63,64
J	Financial intermediation	SIC 65,66,67
K	Real estate, renting and business activities	SIC 70,71,72,73,74
L	Public admin. and defence; compulsory social security	SIC 75
M	Education	SIC 80
N	Health and social work	SIC 85
O	Other community, social and personal service activities	SIC 90,91,92,93

Appendix 5

This section looks at some of the main drivers of the outcomes covered within the Almanac and considers some of the definitions used.

A5.1 Defining and measuring productivity

There are several different definitions and meanings of productivity. In general terms productivity is defined as the ratio of output to input:

$$\text{Productivity} = \frac{\text{Output}}{\text{Input}}$$

As a result, increased productivity means more output per unit of input. Our main interest is in labour productivity, and so the input of interest will be some measure of labour input, e.g. number of workers; number of hours worked. However, in practice measuring productivity is more of a challenge.

When measuring labour productivity, there are typically three different measures of output that can be used:

- Gross output;
- Gross value added (GVA);
- Gross domestic product (GDP).

These measure slightly different things and so provide different measures of output. When the productivity measure being calculated relates only to primary inputs (labour and capital), then GVA should be used because it excludes intermediate consumption. GDP is defined only at national level (with no sectoral or regional disaggregation) and so is appropriate for whole economy comparisons. It differs from the sum of GVA across sectors only by the inclusion of taxes (less subsidies) on products (such as VAT and excise duties).

At the same time, there are several different measures of input (labour or population measures) that can be used:

- Hours worked;
- Workers;
- Jobs;
- Population or population of working age.

The choice of which measure to use depends on what question is being addressed and the availability of data. In addition, some measures are preferred on theoretical grounds.

GDP (or GVA) per hour worked is usually the preferred measure because it takes account (in the denominator) of differences in the average length of working week, part-time working, double job holding, and holidays, all of which are conflated within the measure of GVA per worker. Likewise, GDP/GVA per worker is more helpful than GDP/GVA per person/per person of working age as it makes the distinction between those in work and those not in work. However, it can be difficult to obtain reliable data for hours worked, and in that case GVA per worker or per job may be the best alternative.[56]

[56] For more detail on defining and measuring productivity, see ONS (2007), *The ONS Productivity Handbook, A Statistical Overview and Guide,* Basingstoke (UK): Palgrave Macmillan, Chapter 1.

The data assembled in this chapter measure productivity as output (GDP or GVA) per hour worked where it is available, and output per worker where the per hour worked measure is not available. The measure for output for international comparisons across countries is gross domestic product (GDP), while at regional and sectoral level gross value added (GVA) is used as GDP is not defined at these levels.[57]

A5.2 Drivers of productivity

The Treasury identifies five drivers that interact to underlie productivity (HM Treasury, 2000):

- Investment;
- Innovation;
- Skills;
- Enterprise;
- Competition.

These are the focus of the data and analysis in this chapter. Each of these is considered to be an *external driver*, with the exception of skills, which is also an *outcome* and underpins some of the other productivity drivers. The *economic cycle* is an additional influence on productivity. It is also important to recognise the role played by the internal workings of the firm (management and leadership; high performance working practices (HPWPs); and skills utilisation). The influences are not mutually exclusive, but we have not attempted to map out all of the inter-linkages here.

Investment comprises investment in physical capital and also investment in intangible assets, such as software and intellectual property. Key influencing factors include: expected returns to investment; the cost of capital; the perceived risk of investment; and agglomeration benefits of investment at a particular location. Investment in capital raises productivity as follows:

- it increases the amount of capital available per worker;
- it incorporates new technology.

Investment is typically measured as spending on physical assets, where, all other things being equal, increasing investment spending can be interpreted as higher levels of capital per worker, and/or better quality capital for workers. This can be expected to result in higher labour productivity.

Innovation can contribute to higher productivity through:

- improved organisational efficiency (e.g. through new production processes, or workforce organisation);
- development of higher quality and better value goods and services.

Some aspects of innovative activity can be measured by variables such as knowledge transfer and exploitation, number of patent applications, and expenditure on R&D. More spending on R&D or higher levels of patenting activity would be consistent with greater

[57] Gross Domestic Product (GDP) is a measure of the value of total economic activity and can be measured in three ways: 1) as the sum of all the Value Added by all activities that produce goods and services (output); 2) as the total of incomes earned from the production of goods and services (income); or 3) as the total of all expenditures made either in consuming finished goods and services or adding to wealth, less the cost of imports (expenditure). Gross Value Added (GVA) is the difference between the value of the output produced by a sector or region and its intermediate consumption. Intermediate consumption is the cost of raw materials and other inputs that are used up in the production process.

innovative activity and hence, higher levels of productivity. Organisational innovation is inherently difficult to measure; it embodies attitudes and aptitudes to taking risks to exploit new ideas.

As a key outcome of interest, *Skills* is covered in more detail in chapter five. As a key influence on productivity, skills support the raising of productivity directly, by increasing human capital, and indirectly, through spillover effects.

The key inter-linkages between skills and the other influences on productivity are:

- *Competition* puts pressure on firms to utilise resources in a more efficient manner; skills determine the effectiveness with which that is achieved.
- Higher skills encourage greater *innovation*; skills are critical to the development of new technologies and working practices.
- Higher skills encourage greater *enterprise*; managerial skills in particular are critical to the successful exploitation of new ideas.

