

Skilled Shortage Sensible

Second review of the recommended
shortage occupation lists for the
UK and Scotland: Autumn 2009

Migration Advisory Committee Report

October 2009



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Chairman's foreword



This report presents the second review of the recommended shortage occupation lists for the UK as a whole and for Scotland by the Migration Advisory Committee (MAC).

The shortage list is one of three main routes of entry under Tier 2 of the Points Based System. The other two main routes – the Resident Labour Market Test and intra-company transfers – were analysed in the MAC's August 2009 report *Analysis of the Points Based System: Tier 2 and dependants*, where 16 recommendations were made, and subsequently all accepted by the Government.

Rising unemployment, falling employment and vacancies and a high redundancy rate indicate that the British labour market is in turmoil consequent on the global recession. But it must not be assumed that all labour shortages therefore disappear. Some do, and this is reflected in the removal of some engineering and construction-based occupations from the list. Three other types of labour shortages are less affected by recession. First, where the UK has previously invested in insufficient training it is necessary to look abroad: examples include some hospital consultant specialists. Second, where public spending may not be able to rise

to address the shortage: NHS pharmacists for example. Third, the UK is a global leader in the arts and therefore highly skilled ballet and contemporary dancers remain on the list.

Fewer than 500,000 jobs, less than 2 per cent of employees (i.e. all UK employees, not just immigrants) are in occupations on our recommended shortage lists. The corresponding figure a year ago was approximately 700,000.

In order to be placed on the lists the occupation or job title must pass three hurdles: it must be skilled; there must be a labour shortage; and it must be sensible to bring in non-EEA labour to fill the shortage. Where it is not sensible, even where occupations pass the first and second hurdles, they are not placed on the list. In this report, we have left some occupations off the list on the basis that they do not pass the sensible test.

For the time being, skilled chefs remain on our recommended list. However, we have not yet seen fully convincing evidence that Chinese, Bangladeshi and Indian restaurants are making a concerted and sustained effort to train UK labour and, for reasons set out in the report, we are minded to remove skilled chefs from our recommended list in 2010 unless there is evidence of a coherent strategy to train substantial numbers of chefs being in place by then.

We wish to further strengthen our links with the UK Commission for Employment and Skills and the various Sector Skills Councils in order to encourage the accumulation of UK human capital. Our reports are, hopefully, both a catalyst and a resource allocation signal concerning training requirements in the UK labour force.

The MAC is once again indebted to its secretariat for its professionalism, hard work, initiative and excellent organisation.

A handwritten signature in black ink, reading "David Metcalf". The signature is written in a cursive, flowing style with a large initial 'D'.

Professor David Metcalf CBE

The Migration Advisory Committee and secretariat

Chair



Professor David Metcalf CBE

Members



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Summary

In spring 2008 the Migration Advisory Committee (MAC) published its first partial review of its recommended shortage occupation lists (one for the whole of the UK and one specifically for Scotland). This report provides the second partial review of those lists.

The shortage occupation route is one of the points of entry under Tier 2 of the Points Based System (PBS) for immigration from outside the European Economic Area (EEA).

Following our first recommended shortage occupation lists in autumn 2008, the Government announced in November 2008 that it accepted our recommended shortage occupation lists in full, with the temporary addition of social workers. The shortage occupation lists became operational with the introduction of Tier 2 of the PBS in November 2008. In May 2008 the Government fully accepted our recommendations contained in the partial review.

In this report we review the following occupations: all healthcare and engineering occupations; chefs; teachers (further/higher, secondary, primary, and special needs education teaching professionals); town planners; managers in construction; quantity surveyors; ship and hovercraft officers; veterinary surgeons; sheep shearers; work riders; ballet dancers; skilled fish filleters; and meat boners and trimmers. All the occupations included in our original recommended shortage occupation lists have now been reviewed at least once since our first recommendations in 2008.

The UK labour market context and immigration context

The UK is in the midst of a severe recession, which is impacting on the labour market. Unemployment is still rising, while employment and vacancies are falling. In this context, we expect some labour shortages to be alleviated as a result of slackening labour market conditions; our recommendations also reflect a particular concern to avoid displacement of the resident workforce at a time of lay-offs and rising unemployment. Nevertheless, the economic downturn will not affect all sectors and occupations in the same way and some shortages will persist in spite of the downturn. Public sector occupations, for example, may be less affected by the business cycle. In other specialist areas, the UK's position at the peak of global competition for talented individuals may also create shortages.

Nursing is the occupation that has made the greatest use of the shortage occupation route to date, followed by chefs and cooks, care assistants and home carers, and secondary teachers. Of the top ten occupations, the majority are concerned with healthcare and related activities.

Approach and methodology

We have applied the general conceptual approach used in our previous reports to drawing up the shortage occupation lists for the UK and Scotland. Inclusion of an occupation or job title on our shortage occupation lists requires that it is skilled, it is suffering from a labour shortage and it is sensible to fill the shortage using labour from outside the EEA.

When addressing these questions, we used a hybrid method that combined the consistency and comprehensiveness of a top-down approach (using national-level data) with the fine-grained detail and contextualisation of a bottom-up method (using evidence relating to particular categories of jobs and sectors).

We again worked with the Standard Occupational Classification 2000 (SOC2000), which breaks the labour market down into 353 occupations, of which 192 are sufficiently skilled to qualify under Tier 2 of the PBS, according to our analysis.

For the top-down approach we analysed the best and most relevant national labour market data. Bottom-up evidence came from examination of individual occupations and job titles. Crucially, this was informed by engagement with, and evidence from, a variety of stakeholders, including in face-to-face meetings, workshops and written submissions of evidence.

Results

Our new recommended shortage occupation lists for the UK are set out in Chapter 8. The Government will announce in due course whether it is going to accept our recommendations.

Although it is not possible to calculate precise numbers, we estimate that the occupations on our new UK list account for fewer than 500,000 employees, less than 2 per cent of total employment in the UK. This estimate relates to the number of people (immigrants and non-immigrants) currently working in these occupations and job titles. It does not indicate

potential flows of immigrants into job titles and occupations on the list, nor the number of vacancies currently available.

We recommend a revised list of healthcare and engineering occupations, with some additions and removals, and the continued inclusion of chefs, ballet dancers, work riders, veterinary surgeons, secondary teachers in maths and science, and sheep shearers. We recommend the addition of special needs teachers and skilled meat boners and trimmers, and the removal of ship and hovercraft officers from the current list.

We confirm our previous removal of two occupations/job titles within the construction sector, which has been particularly affected by the economic recession.

The Scotland list

Scotland's economy is still in recession, which is impacting on the labour market to a similar extent to the UK as a whole: the employment rate and vacancy numbers are falling, while unemployment is rising.

Less than 1 per cent of the 69,800 vacancies reported in the most recent Scottish Employer Skills Survey were related to skill shortages. Most of these were in associate professional and technical occupations.

Our revised recommended shortage occupation list for Scotland is set out in Chapter 9. Again, the Government will announce in due course whether it is going to accept our recommendations.

Next steps

A list of the occupations we plan to review in the next six months is set out in Chapter 11. We plan to carry out a full review of all skilled occupations in autumn 2010. However, we may recommend inclusion, or removal, of any occupation from the list at any time if we believe there is a robust case for doing this.

Stakeholder input is essential to inform our advice to the Government. We will continue to hold periodic meetings of our Stakeholder Panel and Forum, to visit employers and other stakeholders, and hold other events. We continue to welcome evidence from stakeholders. Chapter 11 details how to submit evidence to the MAC.

We are currently commissioning various research projects in order to inform potential refinements to our methodology. We will draw on the findings and results of these projects as they progress. Although a comprehensive review of our top-down methodology to identify shortage in skilled occupations is not planned until our complete review in autumn 2010, we will report and consult on our plan to revise our methodology in our next partial review in spring 2010.

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Chapter 1: Introduction

1.1 The Migration Advisory Committee

- 1.1 The Migration Advisory Committee (MAC) was set up by the Government in 2007 as an independent non-departmental public body to provide evidence-based advice to the Government on where shortages of skilled labour can sensibly be filled by immigration from outside the European Economic Area (EEA).

1.2 Our work on shortage occupations

- 1.2 Our first report in January 2008 set out our preliminary comments on data and methodology in relation to occupation shortages, followed by a fuller report on our methodology one month later (Migration Advisory Committee 2008a and 2008b respectively). We published our first recommended shortage occupation lists in autumn 2008 (*Skilled, Shortage, Sensible: The recommended shortage occupation lists for the UK and Scotland*, Migration Advisory Committee, 2008c), and completed one partial review of the shortage occupation lists in spring 2009 (Migration Advisory Committee, 2009b).
- 1.3 In the autumn 2008 report, we said that we intended to regularly review the shortage occupation lists, with a partial review every six months and a full review at least every two years. Following the first partial review in spring 2009, this report represents the second partial review and as such it

does not cover the whole of the labour market. However, between the spring 2009 report and this present review, all of the occupations included on our original recommended shortage occupation lists will have been reviewed at least once since our first recommendations in autumn 2008.

- 1.4 An advantage of partial reviews of the lists every six months is that we are able to look at some occupations in much greater detail and to work closely with expert bodies and employers to improve the evidence provided to us.
- 1.5 A further advantage of such reviews is that we are able to consider how the list should evolve in response to changing economic circumstances. It is clear from the economic data set out in Chapter 2 of this report that the UK is in the midst of a severe recession, which is impacting on the labour market. In this context, we expect some labour shortages to be alleviated as a result of slackening labour market conditions.
- 1.6 Our recommendations also reflect a particular concern to avoid displacement of the resident workforce at a time of lay-offs and rising unemployment. Nonetheless, the economic downturn will not affect all sectors and occupations in the same way and some shortages will persist in spite of the downturn. Public sector occupations, for example, may be less affected by the business cycle. In other specialist areas, the UK's position at the peak of

global competition for talented individuals may also mean that there are ongoing shortages.

- 1.7 Nevertheless, in light of the current recession and its impact on the labour market, we considered it essential that all occupations included in our first recommended shortage occupation lists be reviewed in 2009. This allows us to examine occupations where shortages may have been eliminated by the economic situation. Conversely, since shortages are generally less likely to emerge during a recession (although it is not impossible), we decided that our primary focus should be on examining in detail those occupations where shortages have already been asserted, rather than undertaking a full review covering the whole labour market.
- 1.8 The occupations we examine in this report include: all healthcare and engineering occupations; chefs; teachers (further/higher, secondary, primary, and special needs education teaching professionals); town planners; managers in construction; quantity surveyors; ship and hovercraft officers; veterinary surgeons; sheep shearers; work riders; ballet dancers; skilled fish filleters; and meat boners and trimmers.
- 1.9 We have commissioned several research projects to inform potential changes to the methodology we use to determine which occupations we should recommend for inclusion on the shortage occupation lists. These projects are ongoing and some of them have produced interim reports. We discuss these projects in more detail alongside the relevant recommendations contained in the recent House of Commons Select Committee on Home Affairs report on the Points Based System (Home Affairs Select Committee, 2009) in Chapter 10.