It is also important to recognise the significant role played by the internal workings of the firm (management and leadership; high performance working practices (HPWPs); and skills utilisation). The UK Commission has done research on these issues,[58] which play a prominent role in much current discussion about productivity.

Enterprise is considered to be a process of dynamic competition, of the creation of new business opportunities either within existing firms or through the setting up of new firms. Greater entrepreneurial activity can increase productivity:

- through the introduction of new technologies or working practices that enable firms to compete more effectively;
- and so as a catalyst to competition, it therefore raises the efficiency with which resources are allocated between firms (by driving inefficient firms out of business).

The extent of entrepreneurial activity is influenced by a number of factors including business *innovation* and knowledge & *skills*. Entrepreneurial activity can be measured by variables such as the number of business start-ups and failures. Where there are increasing numbers of start-ups, this can be seen as a healthy sign of competition, introducing new technologies or practices to the market and increasing the competitive pressure on other firms. The concept of *competition* to which we refer is that in markets for goods and services (the 'product/service' market). (We recognise that competition also influences the labour market and the competition for resources within the firm.) Evidence shows that the more acute the competitive pressure, the higher is productivity growth. Increased competition in markets for goods and services:

- reduces market prices and puts pressure on firms to improve efficiency and decrease costs;
- raises the efficiency with which resources are allocated between firms (more productive firms grow and gain market share, less efficient firms lose market share and ultimately fail); and
- provides an incentive to *innovate* (another of the five influences on productivity).

In trying to get a measure of competition in markets, we have collected and presented data on: concentration of market share and the incidence of supernormal profits. The greater the degree of competition the lower each of these variables will be.

[58] See for eg. http://www.ukces.org.uk/upload/pdf/High%20Performance%20Working%20-%20Case%20Studies_1.pdf

Finally, alongside the five key influences identified by the Treasury, the *economic cycle* plays a role in determining productivity. This was discussed in Chapter 2, but it is worth noting that the 'downward' turning point of the cycle typically coincides with a marked slowdown of productivity growth, when output growth slows more rapidly than jobs are shed. To the extent that investment is cancelled or deferred, there is also an impact on long-term productivity growth. Against this, restructuring of the economy in recession may act to boost longer-term productive potential if the fittest and most efficient firms survive the tough times.

A5.3 Employment outcomes: determinants and interpretation

A successful economy has a high proportion of its working age population in work. The effectiveness of those in work, the quality of the jobs and the incomes that are earned from work are measured in the *productivity* outcome discussed in Chapter 3. These are also reflected in some employment measures in this chapter, such as the breakdown of employment by occupation and qualification level.

The employment outcomes that we observe are the result of the labour market process that includes both demand factors (the jobs that employers wish to fill) and supply factors (the extent to which the labour force has the characteristics to undertake those jobs, or wishes to do so at the wage being offered).

When demand and supply are not well matched, different types of mismatch occur:

- From the perspective of the employer: skills *shortages* arise when employers find it difficult to fill their vacancies with appropriately skilled applicants; skills *gaps* arise where members of the existing workforce are seen to lack the skills necessary to meet business needs.
- From the perspective of the potential worker, the mismatch takes the form of employment in a less than satisfactory job, or alternatives to employment, namely unemployment or inactivity.

This section primarily concentrates on mismatches from a worker perspective. Skills gaps and skills shortages are considered in chapter five.

Over the long term, employer demand for jobs is shaped by demand for goods and services and by the business strategies adopted by employers in meeting that demand. The demand for goods and services is influenced by a number of external drivers including technological change and globalisation and specialisation. Technological change drives the development of new products and services that satisfy, and often lead, consumer and business demand. Technological change and globalisation and specialisation determine the types of goods and services produced in the UK and so help determine the UK's industrial structure and influence the nature and quality of the jobs offered in terms of occupations, skills, employment type (e.g. part-time, full-time), etc. Global trade is a process through which the UK can shift its specialisation of production of goods and services, by import substitution and export growth, to generate higher quality jobs.

In the short term the state of the economic cycle influences both the employers' offer and the extent of participation in the labour force. At times of higher than average output growth, a greater number of jobs will be on offer, and the likelihood is that in some sectors and local areas the labour market will be more competitive and so the jobs on offer more attractive (higher quality and/or wages). At times of low unemployment individuals that were previously inactive may be attracted to participate in the labour force. Various aspects of the Macroeconomic context were presented in chapter two.

There are a number of long-term drivers of the labour force. *Demographic change* will affect the size and structure of the labour force: the population is projected to age and net inward migration to remain high, if not as high as in the past decade. In the years to 2020, net immigration of foreign nationals to the UK is expected to account for the majority of the increases in the working-age population. Projected changes in population and activity rates confirm the increasingly important role that older people and women are expected to play in the labour market in the future. It is very likely that an increasing number of older women will choose to remain economically active, even beyond the state pension age (which is also planned to rise) as younger cohorts of women who have been more active throughout their lifetime enter older age groups.

Health is a driver of participation in the labour force, which is measured in the economic activity rate. The long-term sick and disabled, together with students, the early retired and those looking after family (including carers) are defined as economically inactive. Those with long-term health problems are more likely to remain inactive, and so improvements in the health of the population contribute to a higher activity rate. *Engagement in the labour market* is a driver of the labour force. The nature and duration of an individual's work experience contributes to their aptitude and suitability for work. Both unemployment and inactivity can disengage an individual from the labour market.

There are other *barriers to participation* that prevent individuals from labour market participation. These include: demands on unpaid work time (e.g. lone parent); costs of access to work (e.g. transport, childcare); the benefit regime (i.e. the potential disincentive to work); and cultural attitudes to work and to learning (to achieve the required skills for work).[59]

The degree of access to and engagement in employment reflects differences of demography, culture and socio-economic advantage: younger people are more likely to be unemployed or inactive; men are more likely to be in work, women more likely to be inactive; in aggregate those from Black and Minority Ethnic (BME) groups are more likely to be inactive or unemployed – although there are marked differences amongst BME groups, with Chinese and Indians tending to display the lowest unemployment and inactivity rates. People with higher qualifications are more likely to be in work and less likely to be inactive. The extent of some of these differences is explored later in the chapter.

It is difficult to quantify sustainability and progression of employment. For example, indicators such as duration of employment with the same employer cannot simply be considered an indicator of sustainable employment; employees successful in improving their job prospects and progression may have a tendency to initiate more job moves than those that are less successful. Instead we focus on measuring the quality of jobs and on how the interpretation of any measures of quality used might provide insights into issues of sustainability and progression, especially for disadvantaged groups including new migrants. The unemployment and employment rate can also be regarded as broad brush indicators of sustainability.

Recent trends in the sectoral and occupational structure of the UK economy have further polarised labour market outcomes, such as wages and employment. For example, there is evidence of a low skills equilibrium in some sectors and geographies as firms follow low value added product strategies.

This can affect particular socio-economic groups, including inward migrants taking up jobs that domestic worker are not prepared to do, resulting in an uneven distribution of the quality of jobs. The types of indicators that might be used to measure the quality of work include

[59] Data on these aspects are currently beyond the scope of the Almanac.

wages and job satisfaction. Although not a direct measure, the ‘nature’ of employment is a proxy for quality and can be measured for example in terms of:

- the (industry) sectoral structure of employment;
- the occupational structure of employment;
- the type of employment (part-time, full-time, self-employed).

Finally, it is important that the LMI Evidence Base monitors inequalities and so variables related to employment and its drivers include dimensions to distinguish characteristics such as age, gender, ethnicity and *skills*. Other dimensions of interest in the measurement of employment are the distribution of domestic (UK) workers versus migrant workers and household type (e.g. lone-parent); however these are not included in the Almanac at present.

A5.4 Defining and measuring skills

There are many different definitions and meanings of the term ‘skills’ (see Box A5.1). It is argued that an individual’s skills comprise:

- qualifications and knowledge acquired through formal education;
- competencies and expertise acquired, for example, through training and experience on the job; and
- innate ability.

Skill is usually measured by:

- how competence is used (e.g. occupation);
- achievement of competence (e.g. as certified by a qualification); or
- level of competence (e.g. relative ability and levels of execution).

The focus here is on the first two measures, although it should be recognised that others are also important.

Box A5.1: What do we mean by skills?

Skills are capabilities and expertise in a particular occupation or activity. There are a large number of different types of skills, and they can be split into a number of different categories. Basic skills such as literacy and numeracy, as well as some other generic skills, such as team working and communication, are applicable in most jobs. Specific skills, such as the ability to operate a machine, are less transferable between occupations. Most occupations use a mix of different types of skills, and within each skill there are different levels of ability required; some people will be more competent than others.

There is no perfect measure of skills, and a range of measures can be used. The most common measures of skills are qualifications, although of course it is possible to have skills without having qualifications. On-the-job training in the workplace is also an important source of skills development, but often not formally recognised. The occupation that people work in is also a commonly used proxy measure.

It is important to look at these wider ranges of skills. However, the ready availability of qualifications data and the comparability of different qualification types means that they are the most regularly used measure.

For individuals, qualifications are portable in the labour market, allowing them to demonstrate that they have acquired skills. For employers, they provide valuable evidence when recruiting new workers. They also motivate employees to complete their training. Qualifications form a major part of employer recruitment strategies, especially screening candidates prior to interview. According to a CIPD survey, the contents of the application form or CV, including qualifications gained, are the most frequently used selection method (66%) by employers.[a] As a result, the majority of individuals prefer studying towards a qualification[b] and over one-half of employers say they would like to support their employees to gain qualifications through staff training.[c]

Qualifications can be further grouped into five different levels: Level 2 equates to five good GCSEs or their vocational equivalents, Level 3 to two or more A-levels and Level 4 and above to degree level qualifications and higher. This classification is discussed in more detail in Box A5.2.

In addition to qualifications, levels of literacy and numeracy are also used as measures of skills. These tend to be based on surveys or on the proportion of the workforce with English or Maths qualifications.

a *CIPD (2006).* Recruitment, Retention and Turnover Survey. *Available online at* *http://www.cipd.co.uk/NR/rdonlyres/A5316993-E9EB-413D-A673-D1D6A5063DD3/0/recruitretntsurv06.pdf*
b National Adult Learning Survey, 2002.
c *PWC (2005).* The Market for Qualifications in the UK. *Available online at* *http://www.ofqual.gov.uk/files/pdf_05_2239full_report.pdf*
Source(s) : Adapted from Leitch Interim Report, Box 1.2 and Leitch Final Report, Box 1 and Box 1.1.