1.3 Policy context

- 1.10 In addition to the work on the shortage occupation lists, the Government can ask the MAC to provide advice on other immigration issues from time to time. In December 2008 we published a report on the impact of lifting the restrictions on Bulgarian and Romanian nationals' ability to work in the UK, and in April 2009 we published a report on the likely impact on the UK labour market of relaxing the transitional measures in respect of access to the labour market for nationals of the so-called A8¹ states that joined the EU in 2004 (Migration Advisory Committee 2008d and 2009a respectively).
- 1.11 In February 2009, we were asked to report on three questions with respect to the Points Based System (PBS) for immigration, namely:
- What further changes to the criteria for Tier 1 of the PBS should there be in 2010/11, given the changing economic circumstances?
 - Is there an economic case for restricting Tier 2 to shortage occupations only?
 - What is the MAC's assessment of the economic contribution made by the dependants of the PBS migrants and their role in the labour market?
- 1.12 Following a conceptual paper related to these three questions in April (Migration Advisory Committee, 2009c), we reported on the second and third questions in August 2009 (Migration Advisory Committee, 2009d). The Government has asked that we submit our report on the first of these questions by the end of October 2009.

¹ Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Slovakia and Slovenia.

- 1.13 Our recommendations for Tier 2 (Migration Advisory Committee, 2009d) reflected a desire to better align the policy with its objectives; in particular, that flows respond to labour market conditions without the need for constant amendments to the system. We did not see a case for restricting Tier 2 to shortage occupations only, nor for making changes to the shortage occupation route at the time.

1.4 Structure of this report

- 1.14 Chapter 2 provides the context for this report – it sets out information about the economy and labour market in the UK and immigration stocks and flows. Chapter 3 rehearses our methodology as set out in more detail in earlier reports, explains how this was applied to the evidence for this review and describes some minor amendments that we have made to our methodological approach.
- 1.15 Chapters 4–7 discuss individual occupations. Healthcare occupations are examined together in Chapter 4; Chapter 5 represents our first comprehensive review of engineering occupations since our initial recommended shortage occupation lists in autumn 2008; Chapter 6 covers the remainder of the occupations we have reviewed in this report, while Chapter 7 sets out those occupations where we received some evidence, but which we have not reviewed in this report. The result of the occupational reviews – an updated recommended shortage occupation list for the UK – is presented in Chapter 8.
- 1.16 The shortage occupation list for Scotland is provided in Chapter 9, together with relevant contextual data and discussion. Chapter 10 discusses developments to our methodology and briefly presents emerging findings from our research programme. We conclude the report in Chapter 11,

including discussion of future work and the timescale and process for submitting evidence to us.

1.5 Thank you

- 1.17 We are extremely grateful to the organisations and individuals who contributed to this report by giving us their views in person or by submitting evidence to us. We include throughout this report quotes (in boxes) from people and organisations that provided inputs to us.
- 1.18 Our next partial review will be published in spring 2010. We continue to welcome evidence from stakeholders to inform our work.

Chapter 2:

Economic and immigration context

2.1 Introduction

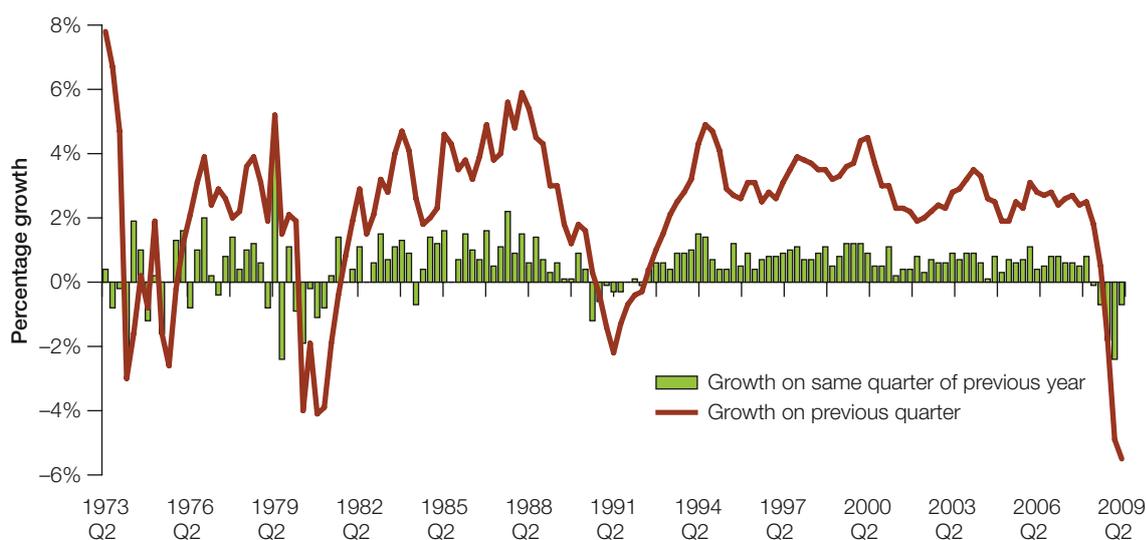
2.1 This chapter examines the wider background to our recommendations. First, we present a macro-economic overview of the UK economy. Next, we look at UK labour market data. Then we examine the latest data and evidence on immigration stocks and flows and the impact of the UK and global economic downturn on migration.

2.2 The UK economy

2.2 From 1992 to 2007 the UK experienced a sustained period of growth in Gross

Domestic Product (GDP), averaging 2.8 per cent per annum. In contrast, Figure 2.1 shows that the UK economy has been in recession for five quarters, beginning in the second quarter of 2008. GDP contracted by 5.6 per cent over this period and has fallen at its largest annual rate for over 50 years. However, the rate of decline in the second quarter of 2009 was less severe than the preceding quarter, and the National Institute of Economic and Social Research (NIESR) (2009a) estimates that GDP rose by 0.3% in the three months to August 2009.

Figure 2.1: One quarter and four quarter growth of real Gross Domestic Product, UK, 1973 Q2 to 2009 Q2



Note: Seasonally adjusted, market prices, chained volume measure, constant 2005 prices.
Source: Office for National Statistics (ONS), 2009a

- 2.3 The trend in the UK mirrors the position in the global economy, which is in a severe recession inflicted by a massive financial crisis and acute loss of confidence. The International Monetary Fund's (IMF) July 2009 World Economic Outlook update (2009) projects that world output is to decline by 1.4 per cent in 2009, its first annual decline since 1946, and to recover in 2010, growing by 2.5 per cent.
- 2.4 In terms of GDP, the UK performed slightly worse than the advanced economy average in 2008, and is expected by the IMF to fare worse in 2009 and 2010, as shown in Table 2.1.
- 2.5 Short- and medium-term forecasts are subject to exceptional uncertainty and have continued to be revised. A selection of forecasts from leading institutions published monthly by HM Treasury (2009) shows that the average expected rate of growth of UK GDP for 2009 has been revised downwards over the last 12 months and currently stands at -4.3 per cent, while for 2010 the average expected rate of UK growth is 1.0 per cent.
- 2.6 NIESR (2009b) forecasts UK GDP contraction of 4.3 per cent in 2009, followed by growth of 1.0 per cent in 2010. World GDP is expected to contract by 1.5 per cent in 2009 and to grow by 2.9 per cent in 2010. The Independent Treasury Economic Model (ITEM) Club (2009) says it expects UK GDP to fall by 4.4 per cent in 2009, but a modest recovery to begin in 2010. It also forecasts business investment to fall by 10.5 per cent in 2009 and a further 1.0 per cent in 2010. The Confederation of British Industry (CBI) (2009) forecasts quarter-on-quarter growth of GDP in each of the next four quarters.

Table 2.1: International Gross Domestic Product growth comparison

		Per cent annual growth		
		2008*	2009**	2010**
World		3.1	-1.4	2.5
Advanced economies ¹		0.8	-3.8	0.6
European Union		1.1	-4.7	-0.1
G7 countries				
	United Kingdom	0.7	-4.2	0.2
	United States	1.1	-2.6	0.8
	Japan	-0.7	-6.0	1.7
	France	0.3	-3.0	0.4
	Germany	1.3	-6.2	-0.6
	Canada	0.4	-2.3	1.6
	Italy	-1.0	-5.1	-0.1

Note: *Outturn. **Forecast. (1) There are 33 countries in the advanced economies group which are listed in Table B in the source document.

Source: International Monetary Fund, 2009

2.3 The UK labour market

2.7 In the past year there have been significant developments in the UK labour market. In this section we summarise the main labour market indicators in aggregate and by occupation.

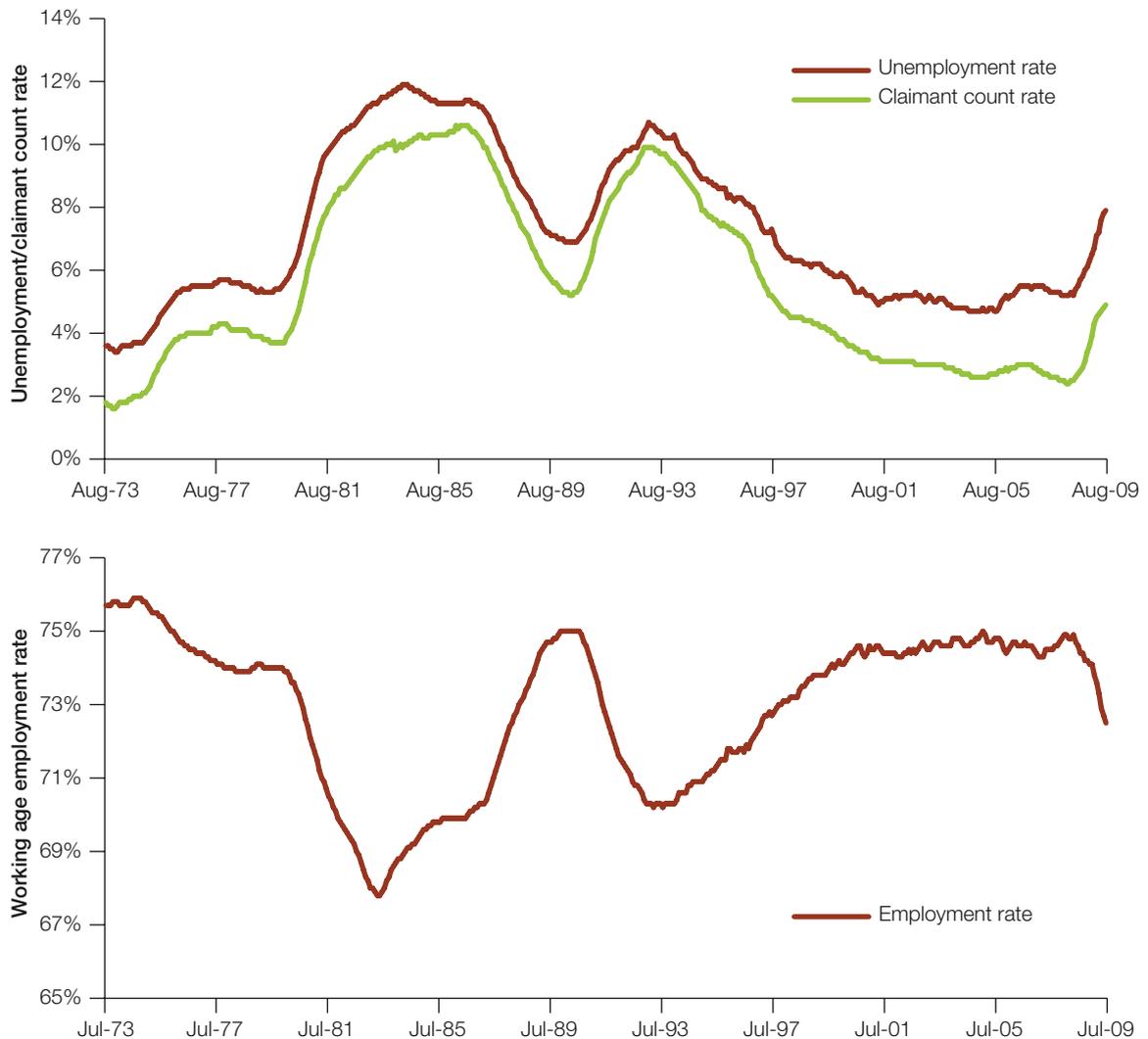
The labour market in aggregate

2.8 Figure 2.2 shows that the UK employment rate was 72.5 per cent in the three months to July 2009 (a level of 28.9 million), compared with a recent peak of 74.9 per cent 14 months earlier – a fall of 2.4 percentage points – and now stands at its highest level since 1997. In the last recession in the early 1990s, the employment rate fell by 2.8 percentage points in 14 months from its peak of 75.0 per cent.

2.9 It can also be seen that the unemployment rate (as defined by the International Labour Organisation (ILO)) was 7.9 per cent in the three months to July 2009 (a level of 2.5 million), from a recent low of 5.2 per cent 14 months earlier – a rise of 2.7 percentage points – and now stands at its lowest level since 1996. In the early 1990s, the rate rose by 2.3 percentage points in 14 months from its low of 6.9 per cent.

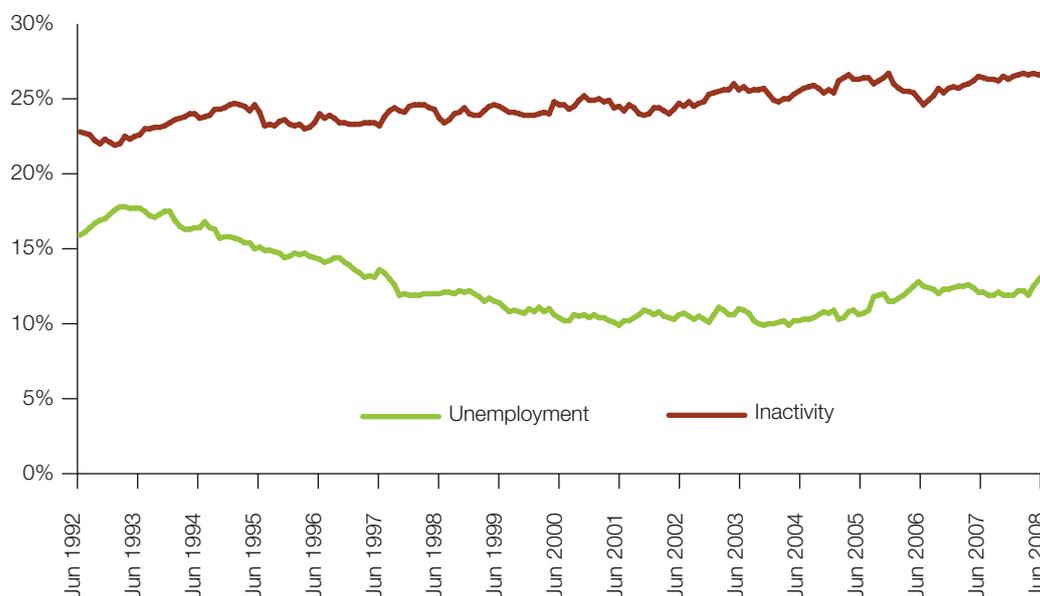
2.10 Figure 2.2 also shows that the claimant count rate increased to 5.0 per cent in August 2009 (a level of 1.6 million), from a recent low of 2.4 per cent 17 months earlier – a rise of 2.6 percentage points – and now stands at its highest level since 1997. In August 2009 there were 349,600 inflows to the claimant count – lower than the previous month – and 331,100 outflows from the claimant count – also lower than the previous month.

Figure 2.2: Unemployment rate, UK, Jun–Aug 1973 to May–Jul 2009. Working age employment rate, UK, May–Jul 1973 to May–Jul 2009. Claimant count rate, UK, Aug 1973 to Aug 2009



Note: Seasonally adjusted. The employment and unemployment rates are those calculated in the three months to the date shown. The employment rate is calculated from the Labour Force Survey (LFS) and is given by the number of working age individuals who did at least one hour's paid work in the week prior to their LFS interview or had a job that they were temporarily away from, as a proportion of the working age population. The claimant count consists of all people between the ages of 18 and State Pension age claiming Jobseeker's Allowance at Jobcentre Plus local offices. They must declare that they are out of work and capable of, available for and actively seeking work during the week in which their claim is made. The claimant count rate is the number of resident claimants expressed as a percentage of the sum of claimants and workforce jobs (mid-year estimates are used). The definition of unemployment is internationally agreed and recommended by the International Labour Organization, whereby every individual aged 16 or over is classified as either in employment, unemployed or economically inactive. Individuals are defined as unemployed if they are without a job, want a job, have actively sought work in the last four weeks and are available to start work in the next two weeks; or are out of work, have found a job and are waiting to start it in the next two weeks. The unemployment rate is calculated from the LFS and is given by the proportion of the economically active population (those who are in employment or unemployment) who are unemployed. The August 2009 claimant count rate is provisional. Source: Office for National Statistics, 2009b

Figure 2.3: Unemployment and inactivity rates of 18–24-year-olds, UK, Jun 1992 to Jun 2009



Note: Seasonally adjusted unemployment and inactivity rates are shown for those aged 18–24 not in full-time education.
Source: Office for National Statistics, 2009b

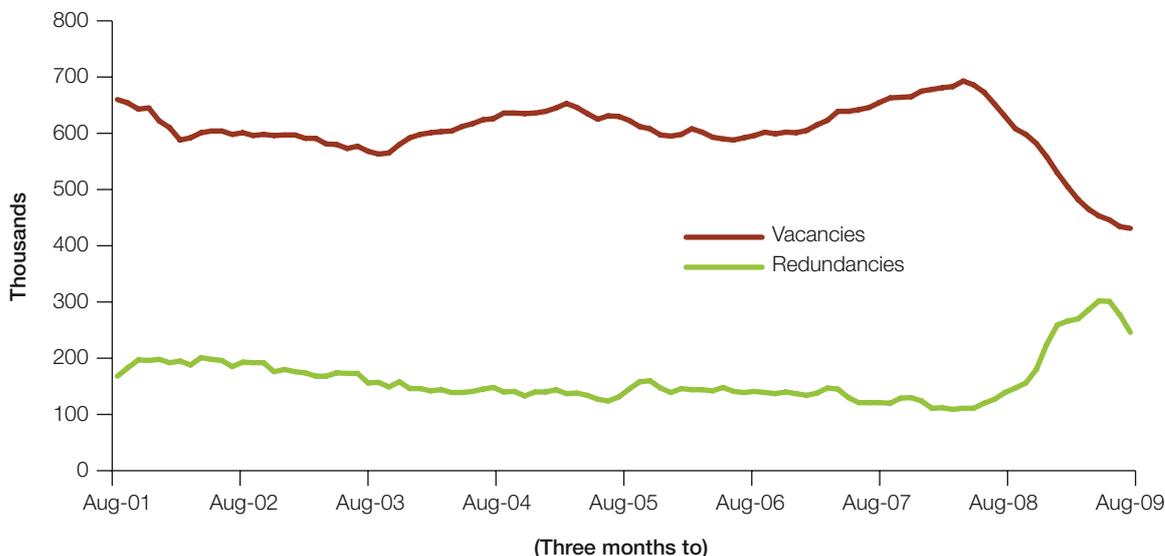
2.11 As shown in Figure 2.3, the unemployment rate of 18–24-year-olds increased particularly sharply in the year to June 2009, by nearly 5 percentage points. The inactivity rate of this age group also increased, but only by 1 percentage point in the year.

2.12 A selection of forecasts from leading institutions published by HM Treasury (2009) shows that, although mild GDP growth is expected in 2010, the claimant count is expected to continue to rise and reach 1.8 million by the end of 2009, and to reach 2.1 million a year later. The ITEM Club (2009) says it expects the number of unemployed as defined by the ILO to peak at 2.8 million (or 8.8 per cent of the labour force) next spring, while NIESR (2009b) predicts that the ILO unemployment rate will peak at 9.6 per cent in 2011.

2.13 Figure 2.4 shows that there were 246,000 redundancies in the three months to July 2009, up 56,000 from the three months to April 2009 and up 107,000 from a year earlier. The redundancy rate was 9.8 per 1,000 employees in the three months to July 2009.

2.14 According to the ONS Vacancy Survey, there were 434,000 job vacancies in the three months to August 2009, up slightly from the three months to July 2009 and down 174,000 from a year earlier – also shown in Figure 2.4. There were 1.7 vacancies per 100 employee jobs in the three months to August 2009.

Figure 2.4: Total redundancies, UK, Jun–Aug 2001 to May–Jul 2009.
Total vacancies, UK, Jun–Aug 2001 to Jun–Aug 2009



Notes: Seasonally adjusted. Total redundancies are estimated from the LFS and describe the number of people, whether working or not, who had been made redundant or had taken voluntary redundancy in the month of the survey or in the two calendar months prior to this. Total vacancies are estimated from the monthly ONS Vacancy Survey, which asks employers how many vacancies they have in total for which they are actively seeking recruits from outside their organisation, for example, by advertising or interviewing. The April 2009 vacancy figure is provisional.
Source: Office for National Statistics, 2009b

Figure 2.5: Average earnings growth, Great Britain, May–Jul 1997 to May–Jul 2009



Note: Seasonally adjusted. Average earnings are calculated by dividing the total amount paid by the total number of employees paid. The growth rate is equal to average earnings over a three-month period against the same three-month period a year previously. The July 2009 figures are provisional.
Source: Office for National Statistics, 2009b

2.15 Changes in earnings are an important indicator of labour market pressure. Figure 2.5 shows the deterioration in overall year-on-year earnings growth since the end of 2008. This is especially pronounced when bonuses are included, to the extent that the rate of earnings growth including bonuses fell below zero in the three months to March 2009, before rebounding to 1.7 per cent in the three months to July 2009. The recent trend has been driven largely by private sector services, which have experienced lower than average growth in earnings including bonuses for the last six months.

The labour market by occupation

2.16 In August 2009, the claimant count was higher than in August 2008 for all occupations at the 1-digit Standard Occupational Classification (SOC) level, as shown in Figure 2.6. Lower-skill occupations generally have higher numbers of claimants, and also the largest absolute increases in the claimant count. However, it is higher-skill occupations that have experienced the greatest percentage increases in claimant count over this period. For example, the claimant count for managers and senior officials increased by 122 per cent over the year to August 2009.