Box A5.2: Qualifications by level

The analysis in this report classifies qualifications into the five levels set out below.

Level 1:	GCSEs, O-Levels or equivalent at grades D-G; National Vocational Qualification (NVQ) Level 1; Business Training and Education Council (BTEC) first or general certificate; General National Vocational Qualification (GNVQ) foundation level; Royal Society of Arts (RSA); and SCOTVEC modules
Level 2:	Five or more GCSEs, O-Levels or equivalent at grades A*-C; NVQ Level 2; BTEC first or general diploma; GNVQ intermediate level; City and Guilds Craft; RSA diploma; and BTEC, SCOTVEC first or general diploma
Level 3:	Two or more A-Levels or equivalent; NVQ Level 3; BTEC National; Ordinary National Diploma (OND); Ordinary National Certificate (ONC); City and Guilds Advanced Craft; and three or more Scottish highers
Level 4:	First or other degree; NVQ Level 4; Higher National Diploma (HND); Higher National Certificate (HNC); and higher education diploma; nursing; teaching (including further education, secondary, primary and others)
Level 5:	Higher degree; Doctor of Philosophy (Ph.D.); and NVQ Level 5

These levels can be further classified into low skills (no qualifications and Level 1); intermediate skills (Levels 2 and 3) and high skills (Level 4 and above). This 'common currency' allows comparisons across sub-groups of the population, time and, to a certain extent, between countries. There is some debate at an international level: Level 2 can be classified as either low or intermediate level.

Note that the new National Qualifications Framework classifies qualifications in a different manner; qualifications are classified to nine levels (Entry level to Level 8), however the changes to classifications all occur at the tertiary education level (Levels 4 and 5 in the original NQF and Levels 4 to 8 in the revised NQF)[1].

Note(s) : 1 See http://www.ofqual.gov.uk/qualification-and-assessment-framework/89-articles/250-explaining-the-national-qualifications-framework. Source(s) : Adapted from Leitch Interim Report, Box 2.1.

A5.5 Understanding the link between skills and the needs of the economy

The links between skills and the rest of the economy are many and complex, as evidenced in the discussion of the Policy Framework in Figure 2.1. There are various aspects which interplay in shaping the skill structure of the workforce, namely:

- employer demand for skills is shaped by the general economic activity levels, changing *demand for goods & services* and by the *business strategies* adopted by employers in meeting that demand. The *demand for goods & services* is itself influenced by a number of external drivers, as set out in earlier chapters. These include *technological change* and *globalisation & specialisation*. *Technological change* drives the development of new products and services that satisfy, and often lead, consumer and business demand. *Technological change* and *globalisation & specialisation* determine the types of goods and services produced in the UK and so help determine the UK's industrial structure and influence the nature and quality of the jobs offered in terms of occupations, skills, type (e.g. part-time, full-time), etc. It also depends on employers' internal business strategies (including use and deployment of managerial skills) and their perceptions of returns to skills. The UK Commission has emphasised that a major challenge is to raise the demand for skills by moving up the value chain and encouraging more businesses to adopt high value added, skill intensive patterns of behaviour.
- the supply of skills is driven by a combination of factors that influence the size of the potential workforce force: *demographic change* (including migration), and patterns of participation in the labour market as well as participation in education and training and investment in human capital (i.e. the demand for learning). The latter are dependent on decisions made by individuals, learning providers, government and employers as well as the returns to education and training for both individuals and employers which will affect the scale and pattern of investment in human capital. The former issues have been discussed in Chapter 2 above.

The balance between these two can lead to matches and mismatches (imbalances) between supply and demand, including various measures of 'shortage' and 'surplus' and the returns to education and training. These can take various forms:

- skill shortages and/or gaps, when there is 'excess' demand for skills[60].
    - Skills shortages arise when employers find it difficult to fill their vacancies with appropriately skilled applicants. There are relatively few skills shortages in the UK but it is important to measure them by sector and occupation to identify those activities in which they do have a significant impact;
    - Skills gaps arise where members of the existing workforce are seen to lack the skills necessary to meet business needs. Skills gaps are far greater in number than skills shortages; it is also important to measure skills gaps by sector and occupation
- unemployment, inactivity, 'over-qualification' or 'under-employment' where there is insufficient demand.

Such imbalances may lead to various market and other responses, including adjustments to labour supply (including inward migration, where foreign workers take up jobs that the

[60] Although it should be noted that defining skill shortages is far from straightforward. The Migration Advisory Committee (MAC) (2008) in an extensive review highlights that the only consensus on these matters is that there is no single measure (either conceptually or practically) that suits all needs. This was updated and extended in a joint report published with the UKCES: A Theoretical Review of Skill Shortages and Skill Needs: Evidence Report 20.

domestic workforce is unable or unwilling to undertake) and changes in pay. Other aspects and related issues include:

- the changing nature of jobs, including polarisation;
- issues of sustainability and progression;
- particular problems faced by disadvantaged groups;
- changes in relative pay;
- vacancies;
- unemployment;
- over qualification & under-employment;
- under qualification (including skills gaps reported by employers);

Glossary of terms

APS	Annual Population Survey
ASHE	Annual Survey of Hours and Earnings
BIS	Department for Business, Innovation and Skills
BME	Black and minority ethnic
BTEC	Business and Technology Educational Council
CE	Cambridge Econometrics
CIPD	Chartered Institute of Personnel and Development
DELNI	Department of Education and Learning Northern Ireland
DWP	Department for Work and Pensions
EU	European Union
Eurostat	European Commission official statistics body
FWS	Futureskills Wales
G7	Group of Seven industrialised nations
GCSE	General Certificate of Standard Education
GDP	Gross domestic product
Gini coefficient	Measure of income inequality; 1=least equal, 0=most equal
GNVQ	General National Vocational Qualification
GOR	Government Office Region
GVA	Gross value added
HEIPR	Higher education initial participation rate
HPWPs	High performance working practices
ICT	Information and Communication Technology
IER	Institute of Economic Research
LFS	Labour Force Survey
LMI	Labour market intelligence / labour market information
LSC	Learning and Skills Council

NESS	National Employer Skills Survey
NHS	National Health Service
NISMS	Northern Ireland Skills Monitoring Survey
NOMIS	UK official labour market statistics body
NQF	National Qualification Framework
NVQ	National Vocational Qualification
OECD	Organisation for Economic Co-operation and Development
ONC	Ordinary National Certificate
OND	Ordinary National Diploma
ONS	Office of National Statistics
PSA	Public service agreement
PWC	Pricewaterhouse Coopers
R&D	Research and development
RSA	Royal Society of Arts
SCOTVEC	Scottish Vocational Education Council
SSC	Sector Skills Council
SSDA	Sector Skills Development Agency
SSV	Skills shortage vacancy
UKCES	See UK Commission
UK Commission	UK Commission for Employment and Skills
USD	US dollars
VAT	Value-added tax

Bibliography

CIPD (2006) *Recruitment, Retention and Turnover, Annual Survey Report 2006*. Chartered Institute of Personnel and Development, London. Available: http://www.cipd.co.uk/NR/rdonlyres/A5316993-E9EB-413D-A673-D1D6A5063DD3/0/recruitretntsurv06.pdf.

Clancy, G. (2009) *The Impact of the Recession on the Labour Market*. Office for National Statistics, Newport. Available: http://www.statistics.gov.uk/downloads/theme_labour/impact-of-recession-on-LM.pdf.

Clegg, R., Leaker, D. and Kent, K. (2010) 'Implications of the change in female state pension age for labour market statistics', in *Economic & Labour Market Review*, Volume 4, No.1, pp.25-29. Office for National Statistics, Newport. Available: http://www.statistics.gov.uk/cci/article.asp?ID=2346.

Department for Business, Innovation & Skills (2010) *A Strategy for Sustainable Growth*. Department for Business, Innovation & Skills, London. Available: http://www.bis.gov.uk/assets/biscore/corporate/docs/s/10-1058-strategy-for-sustainable-growth.pdf.

Department for Business, Innovation & Skills (2010) *Skills for Sustainable Growth.* Strategy Document, Full report. Department for Business, Innovation & Skills, London. Available: http://www.bis.gov.uk/assets/biscore/further-education-skills/docs/s/10-1274-skills-for-sustainable-growth-strategy.

Department for Business, Innovation & Skills (2010) *Local growth: realising every place's potential.* White Paper Cm7961. Department of Business, Innovation & Skills, London. Available: http://www.bis.gov.uk/assets/biscore/economic-development/docs/l/cm7961-local-growth-white-paper.pdf.

Department for Business, Innovation & Skills (2010) *Draft Structural Reform Plan*. Department for Business, Innovation and Skills, London. Available online at http://www.number10.gov.uk/wp-content/uploads/SRP-BIS.pdf.

Department for Business, Innovation & Skills and HM Treasury (2010) *The Path to Strong, Sustainable and Balanced Growth*. Department for Business, Innovation & Skills London. Available: http://www.bis.gov.uk/assets/biscore/corporate/docs/p/10-1296-path-to-strong-sustainable-and-balanced-growth.pdf.

Department for Children, Education, Lifelong Learning and Skills (Wales) and Welsh Assembly Government (2008) *Skills That Work For Wales, A skills and employment strategy and action* plan. Department for Children, Education, Lifelong Learning and Skills, Newtown (Wales). Available: http://wales.gov.uk/docs/dcells/publications/081217stwfwstrategyandactionen.pdf.

Department for Communities and Local Government (2010) *Functional Economic Market Areas, An economic note.* Department for Communities and Local Government, London. Available: http://www.communities.gov.uk/documents/localgovernment/pdf/1469713.pdf.

Department for Employment and Learning (Northern Ireland) (2010) *Steps to Work*. Department for Employment and Learning, Belfast. Available: http://www.delni.gov.uk/index/finding-employment-finding-staff/fe-fs-help-to-find-employment/stepstowork.htm.

Department for Employment and Learning (Northern Ireland) (2010) *Consultation on Success through Skills 2*. Department for Employment and Learning, Belfast. Available: http://www.delni.gov.uk/index/consultation-zone/archived-consultations/archived-consultations-2010/successthroughskills2.htm.