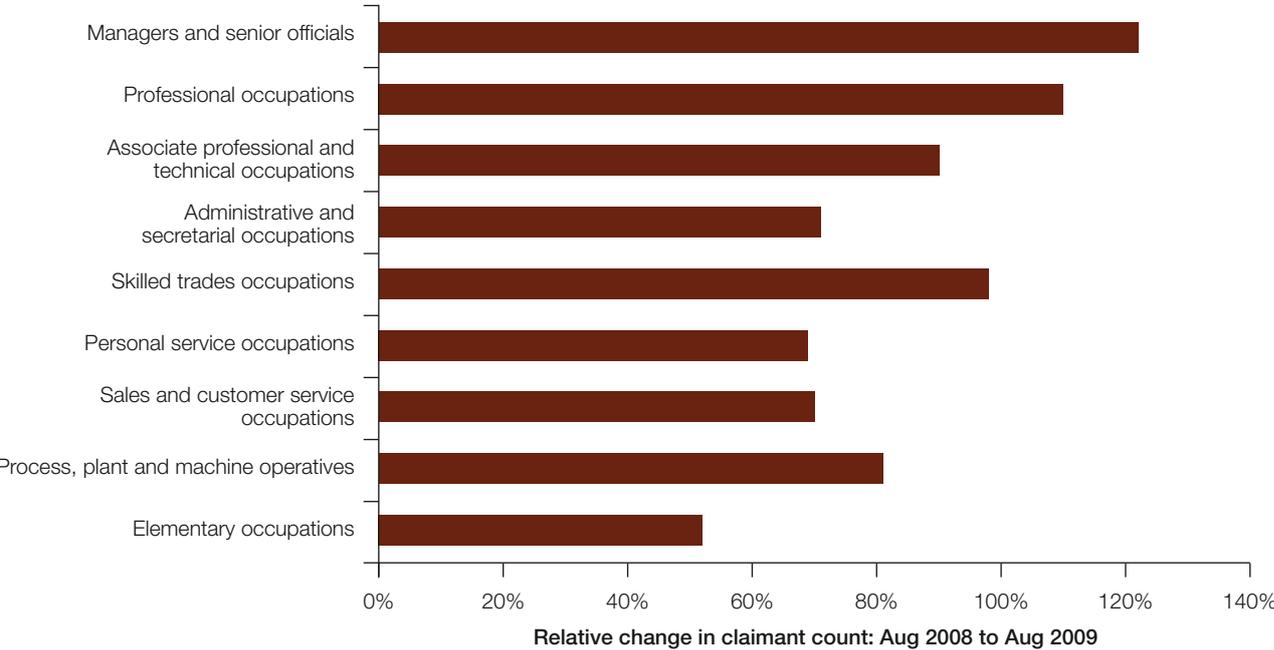
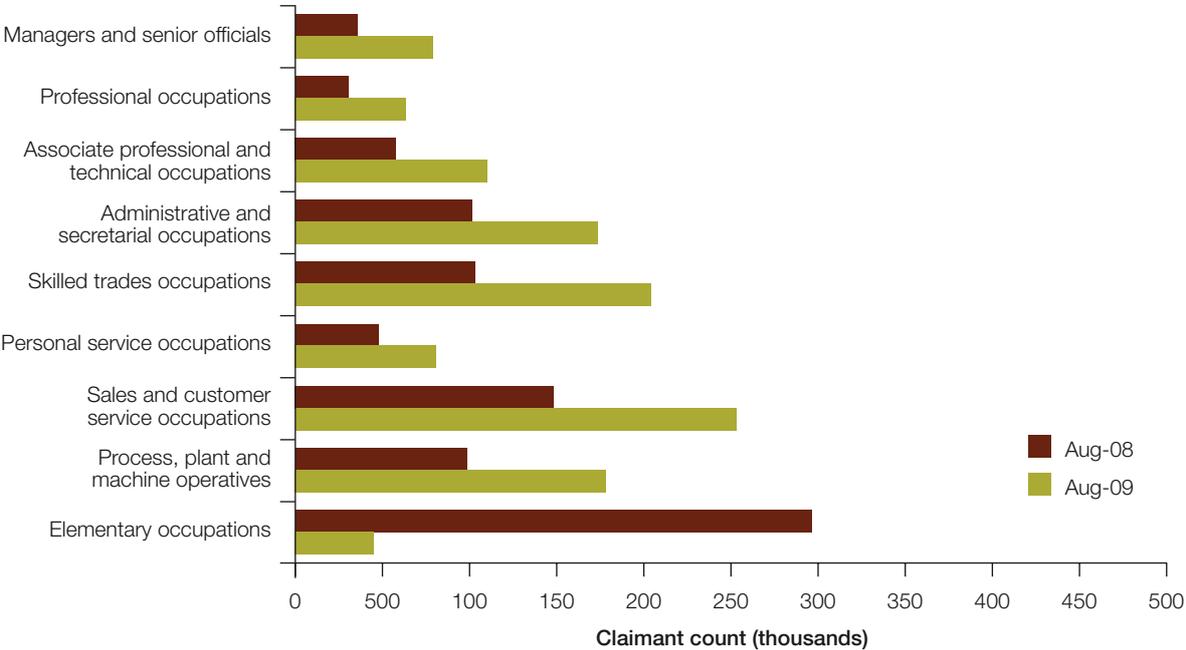
2.17 The number of vacancies relative to unemployment (the V/U ratio) is a good additional measure of the state of the labour market. In Figure 2.7 we present the

relative change in this ratio in Great Britain between August 2008 and August 2009 by occupation. Here, total vacancies are limited to those recorded at Jobcentre Plus and therefore account for only a proportion of the total number of vacancies in Great Britain. Unemployment data are given by the claimant count and therefore account for only a proportion of the total number of unemployed individuals. We assume that this measurement error over a 12-month period is approximately constant, allowing us to derive meaning from the change in this ratio over the same period.

2.18 In August 2009, for all major SOC groups, the V/U ratio had fallen substantially compared with a year ago, indicating that the supply of employees had risen relative to demand for all 1-digit occupations. The smallest relative decline was for personal service occupations (50 per cent), while the largest relative decline was for managers and senior officials (83 per cent).

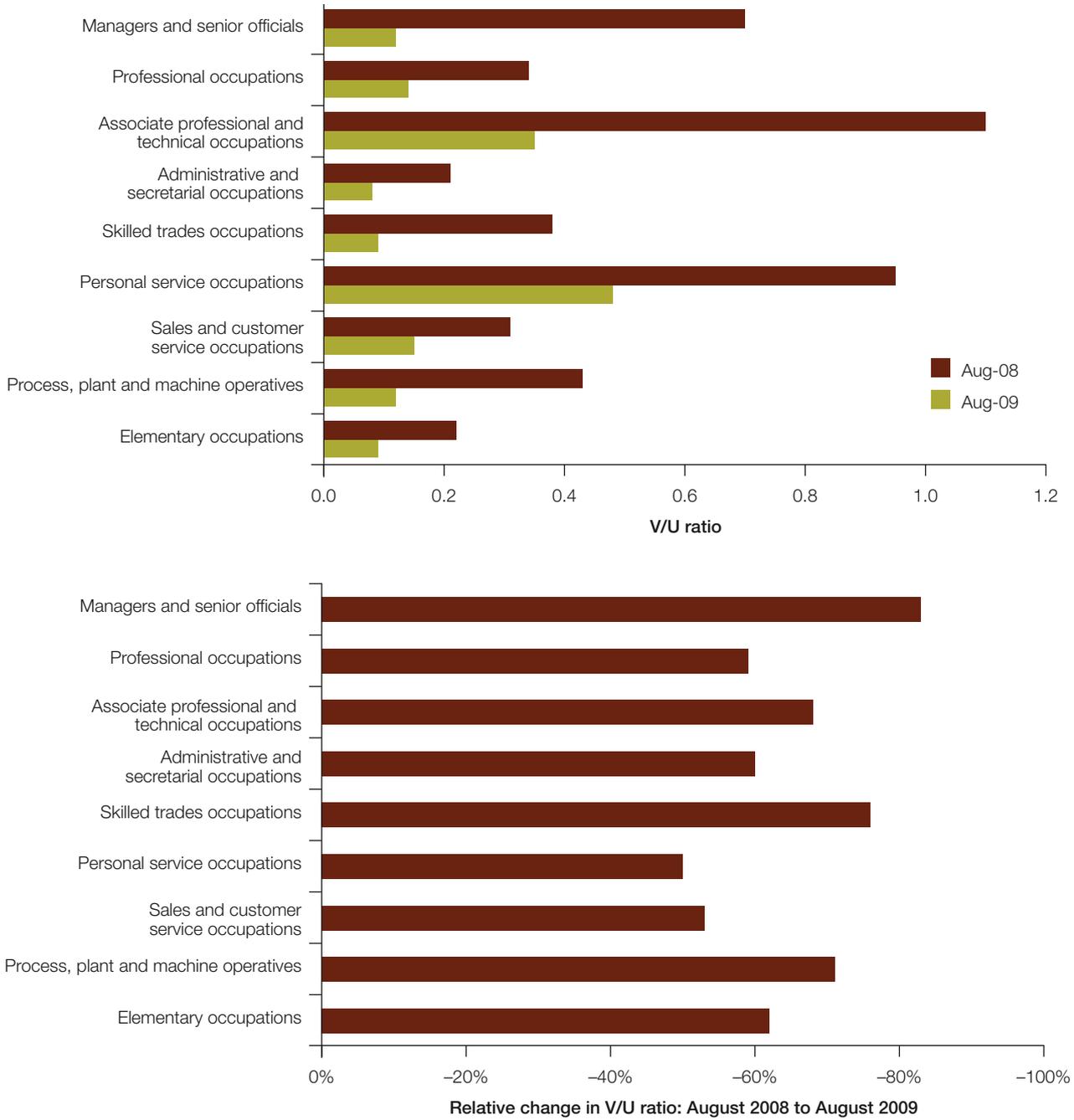
2.19 It is important to recognise that, for our work on shortage occupations, we analyse data at a much greater degree of disaggregation than is presented in this chapter. Trends within a 1-digit occupation may differ substantially from the average for that occupation. Data on the specific occupations we consider in this report are provided in Chapters 4–6.