Department for Employment and Learning (Northern Ireland) (2009) *The Northern Ireland Skills Monitoring Survey 2008 Main Report*. Department for Employment and Learning , Belfast. Available online at: http://www.delni.gov.uk/nisms08_final_main_report.pdf.pdf.

Department for Work and Pensions (2010) *21st Century Welfare*. White Paper Cm7913. Department for Work and Pensions, London. Available: http://www.official-documents.gov.uk/document/cm79/7913/7913.pdf.

Department for Work and Pensions, Equality and Human Rights Commission and Government Equalities Office (2009) *Monitoring the Impact of the Recession on Various Demographic Groups*. Department for Work and Pensions, London. Available: http://www.dwp.gov.uk/docs/monitoring-impact-recession-demographic-groups.pdf.

Fitzgerald, R., Taylor, R. and LaValle, I. (2002) *National Adult Learning Survey (NALS) 2002*. Research Report 415. Department for Education and Skills, London. Available: http://www.education.gov.uk/publications/eOrderingDownload/RR415.pdf.

Future Skills Wales (2006) *Future Skills Wales 2005 Sector Skills Survey, Main Report*. Department for Children, Education, Lifelong Learning and Skills, Caerphilly. Available: http://www.learningobservatory.com/uploads/publications/436.pdf.

Futureskills Scotland (2009) *Skills in Scotland 2008*. The Scottish Government, Edinburgh. Available: http://www.scotland.gov.uk/Resource/Doc/263613/0078884.pdf.

Government Equalities Office (2010) *An Anatomy of Economic Inequality in the UK*. Report of the National Equality panel. Government Equalities Office, London. Available: http://sticerd.lse.ac.uk/dps/case/cr/CASEreport60.pdf.

Green, A.E. (2009) *The Importance of Sub-National Perspectives on Employment and Skills.* Praxis 2. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk/upload/pdf/A5%20Geography%20v3.pdf.
Green, A., Owen, D. and Adam, D. (2008) *A resource guide on local migration statistics*. London Government Association, London. Available: http://192.100.100.252:1812/servlet/com.trend.iwss.user.servlet.sendfile?downloadfile=IRE1631-227170240-5576-5576.com.

HM Treasury (2010) *Spending Review 2010*. White Paper Cm7942. Available: http://www.official-documents.gov.uk/document/cm79/7942/7942.pdf.

HM Treasury (2006) *Leitch Review of Skills: Prosperity for all in the global economy - world class skills*, Final Report. HM Treasury, London. Available: www.hm-treasury.gov.uk/d/leitch_finalreport051206.pdf.

HM Treasury (2000) *Productivity in the UK: The Evidence and the Government's Approach*. HM Treasury, London.

Home Office (2001) *Community Cohesion: A Report of the Independent Review Team*, Chaired by Ted Cantle. Home Office, London. Available: http://image.guardian.co.uk/sys-files/Guardian/documents/2001/12/11/communitycohesionreport.pdf.

House of Commons (2004) *Social Cohesion*, Sixth Report of the ODPM: Housing, Planning, Local Government and the Regions Committee Session 2003–04. House of Commons, London. Available: http://www.publications.parliament.uk/pa/cm200304/cmselect/cmodpm/45/45.pdf.

Institute of Community Cohesion (2006) *Challenging local communities to change Oldham: Review of community cohesion in Oldham*. Institute of Community Cohesion, Coventry. Available: http://www.oldham.gov.uk/cantle-review-final-report.pdf.

Mason, G., B. O'Leary, and M. Vecchi (May 2007), *Cross-Country Analysis of Productivity and Skills at Sector Level*. Sector Skills Development Agency Research Report 23. Sector Skills Development Agency, Wath-upon-Dearne. Available: http://www.ukces.org.uk/pdf/070531%20R%20Research%20Report%20-%2023.pdf.

Migration Advisory Committee (2008) *Skilled, Shortage, Sensible: the recommended shortage occupation lists for the UK and for Scotland*. Migration Advisory Committee, London. Available: http://www.ukba.homeoffice.gov.uk/sitecontent/documents/aboutus/workingwithus/mac/first-lists/0908/shortageoccupationlistreport?view=Binary.

OECD (2010) *Education at a Glance 2010: OECD Indicators*. OECD, Paris. Available: http://www.oecd.org/document/52/0,3746,en_2649_39263238_45897844_1_1_1_1,00.html.

OECD (2009) *Education at a Glance 2009: OECD Indicators*. OECD, Paris. Available: http://www.oecd.org/document/24/0,3746,en_2649_39263238_43586328_1_1_1_1,00.html.

OECD (2008) *Education at a Glance 2008: OECD Indicators*. OECD, Paris. Available: http://www.oecd.org/document/9/0,3746,en_2649_39263238_41266761_1_1_1_1,00.html.

OECD (2005) *Education at a Glance 2005: OECD Indicators*. OECD, Paris. Available: http://www.oecd.org/document/34/0,3746,en_2649_39263238_35289570_1_1_1_1,00.html.

ONS (2007), *The ONS Productivity Handbook, A Statistical Overview and Guide*. Chapter 1. Palgrave Macmillan, Basingstoke (UK).