Figure 2.6: Absolute claimant count and relative change in the claimant count by occupation, UK, Aug 2008 to Aug 2009



Note: Occupations are classified by 1-digit SOC, and are sought occupations. The claimant count is as defined in Figure 2.2.
 Source: Nomis (2009)

Figure 2.7: Absolute and relative change in notified Jobcentre Plus vacancies per claimant by occupation, Great Britain, Aug 2008 to Aug 2009



Note: Vacancies are live and unfilled and are recorded at Jobcentre Plus. The claimant count is as defined in Figure 2.2.
 Source: Nomis (2009)

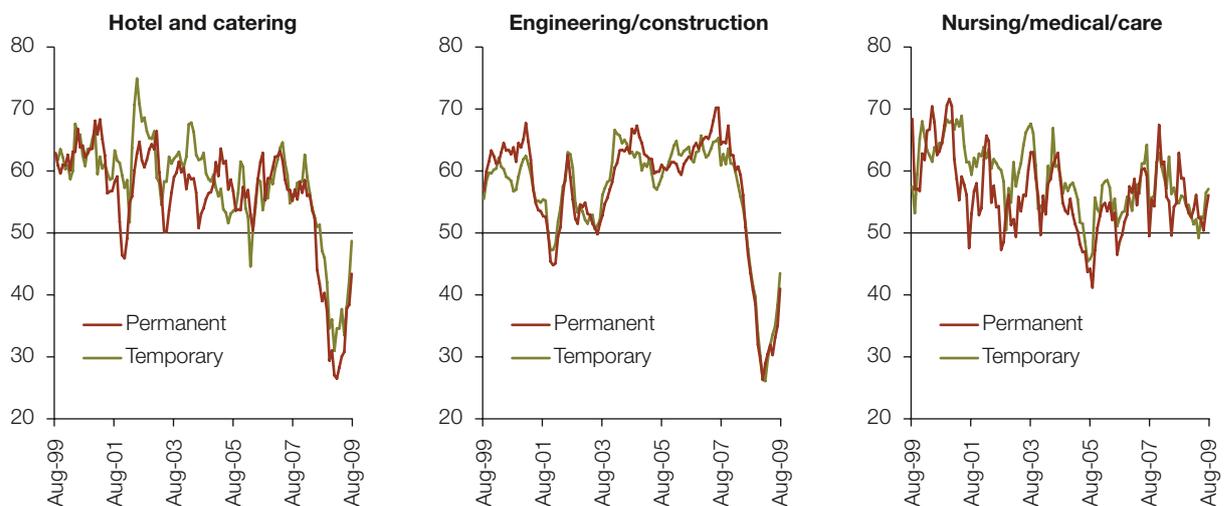
Other labour market information

2.20 There are a number of other sources of labour market information that are useful in addition to national statistics. The Recruitment and Employment Confederation (REC) together with KPMG LLP publish a monthly *Report on Jobs* showing demand for staff reported by recruitment consultants (REC/KPMG, 2009). Figure 2.8 shows the demand for staff in sectors relevant to the occupations discussed in later chapters of this report. It is clear that the recession has reduced demand in both the hotel and catering and the engineering and construction sectors. In engineering and construction, the reduction is particularly severe and follows

a period of growth in demand. Healthcare (nursing, medical and care) is the only sector that has not seen reduced demand for staff during the past year.

2.21 The Chartered Institute of Personnel and Development (CIPD) publishes quarterly labour market outlook reports. The latest survey (CIPD, 2009) of around 900 human resources professionals shows that more employers plan to decrease than increase workforce numbers in the next three months from June/July 2009. The survey also asked whether employers intended to recruit migrant workers during the next three months, with 8 per cent reporting an intention to do so.

Figure 2.8: Demand for staff in selected sectors as reported by recruitment consultants, Aug 1999 to Aug 2009



Note: Data derive from a monthly survey of a panel of 400 recruitment consultants. Data are presented in the form of diffusion indices: a reading of 50 indicates no change on the previous month; readings above 50 indicate stronger demand for staff, while those below 50 indicate weaker demand than a month ago. Series are seasonally adjusted. Source: REC/KPMG (2009). Data are copyright of Markit Economics and reproduced with permission

2.4 Immigration context

2.22 In our spring 2009 report on shortage occupations and our August 2009 report to the Government on Tier 2 and dependants (MAC 2009b, 2009d respectively), we noted that, by a number of measures, immigration to the UK appears to have fallen according to the most recent data.

2.23 Here we update some of the data presented in those reports, and look in a little more detail at both the shortage occupation route and immigration data that can be disaggregated by occupation.

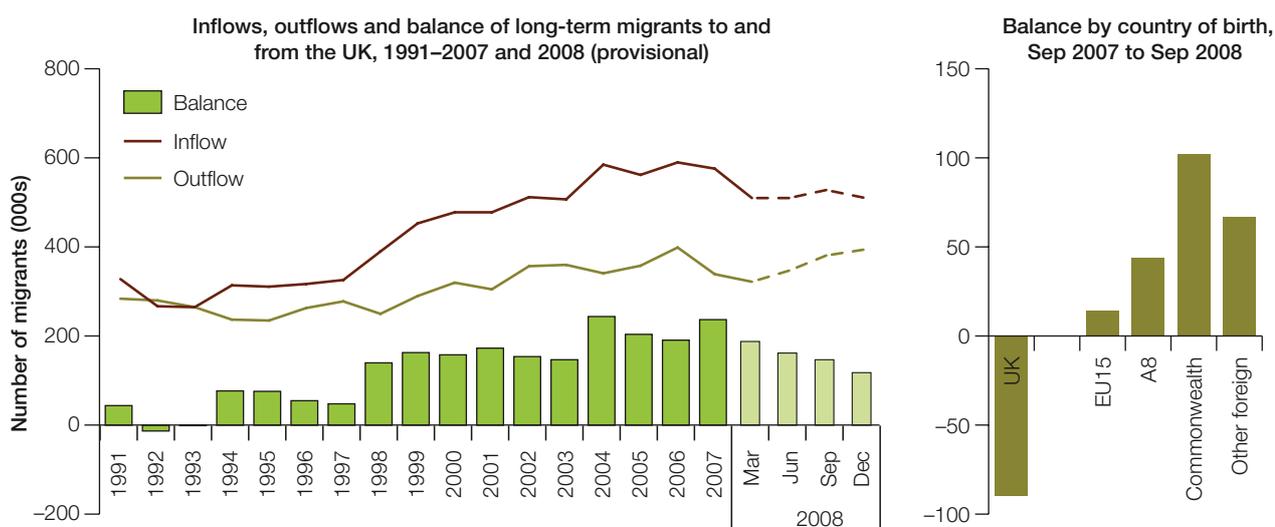
Immigration flows

2.24 Figure 2.9 shows the inflows, outflows and net balance of migration to and from the UK. The most recent data for 2008 show that, in contrast to trends over the past 10 years, inflows of long-term migrants have remained broadly steady over recent months. Furthermore, outflows of migrants

have increased, with the result that the net balance of migration to the UK in 2008 was significantly lower than in 2007.

2.25 In MAC (2009d), we presented data from the International Passenger Survey (IPS) showing that more non-European Economic Area (EEA) nationals migrating for work reasons (who either had a definite job or were looking for work) left the UK than entered in 2007. Equivalent figures for 2008 will not be available until late 2009. However, provisional IPS data show that net immigration for work-related reasons has fallen throughout 2008, and a net outflow of *all nationalities* migrating for work reasons was recorded in the year to December 2008 (Figure 2.10). However, some of those leaving the UK for work purposes may have entered for a variety of reasons: it is likely that some of the outflow is of people who previously came to the UK for formal study.

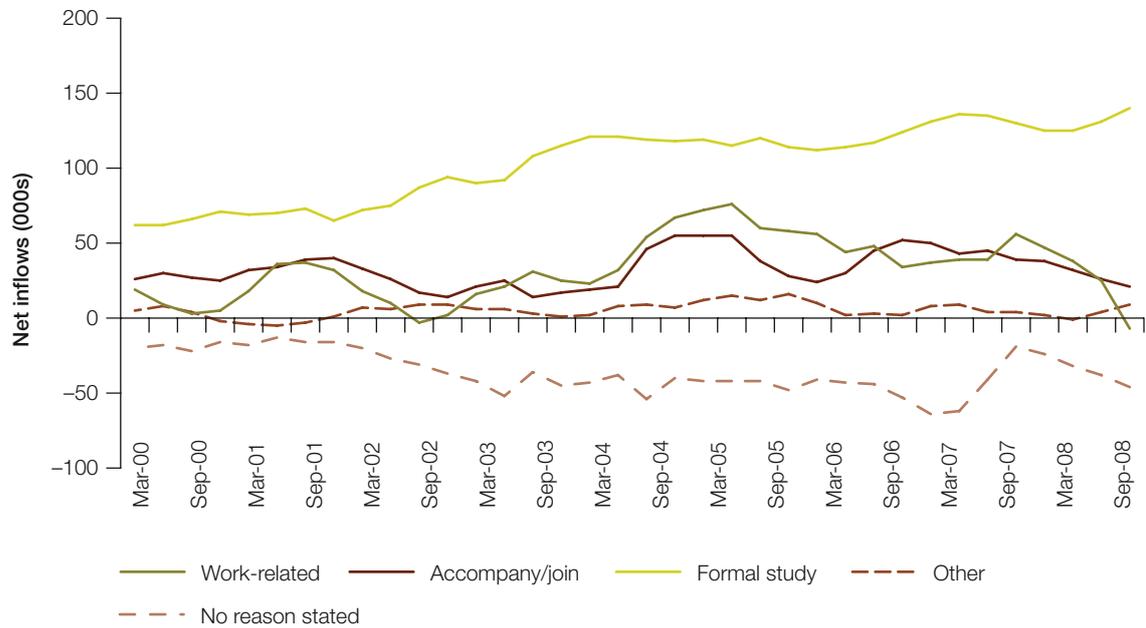
Figure 2.9: Flows of long-term migrants to and from the UK, 1991–2007 and 2008 (provisional)



Note: Long-term migration is defined in the survey as those intending to change their place of residence for a year or more. This definition includes all nationalities and countries of birth, including the UK. Chart shows calendar years 1991 to 2007. Provisional estimates for years ending in each quarter are provided for 2008.

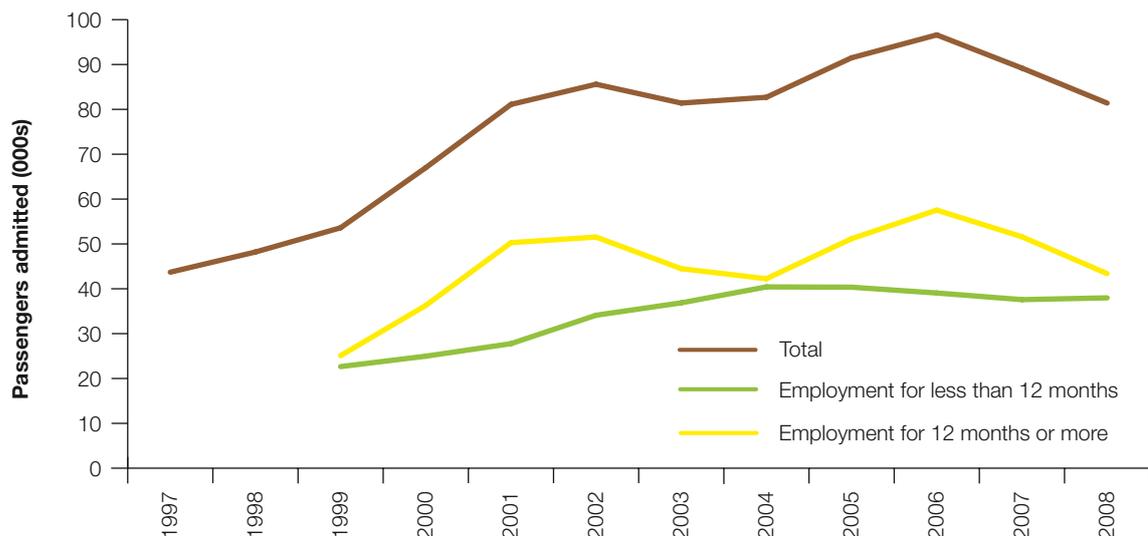
Source: International Passenger Survey, 1991–2008, published in ONS (2008; 2009c)