Parkinson, M. *et al*. (2006) *State of the English Cities: A Research Study*, Volume 1. Office of the Deputy Prime Minister, London. Available: http://192.100.100.252:1812/servlet/com.trend.iwss.user.servlet.sendfile?downloadfile=IRE23426-228093096-5576-5576.com.

PricewaterhouseCoopers (2005) *The Market for Qualifications in the UK*. Qualifications and Curriculum Authority, Coventry. Available: http://www.ofqual.gov.uk/files/pdf_05_2239full_report.pdf.

Scottish Executive (2006) *Workforce Plus, An employability framework for Scotland*. Scottish Executive, Edinburgh. Available: http://www.scotland.gov.uk/Resource/Doc/129285/0030791.pdf.

The Independent Review of Higher Education Funding & Student Finance (2010) *Securing a Sustainable Future for Higher Education* (The Browne Report). The Independent Review of Higher Education Funding & Student Finance, London. Available: http://www.bis.gov.uk/assets/biscore/corporate/docs/s/10-1208-securing-sustainable-higher-education-browne-report.pdf.

UK Commission for Employment and Skills (2010) *Ambition 2020: World Class Skills and Jobs for the UK: The 2010 Report*. UK Commission for Employment and Skills, London. Available: http://www.ukces.org.uk/reports/ambition-2020-world-class-skills-and-jobs-for-the-uk-the-2010-report.

UK Commission for Employment and Skills (2010) *National Employer Skills Survey for England 2009*. UK Commission for Employment and Skills , Wath-upon-Dearne. Available: https://ness.ukces.org.uk/NESS09/default.aspx.

UK Commission for Employment and Skills (2010) *National Employer Skills Survey for England 2009: Main Report*. Evidence Report 23. UK Commission for Employment and Skills , Wath-upon-Dearne. Available: https://ness.ukces.org.uk/Hidden%20Library/NESS09/FINAL%20NESS%20Main%20report%20for%20the%20web.pdf.

UK Commission for Employment and Skills (2010) *UK Employment and Skills Almanac 2009*. Evidence Report 12. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk//upload/pdf/UKCES%20Skills%20Almanac_1.pdf.

UK Commission for Employment and Skills (2010) *A Theoretical Review of Skill Shortages and Skill Needs*. Evidence Report 20. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk/upload/pdf/Theoretical%20review_2.pdf.

UK Commission for Employment and Skills (2010) *High Performance Working: Employer Case Studies.* Evidence Report 19. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk/upload/pdf/High%20Performance%20Working%20-%20Case%20Studies_1.pdf.

UK Commission for Employment and Skills (2009) *Information to Intelligence, A common LMI framework for Sector Skills Councils*. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk//upload/pdf/UKCES%20LMI%20Report%20A5%20With%20Links.pdf.

UK Commission for Employment and Skills (May 2009) *Ambition 2020: World class skills and jobs for the UK*. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk/upload/pdf/UKCES_FullReport_USB_A2020.pdf.

UK Commission for Employment and Skills (April 2009) *Five Year Strategic Plan 2009-2014*. UK Commission for Employment and Skills, Wath-upon-Dearne. Available: http://www.ukces.org.uk/upload/pdf/5YSP%20FINAL%20D%20090501_3.pdf.

References for Spotlight Feature: International labour migration to the UK

[i] Ipsos Mori (2010) *Monthly Issues Index*. Ipsos Mori, London. Available: http://www.ipsos-mori.com/researchpublications/researcharchive.aspx.

[ii] Green, A., Baldauf, B. and Owen, D. (2009) *Short-term Mobility - Report to the European Commission for Study on workers' mobility, Lot 2: Short-term international assignments*. Institute for Employment Research, University of Warwick, Coventry.

[iii] Department of Economic and Social Affairs Statistics Division (1998) *Recommendations on Statistics of International Migration, Revision 1*. Statistical Papers Series M, No. 58, Rev. 1. United Nations, New York.

[iv] Office for National Statistics (2010) *Annual Population Survey, January - December 2009.* Office for National Statistics, Newport.

[v] Gordon, I., Scanlon, K., Travers, T. and Whitehead, C. (2009) *Economic impact on London and the UK economy of an earned regularisation of irregular migrants to the UK*. Greater London Authority, London.

[vi] Woodbridge, J. (2005) *Sizing the unauthorised (illegal) migrant population in the United Kingdom in 2001*. Home Office Online Report 29/05. Home Office, London.

[vii] Office for National Statistics (2010) *Migration Statistics Quarterly Report No 6: August 2010*. Office for National Statistics, Newport.

[viii] Office for National Statistics *Long-Term International Migration (LTIM) tables: 1991 - latest*. Office for National Statistics, Newport. Available: http://www.statistics.gov.uk/statbase/Product.asp?vlnk=15053.

[ix] Department for Work and Pensions (2003 – 2010) *National Insurance Number Allocations to Adult Overseas Nationals entering the UK*. Department for Work and Pensions, London. Available: http://research.dwp.gov.uk/asd/asd1/niall/index.php?page=nino_allocation.

[x] Blanchflower, D., Saleheen, J. and Shadforth, C. (2007) *The Impact of the Recent Migration from Eastern Europe on the UK Economy*. External MPC Unit Discussion Paper No. 17. Bank of England, London.