Figure 2.10: Balance of long-term migrants of all nationalities by reason for migration, year ending Mar 2000 to Dec 2008



Note: The figures describe the balance of all nationalities intending to change their place of residence for a year or more. Work-related includes those with a definite job and those seeking work. Figures are annual, presented on a rolling, quarterly basis. All estimates for 2008 are provisional.
 Source: International Passenger Survey, 2008

Figure 2.11: Passengers admitted to the UK: work permit holders, 1997–2007



Note: The above figures describe the number of non-EEA citizens holding a work permit who are admitted to the UK. A work permit is defined in this context as including intra-company transfers, the Sector Based Scheme, board-level posts, teachers, shortage occupations (non-Points Based System (PBS)), inward investment, sportspersons and entertainers, training and work experience, and those meeting the Resident Labour Market Test. PBS applications, seasonal agricultural workers, Highly Skilled Migrant Programme applicants and postgraduate doctors and dentists are not included in these figures. The figures presented here are not equivalent to those that describe the number of work permits issued each year (as not all individuals that are issued a work permit enter the UK).
 Source: Home Office (2009)

- 2.26 Falling net inflows of non-EEA immigration for work purposes are confirmed in Control of Immigration statistics which describe the number of passengers admitted to the UK who are subject to immigration control and holding a work permit (Figure 2.11 – see note for a definition of work permit holders). In order to be admitted to the UK for purposes of work, non-EEA economic immigrants who are subject to immigration control must have permission to work in the UK, whether through the Points Based System (PBS) or the previous work permit arrangements, and obtain entry clearance. Most recent data for 2008 show a continuing decrease in the number of passengers admitted who hold work permits, driven largely by reductions in the number of those admitted for 12 months or more.
- Points Based System**
- 2.27 The PBS was launched in 2008 and consists of five tiers. Tier 2 is for skilled workers with a job offer to fill gaps in the UK labour force and comprises five routes, one of which is the shortage occupation route.
- 2.28 Tier 1 of the PBS was launched in February 2008 in-country and became fully operational in June 2008. Tiers 2 and 5 were launched worldwide in November 2008. The PBS does not cover all migration to the UK; primarily it covers immigration of non-EEA visa nationals to the UK for work or study.
- 2.29 For our August report to the Government (MAC, 2009d), we presented some management information data from the PBS which are collected by the UK Border Agency (UKBA). On 26 August 2009, the Home Office published Control of Immigration statistics for 2008, which included data on passengers admitted and granted leave to remain under the PBS.
- 2.30 Control of Immigration figures differ from management information in a number of ways. For immigrants applying out-of-country, they represent those that have actually entered the UK: there may be a lag between obtaining a visa and entry. Not all those who obtain a PBS visa will necessarily travel to the UK, for a variety of reasons. Furthermore, management information is based upon initial decisions about applications, which may subsequently change.
- 2.31 Control of Immigration statistics published in August mostly reflect Tier 1 applications because Tier 2 was only launched towards the end of 2008, while the previous work permit system was in full operation for much of 2008. The figures show that just 3,240 principal PBS applicants were admitted to the UK from overseas during 2008 (Home Office, 2009). By comparison, there were approximately 9,060 approvals for out-of-country PBS applications (Tiers 1, 2 and 5) recorded in management information. One reason for the difference may be the lag between the applicant receiving their visa and travelling to the UK, particularly as most PBS applications were made only in the second half of the year, following the launch of Tier 1 worldwide on 30 June 2008.
- 2.32 For in-country applications, Control of Immigration statistics for those granted further or indefinite leave to remain under the PBS are derived from the same system as management information. These data recorded 49,600 decisions on applications for extensions of leave to remain or settlement, of which approximately 14 per cent were refusals (Home Office, 2009).

2.33 Control of Immigration statistics recorded 81,400 principal work permit holders (see definition in notes to Figure 2.11) admitted during 2008, while 42,090 decisions on applications for extensions of leave to remain or settlement were recorded, of which approximately 3 per cent were refusals.

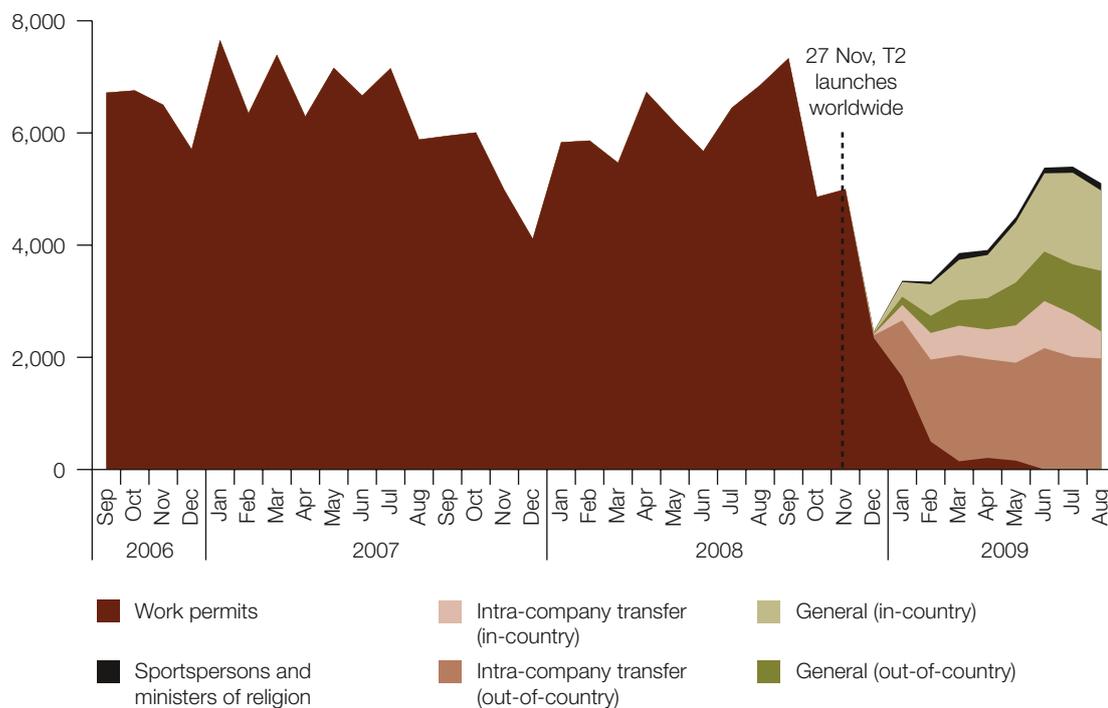
Tier 2

2.34 In looking at how much Tier 2 accounts for of all PBS applications, management information data are currently the only source of information available. These data are not national statistics and are subject to change. Nevertheless, entry clearance statistics for Tier 2, which are presented

in UKBA (2009), show 7,530 issues of entry clearance between 1 April 2008 and 31 March 2009, which very closely match the out-of-country management information for the same period.

2.35 Figure 2.12 provides an indication of the relative number of applications through Tier 2 of the PBS. These data are operational management information, not national statistics, and are therefore provisional and may be subject to change. The data most closely compare with those that describe the numbers of work permits issued under the previous work permit arrangements.

Figure 2.12: Approved monthly applications under Tier 2 and equivalent previous work permit arrangements, Sept 2006 to Aug 2009



Note: These data are provisional and are not national statistics. Figures are based on initial decisions and include both in-country and out-of-country applications and cover extensions and changes of employment, so do not equal the number of immigrants to which permits have been granted. Only those work permit routes broadly equivalent to routes under Tier 2 of the PBS are shown: intra-company transfer, labour market tested permits, shortage occupations and sponsored researchers.

2.36 We can tentatively say that, so far, volumes of approvals under Tier 2 have been lower than those under equivalent work permit routes. A majority of approvals under Tier 2 have been for intra-company transfers. Regrettably, these management information data about immigrant applications do not distinguish between the Resident Labour Market Test (RLMT) and shortage occupation routes.

2.37 To understand the relative size of the shortage occupation route under Tier 2, we can look at the number of certificates of sponsorship that have been used (Table 2.2). These do not equate to approved applications, as the certificates are allocated by the employer prior to an immigrant making an application. We also exclude ministers of religion and sportspersons, although a small number may be included within RLMT figures if the employer has stated that an RLMT has

been conducted. These data show that, to date, the shortage occupation route has accounted for around 9 per cent of applications under Tier 2. This is slightly higher than the proportion under the previous work permit arrangements, where shortage occupations accounted for 6 per cent of work permits issued (MAC, 2008c).

2.38 Table 2.2 also shows, for comparison, the numbers of migrant applications approved for Tier 2 routes. The number of applications approved is lower than the number of certificates, due to refusals of applications. However, the difference between the two is not large, and implies that data from the certificates will be broadly representative of approved applications. There may still be some errors in the certificates data, arising from incorrect information being entered by the employer (for example, about whether the migrant is in- or out-of-country).

Table 2.2: Certificates of sponsorship and migrant applications under selected Tier 2 routes, Nov 2008 to Aug 2009

	Certificates of sponsorship		Migrant applications approved ¹	
	Certificates used ²	Route as percentage of total	Applications approved	Percentage of applications made out of country
Tier 2 General	15,200	44	13,000	39
Of which RLMT ³	11,900	35	–	–
Of which shortage occupation	3,200	9	–	–
Intra-company transfers	19,200	56	18,600	75
Total	34,300	100	31,600	61

Notes: (1) It is not possible to distinguish between RLMT and shortage occupation routes in migrant applications.

(2) These figures describe 'used' certificates of sponsorship, where an application that corresponds to the certificate has been submitted, but not necessarily approved. They are management information and may be subject to change.

(3) RLMT figures include those immigrants switching from a post-study category, and may also include some ministers of religion where the employer has stated that an RLMT has been conducted.

Source: UK Border Agency management information data, Nov 2008 to Aug 2009

Occupations

- 2.39 Table 2.3 sets out the number of certificates of sponsorship issued by employers for shortage occupations where a migrant application has also been received. Only those occupations where all or part of the occupation has been included on our previous recommended shortage occupation lists in autumn 2008 or spring 2009 are included. Data are available at SOC level only rather than individual job titles, so may include job titles that are not included on the shortage occupation lists.
- 2.40 The table shows, as we might expect, wide variation among occupations in the use of the shortage occupation route. Certificates of sponsorship have been used for all but one of the SOC codes that include job titles on our previous shortage occupation lists. We discuss individual occupations where relevant in later chapters, but some general observations are worth noting.
- 2.41 Public sector (or primarily publicly funded) occupations tend to be significant users of the shortage occupation route, although many also use other routes within Tier 2. Chefs constitute the largest mainly private sector use of the shortage occupation list, and there is comparatively little use of other Tier 2 routes for this job title. Occupations where the shortage is in a skilled segment of a mostly unskilled occupation (e.g. chefs; fish filleters within SOC 8111) and where skills are not necessarily reflected in pay or qualifications (e.g. ballet dancers within SOC 3414) tend to make more use of the shortage route than other Tier 2 routes. However, other occupations also show high use of the shortage occupation route, suggesting it is of benefit to some employers.
- 2.42 Not shown in Table 2.3 are instances where an employer has stated that the job is for a shortage occupation but has classified it under a SOC code not included on the shortage occupation lists. These constitute approximately 9 per cent of all certificates used under the shortage occupation route. Some of these, for example in the agriculture and fishing trades and pharmacy managers, may simply be misclassifications of job titles that are on the shortage occupation lists. Others may be the result of employers misunderstanding the sponsor management system or the role of the shortage occupation lists within Tier 2 and, we assume, would be refused at the migrant application stage.
- 2.43 Table 2.4 sets out the top ten nationalities of immigrants recruited via the shortage occupation route. In general, the most common nationalities are also common to other routes within Tier 2 (MAC, 2009d). As with Tier 2 overall, Indian nationals are the most numerous among those recruited via the shortage occupation route. Filipino nationals are also very common among immigrants recruited via the shortage occupations route, particularly in comparison with the number of Filipino nationals recruited via other Tier 2 routes.

Table 2.3: Certificates of sponsorship used for occupations on previous recommended shortage occupation lists for Tier 2, Nov 2008 to Aug 2009

Occupation on shortage list (4-digit SOC 2000 classification)	Certificates used for shortage occupations	Total certificates used under Tier 2	Shortage certificates as percentage of total
3211 Nurses	604	2,015	30
5434 Chefs, cooks	575	697	83
6115 Care assistants and home carers	330	641	52
2314 Teacher, secondary education	314	686	46
2442 Social workers	154	167	92
2121 Engineers, civil	152	285	53
2211 Medical practitioners, e.g. doctors and surgeons	135	1,278	11
3214 Medical radiographers	116	143	81
2213 Pharmacists and pharmacologists	115	146	79
6139 Animal care occupations not elsewhere classified (n.e.c.)	70	86	81
3113 Technicians, engineering	48	145	33
2113 Physicists, geologists and meteorologists	43	149	29
3414 Dancers and choreographers	37	45	82
9119 Fishing and agriculture-related occupations n.e.c.	31	32	97
2112 Biological scientists and biochemists	29	123	24
5243 Lines repairers and cable jointers	28	28	100
2216 Veterinarians	26	33	79
2125 Engineers, chemical	19	77	25
3217 Pharmaceutical dispensers (pharmacists)	16	22	73
5215 Welders, welding trades	16	19	84
3222 Therapists, occupational	14	57	25
1122 Managers, construction	13	90	14
3218 Technicians, medical and dental	13	38	34
8111 Process operatives, food, drink and tobacco	13	14	93
2212 Psychologists	10	17	59
3434 Photographers and audio-visual equipment operators	7	13	54
2215 Dental practitioners (dentists)	6	41	15
3513 Ship and hovercraft officers	2	23	9
5216 Pipe fitters	2	15	13
3223 Therapists, speech and language	1	10	10
3415 Musicians	1	11	9
3229 Therapists n.e.c.	0	93	0

Note: These figures describe 'used' certificates of sponsorship, where an application that corresponds to the certificate has been submitted, but not necessarily approved. They are management information and may be subject to change. Previous recommended shortage occupation lists can be found in MAC (2008c) and MAC (2009b).
Source: UK Border Agency management information data, Nov 2008 to Aug 2009

Table 2.4: Top ten nationalities recruited via the shortage occupation route, Nov 2008 to Aug 2009

Nationality	Certificates used for shortage occupations	Total certificates used under Tier 2	Percentage of certificates used for shortage occupations
India	847	16,465	5
Philippines	361	1044	35
China	202	1308	15
South Africa	183	948	19
Australia	182	1,430	13
United States	170	3,983	4
Zimbabwe	133	469	28
Pakistan	120	653	18
Nigeria	116	469	24
New Zealand	93	445	21

Note: These figures describe 'used' certificates of sponsorship, where an application that corresponds to the certificate has been submitted, but not necessarily approved. They are management information and may be subject to change. Source: UK Border Agency management information data, Nov 2008 to Aug 2009

2.5 Immigration and the labour market in recession

- 2.44 A year on from the point at which the UK economy entered negative growth by official measures, it is worth reflecting on what impact the recession may have had on migration flows as well as outcomes for migrants in the UK labour market.
- 2.45 In times of recession we might expect that incentives to migrate, such as better employment opportunities and increased wages or standards of living, would reduce while the attractions of staying at home, such as proximity to family, remain the same or perhaps increase. As a consequence, inflows of economic migrants may be expected to fall, while outflows of migrants returning home are expected to increase. An example of this is the so-called 'buffer theory' which

supposes that temporary migrants can be brought in to fill shortages, but they will return home during economic downturns (Dobson *et al.*, 2009). This movement was thought to act as a buffer against the negative impacts on native workers during economic downturns.

- 2.46 But migration decisions are often more complicated than the economic performance of destination countries alone. Decisions will be made according to other factors, including family ties, social factors and economic conditions in home countries. The relative importance of different factors may also change as time progresses, for example because immigrants put down roots in their destination countries. Policy factors may also influence migration decisions, such as whether immigrants expect to be able to return if they were to leave.

2.47 Dobson *et al.* (2009) reviewed migration flows during three periods of economic downturn: 1974–77, 1980–84 and 1991–93. Their findings, although tentative, suggest that inflows did fall at the onset of periods of economic downturn, but that the relationship between migration inflows and the economic cycle is weak: these drops were typically temporary, and inflows recovered and returned to previous levels relatively quickly. Conversely, outflows of economic migrants did not appear to be upwardly influenced by economic downturn – in fact they tended to be reduced.

2.48 The Organisation for Economic Co-operation and Development (OECD) (2009) argues that particular relationships between the business cycle and immigration flows can also be found in some countries at particular times, but are by no means universal. Furthermore, the relationship may change over time and is observed to have weakened in some countries in the past two or three decades (OECD, 2009).

2.49 It is still too early to make a proper assessment of the extent to which migration flows are responding to the current economic downturn. There are considerable lags in the production of many of the national statistics which cover immigration. Furthermore, the introduction of the PBS has disrupted the time-series in administrative data from work permits.

2.50 Nevertheless, there are some indications that migration flows are responding to the economic downturn. Both Fix *et al.* (2009) and Dobson *et al.* (2009) looked at inflows of workers from the ‘A8’ countries, as measured by the Worker Registration Scheme, as evidence of an impact on inflows. They showed that inflows of A8 workers have continued to fall: new registrations of A8 workers in the first quarter of 2009 were around half those

in the same period in the previous year (UKBA, 2009). Evidence from the IPS shows that, for A8 nationals, increases in outflows have coincided with decreases in inflows during 2008 (ONS 2009c). This has resulted in a considerable reduction in net immigration of A8 nationals: in the last quarter of 2008, the balance of migration of A8 nationals was less than one quarter of that in the same period in the previous year. Nevertheless, there remains net positive immigration to the UK from the A8 countries.

2.51 Data presented earlier in this chapter from the IPS and from Control of Immigration statistics are also indicative of a potential response in inflows and outflows to the economic downturn.

2.6 Conclusions

2.52 The UK economy remains in a severe recession that is having a considerable impact on the labour market, with unemployment continuing to rise and employment rates continuing to fall. Slightly more positive news comes from the demand side, where recent figures show a small rise in the number of vacancies reported and a drop in the number of redundancies. A modest recovery in 2010 is anticipated by many forecasters; however, such predictions are subject to exceptional uncertainty. Improvement in the labour market may lag any economic recovery, so the context for this review is still a labour market suffering the effects of a severe downturn. We are mindful of this in our consideration of shortages for specific occupations.

2.53 Both high-skill and low-skill occupations are experiencing increases in unemployment and reductions in the ratio of vacancies to the stock of unemployed. Softer labour market data, however, show some sectoral

exceptions, notably the health sector, where employer surveys show that demand for staff is still strong.

- 2.54 The immigration data and literature present a mixed picture. There are reasons to expect inflows to reduce during times of economic downturn: an automatic stabiliser. At the same time, historical evidence is mixed and suggests that any response of inflows to the recession may be temporary. Lags in the data available and the introduction of the PBS hamper the drawing of any conclusions about the response of inflows to the recession. But there are some indications that the recession may have dampened immigration inflows.
- 2.55 The shortage route still accounts for a small proportion – around 9 per cent – of Tier 2, yet it is clear that it is an important element of the immigration system for some occupations. We are mindful of the use being made of the shortage occupation lists in our considerations of occupations for this review.

Chapter 3: Approach and methodology

3.1 Introduction

3.1 In this chapter, we summarise how we compiled the recommended shortage occupation lists. Before we discuss individual occupations in Chapters 4–7, first we set out the types of evidence we received and analysed, and how we considered the different occupations and individual job titles. Next, we summarise our methodological approach in terms of our ‘skilled’, ‘shortage’ and ‘sensible’ criteria. We follow with a discussion of the process by which we identified those occupations under review in this report, together with an outline of how we went about gathering evidence on those occupations. Finally, we discuss issues relating to the European Economic Area (EEA), the shortage occupation list for Scotland, and the UK countries and regions.

3.2 We have followed the general conceptual approach set out in Migration Advisory Committee (MAC) (2008c), and more detailed discussion of many of the issues discussed here can be found in that report.

3.3 We used a three-stage approach to drawing up the shortage occupation lists for the UK and Scotland:

- first, we considered whether individual occupations or job titles are sufficiently **skilled** to be included on the shortage occupation lists;
- second, we considered whether there is a **shortage** of labour within each skilled occupation or job; and

- finally, we considered whether it is **sensible** for immigrant labour from outside the EEA to be used to fill these shortages.

Top-down and bottom-up evidence

3.4 To produce the shortage occupation lists, we used a hybrid method that combined the consistency and comprehensiveness of a ‘top-down’ approach, using national data, with a more granulated ‘bottom-up’ approach, using other evidence submitted to us.

3.5 For the top-down approach, we analysed the most timely and most relevant national labour market data available. We carried out data analysis in-house and commissioned external research.

3.6 Key data sources used for our top-down analysis include the Labour Force Survey (LFS), the Annual Survey of Hours and Earnings (ASHE), the National Employers Skills Survey (NESS) and Jobcentre Plus (JCP) claimant count unemployment and vacancy data. In MAC (2008a), we set out in more detail the potential data sources available to us, and their relevance to what we want to achieve.

3.7 Bottom-up evidence for this review, as for previous reviews, came from an examination of the individual occupations and job titles. Crucially, this was informed by engagement with, and evidence from, a wide variety of stakeholders, including in face-to-face meetings, workshops set up to inform our work and written submissions of evidence.