[xi] Blanchflower, D. and Shadforth, C. (2009) 'Fear, unemployment and migration', in *The Economic Journal*, *119*, F136-F182. Wiley-Blackwell, Chichester.

[xii] Bauere, V., Densham, P., Millar, J. and Salt, J. (2007) 'Migrants from Central and Eastern Europe: local geographies', in *Population Trends*, *129*, 7-19. Office for National Statistics, Newport.

[xiii] Green, A., Owen, D., Jones, P., Owen, C., Francis, J. and Proud, R. (2008) *Migrant Workers in the South East Regional Economy*. Report prepared for the South East England Development Agency and partners. Guildford.

[xiv] Clancy G. (2008) 'Employment of foreign workers in the United Kingdom: 1997 to 2008', in *Economic & Labour Market Review*, *2 (7)*, 18-36. Office for National Statistics, Newport.

[xv] Coleman , J. (2010) *Employment of Foreign Workers: 2007-2009*. Office for National Statistics, Newport.

[xvi] Drinkwater, S. (2010) 'Immigration and the Economy', in *National Institute Economic Review*, *213*, R1-R4. National Institute for Economic and Social Research, London.

[xvii] Huber, P., Landesmann, M., Robinson, C. and Stehrer, R. (2010) 'Migrants' Skills and Productivity: a European Perspective', in *National Institute Economic Review*, *213*, R20-R34. National Institute for Economic and Social Research, London.

[xviii] MacKenzie, R. and Forde, C. (2009) 'The rhetoric of the 'good worker' versus realities of employers' use and the experience of migrant workers', in *Work, Employment and Society*, *23*, 142-159. British Sociological Association, Durham.

[xix] Anderson, B. (2010) 'Migration, immigration controls and the fashioning of precarious workers', in *Work, Employment and Society*, *24*, 300-317. British Sociological Association, Durham.

[xx] Coats, D. (2008) *Migration Myths: Employment, Wages and Labour Market Performance*. The Work Foundation, London.

[xxi] House of Lords Select Committee on Economic Affairs (2008) *The Economic Impact of Immigration*. HL Paper 82-I. The Stationery Office, London.

[xxii] Lemos, S. and Portes, J. (2008) *The impact of migration from the new European Union Member States on native workers*. Department for Work and Pensions, London.

[xxiii] Wadsworth, J. (2010) The UK labour market and immigration. *National Institute Economic Review*, *213*, R35-R42. National Institute for Economic and Social Research, London.

List of previous publications

Executive summaries and full versions of all these reports are available from www.ukces.org.uk

Evidence Report 1
Skills for the Workplace: Employer Perspectives

Evidence Report 2
Working Futures 2007-2017

Evidence Report 3
Employee Demand for Skills: A Review of Evidence & Policy

Evidence Report 4
High Performance Working: A Synthesis of Key Literature

Evidence Report 5
High Performance Working: Developing a Survey Tool

Evidence Report 6
Review of Employer Collective Measures: A Conceptual Review from a Public Policy Perspective

Evidence Report 7
Review of Employer Collective Measures: Empirical Review

Evidence Report 8
Review of Employer Collective Measures: Policy Review

Evidence Report 9
Review of Employer Collective Measures: Policy Prioritisation

Evidence Report 10
Review of Employer Collective Measures: Final Report

Evidence Report 11
The Economic Value of Intermediate Vocational Education and Qualifications

Evidence Report 12
UK Employment and Skills Almanac 2009

Evidence Report 13
National Employer Skills Survey 2009: Key Findings

Evidence Report 14
Strategic Skills Needs in the Biomedical Sector: A Report for the National Strategic Skills Audit for England, 2010

Evidence Report 15
Strategic Skills Needs in the Financial Services Sector: A Report for the National Strategic Skills Audit for England, 2010

Evidence Report 16

Strategic Skills Needs in the Low carbon Energy generation Sector: A Report for the National Strategic Skills Audit for England, 2010

Evidence Report 17
Horizon Scanning and Scenario Building: Scenarios for Skills 2020

Evidence Report 18
High Performance Working: A Policy Review

Evidence Report 19
High Performance Working: Employer Case Studies

Evidence Report 20
A Theoretical Review of Skill Shortages and Skill Needs

Evidence Report 21
High Performance Working: Case Studies Analytical Report

Evidence Report 22
The Value of Skills: An Evidence Review

Evidence Report 23
National Employer Skills Survey for England 2009: Main Report

Evidence Report 24
Perspectives and Performance of Investors in People: A Literature Review

Evidence Report 25
UK Employer Perspectives Survey 2010

Evidence Reports present detailed findings of the research and policy analysis generated by the Research and Policy Directorate of the UK Commission for Employment and Skills. The Reports contribute to the accumulation of knowledge and intelligence on a range of skills and employment issues through the publication of reviews and synthesis of existing evidence or through new, primary research.

UKCES
3 Callflex Business Park
Golden Smithies Lane
Wath-upon-Dearne
South Yorkshire
S63 7ER
T +44 (0)1709 774 800
F +44 (0)1709 774 801

UKCES
28-30 Grosvenor Gardens
London
SW1W 0TT
T +44 (0)20 7881 8900
F +44 (0)20 7881 8999

This document is available at
www.ukces.org.uk under ‘publications’

ISBN 978-1-906597-67-2