- 3.8 We met with over 40 employers and organisations in the preparation of this report. We began writing to stakeholders in April 2009, requesting evidence, and we worked closely with those responding to ensure, where possible, that the evidence was submitted in line with the MAC's methodological approach. We received over 70 submissions of evidence.
- 3.9 We held an engineering workshop for key stakeholders on 27 March 2009. We also began a series of regional and country forum events to better access evidence in relation to our work and specifically to reach out to employers and organisations at a local and regional level. We have so far held events in Edinburgh, Belfast and Cardiff, which have been attended by over 120 organisations. We have also endeavoured to combine these events with visits to employers. Further such events, focusing on the English regions, will be held during 2009 and 2010.²
- 3.10 In the initial phase of work leading up to our first recommended shortage occupation lists in 2008, we made some allowance for the unfamiliarity that stakeholders had with the new process and the limited time available to assemble evidence. We made less allowance for this in the first shortage list review in early 2009, and have applied the same approach this time. We have produced a simple guide for submitting evidence and have outlined at the stakeholder events our methodology and the form of evidence that we require.
- 3.11 In future reviews we will continue to ask stakeholders to submit evidence in accordance with the methodological approach we have set out to justify inclusion of job titles or occupations on our recommended shortage occupation lists.
- 3.12 Further detail of our approach to collecting and analysing top-down and bottom-up evidence is provided in the rest of this chapter.
- Dovetailing**
- 3.13 Clearly, it is most helpful when the top-down and bottom-up data on any particular occupation point to the same conclusion. However, there are reasons why this will not always be the case.
- 3.14 On some occasions, the top-down and bottom-up data will point to conflicting conclusions because evidence relates to different levels of disaggregation. There may be a shortage of workers with specific skills within an occupation (for example, a shortage of teachers who can teach science or mathematics) but not in the broader occupational group as a whole (for instance, no shortage of teachers in general). If the bottom-up evidence relates to a more specific job title than the top-down evidence, then even when the two sets of evidence point in different directions they are not necessarily inconsistent with each other.
- 3.15 In addition, the usefulness of different indicators will sometimes vary between the top-down and bottom-up approaches. For instance, it may be difficult to obtain robust information on earnings growth within an occupation from sectoral or occupational bodies, while the national-level data can provide this. In contrast, it is difficult to measure the level of on-the-job training in some occupations using national-level data. These factors limit the extent to which we can corroborate top-down and bottom-up data against each other.

² Details can be found at www.ukba.homeoffice.gov.uk/aboutus/workingwithus/indbodies/mac/macfuturecommitteeevents/

3.16 Broadly speaking, we look for indicators of skilled, shortage and sensible in both the top-down and bottom-up evidence before placing occupations on the shortage list. However, our approach distinguishes between cases where top-down data are highly relevant and where they are less so. Crudely, cases can be categorised as follows:

- In cases where the top-down data are highly relevant, generally because the asserted shortage relates to the whole of the broad 4-digit occupation or a large part of it, we include occupations (see paragraph 3.19) or relevant job titles on our recommended shortage occupation lists if, overall, there is a combination of good top-down and good bottom-up evidence.
- If the top-down data are not highly relevant, generally because the assertion of shortage relates to a narrow category within the relevant Standard Occupational Classification (SOC), we include the occupation or relevant jobs on the lists if there is sufficient bottom-up evidence.

3.17 We did not include occupations on the shortage occupation lists where bottom-up evidence:

- did not satisfy our criteria, in that the evidence indicated either that the occupation is not skilled, or was not in shortage, or that it was not sensible to fill a shortage through migration or any combination of these; or
- was partial or not relevant, making it impossible to form a conclusion.

3.18 We had to use a degree of judgment when weighing 'strong' top-down evidence against 'weak' bottom-up evidence, or vice versa. Where we have made such judgments, we set them out explicitly in this report.

Occupations, job titles and jobs

3.19 Either occupations or job titles may be placed on the shortage occupation lists. We have applied the same approach to categorisation of occupations as set out in MAC (2008c). We base our work on the SOC 2000, utilising four levels of aggregation. The 'unit group' (4-digit) level, which is the level most relevant to our work, breaks down the labour market into 353 occupations and is the most detailed occupational breakdown available.

3.20 Many asserted and actual labour shortages occur at the sub-occupational or job title level. Where, in this report, we refer to job titles, we mean those job titles that are more specific in their nature than the SOC coding system allows. National-level data are not available at the job title level, meaning that bottom-up evidence is of particular importance in these cases.

3.21 Specific jobs filled by individuals have to be skilled to National Qualifications Framework (NQF) level 3 or above to qualify for Tier 2 of the Points Based System (PBS). This is equivalent to National Vocational Qualification (NVQ) level 3 or higher. The UK Border Agency (UKBA) provides guidance for employers and employees to assess the skill level of jobs filled by individual immigrants.

3.2 Is it skilled?

Theory and definitions

3.22 There is no unique, objectively defined measure of skill. Nonetheless, as individual jobs under Tier 2 of the PBS need to be skilled to at least NQF level 3, it follows that the shortage occupation lists should contain only occupations and job titles at this level or above. We assess this by examining factors that could indicate whether an occupation is skilled to the required level.

Indicators

3.23 In all, we have identified five main indicators that we believe are relevant to determining skill: the skill level defined in the SOC hierarchy; formal qualifications; earnings; on-the-job training or experience required to carry out the job; and the level of innate ability required. The first three of these indicators can be measured using national-level data. In MAC (2008c) we set out how an occupation passes as skilled if it passes the relevant threshold described below for at least two of the following three indicators:

- **The skill levels defined in the SOC hierarchy:** an occupation needs to be defined as skill level 3 or 4 in SOC 2000. Level 3 applies to occupations that normally require skills, experience or knowledge usually associated with a period of post-compulsory education but not at degree level, and level 4 relates to the so-called ‘professional’ occupations and managerial positions that normally require a degree or equivalent period of relevant work experience.
- **Formal qualifications:** 50 per cent or more of the workforce need to be qualified to NQF level 3 or above. This is measured using the LFS covering the eight quarters of 2006 and 2007.
- **Earnings:** median hourly earnings for all employees need to be £10 per hour or more. This is measured using the 2007 ASHE.

Thresholds

3.24 To count as skilled in our top-down analysis, an occupation has to pass on two out of our three skill indicators. Where top-down evidence is discussed in Chapters 4 to 7, a corresponding top-down data box is given. Under the heading of ‘skilled’, the data for each indicator are listed. This is shaded in green if the occupation passes the threshold for the indicator and red if it does not. An asterisk indicates missing data, or figures which are deemed to meet the threshold on the basis of reliability checks. Table 3.1 gives the thresholds for the three indicators of skill.

3.25 In our autumn 2008 report, 192 out of 353 occupations were defined as skilled by the above definition, covering 49 per cent of the UK’s working-age population in employment (MAC, 2008c). As we stated in that report, we do not expect the skill level of occupations to change substantially over time, and so we retained the list of skilled occupations for this review. We are commissioning further research to inform any future refinements to the list of skilled occupations, as discussed in Chapter 10.

Bottom-up evidence

3.26 In considering the bottom-up evidence, we take into account information on earnings and qualifications relating to specific job titles within an occupation. We also take into account two additional factors that we believe indicate skill in an occupation, but that cannot be measured using national-level data:

Table 3.1: Skill indicators and thresholds for skilled occupations

SOC skill level classification	Level 3
Proportion of employees with NVQ level 3+	50%
Median hourly pay for all employees	£10

Note: In Chapters 4–7 the cells will be shaded green if an occupation passes the thresholds listed above and red if it does not. An occupation passes the indicator if it is at least as high as the threshold.

Source: MAC calculations

- **On-the-job training or experience required to carry out the job to the appropriate level:** for example, in occupation 5231, motor mechanics, only around 40 per cent have formal qualifications at level 3 or above, but the remainder may have acquired the requisite skills via on-the-job training.
- **Innate ability required to carry out the job to the appropriate level:** this implies a high level of skill even though many in the occupation may not have formal qualifications. For example, within occupation 3414, dancers and choreographers, only around 30 per cent have formal qualifications at level 3 or above. Yet there is a limited supply of individuals with the ability to become what most people will regard as a skilled practitioner of this occupation.

3.27 In some cases, the associated SOC code will not be particularly relevant to the job title under examination. On these occasions, we did not require the top-down data to indicate skill; instead, we put more weight on the bottom-up data we received (for example, the skilled subset of chefs).

3.3 Is there a shortage?

Theory and definitions

3.28 As with skill, there is no universal definition or measure of 'shortage'. However, two main lessons emerge from the UK and overseas literature as discussed in MAC (2008c) and York Consulting (2008). First, approaches used in other countries to identify shortage do not rely on a single indicator of shortage. Second, the differences between the approaches suggest that there is no single infallible way of measuring shortage.

3.29 For these reasons, we examine a range of indicators in our top-down shortage analysis. It is crucial that this analysis is contextualised by background information and knowledge of the labour market, so we also pay careful attention to the bottom-up evidence on shortage.

3.30 To fully understand the concept of demand and supply, and therefore shortage, it is necessary to look at price and wage signals. A lay definition of 'static' shortage is that demand for labour exceeds supply at the current wages and conditions. When the wage is below the equilibrium level, market pressure should increase the wage, helping to raise supply and reduce demand, thus restoring equilibrium.

3.31 However, even in a labour market that is moving towards a new equilibrium, signals can be distorted. 'Dynamic' shortage occurs because the factors that influence labour markets change over time, and various factors may limit the speed at which labour markets can adjust, leading to disequilibrium. For instance, wages may be sticky and not move freely up and down with changes in labour demand and supply. This may happen more often in the public sector than in the private sector. Furthermore, it may take time for employees to acquire the skills the market needs, and the availability of state benefits may affect incentives to work.

3.32 As well as prices (wages), it is also important to consider quantities (vacancies, employment and unemployment). Low or falling unemployment among people previously employed in, or seeking work in, an occupation may indicate shortage. Rising employment may indicate rising demand and may exist alongside labour shortage. High vacancy levels, or rising vacancy rates, may also suggest that employers are finding it hard to fill jobs.

- 3.33 However, it is necessary to consider a range of indicators when looking at these sorts of measures of labour shortage. Shortage could exist, for instance, in a situation where we observe rising employment, rising real wages and declining vacancies. A large number of vacancies in an occupation may also simply indicate a high turnover within that occupation. Some vacancies and unemployment will exist even where the labour market is in equilibrium, due to natural friction in the labour market as employers search for workers and employees search for work.
- 3.34 Nonetheless, firms will find it harder to fill vacancies as the ratio of the total number of vacancies to potential supply (or unemployment) rises. A relatively high vacancy/unemployment ratio within an occupation suggests that employers are having particular difficulty filling vacancies given the supply of workers available. This may indicate a shortage of workers with the skills, experience or characteristics required. Comparing these ratios across occupations also allows the relative levels of shortage to be estimated, thus making allowance for the potential impact of the economic cycle on the whole labour market. Vacancy/unemployment (and vacancy/employment) ratios therefore indicate employer demand relative to potential labour supply and are widely used by economists as a potential indicator of labour shortage.
- 3.35 The above discussion suggests that it should, in principle, be possible to identify labour shortage by looking at factors such as price and wage signals, employment trends and vacancy levels or ratios. An alternative, but potentially complementary, approach is to ask employers directly where they think there are shortages of skills or skilled labour.
- 3.36 Employer-based indicators are derived from surveys that ask employers questions about their businesses. Green *et al.* (1998) argue that although employers have no problem interpreting questions on skill shortages, their assessments are not necessarily consistent or accurate. York Consulting (2008), in research carried out for us, reported that accidental reporting can occur when employers confuse skill shortages in their industry with other types of hard-to-fill vacancies, or with long-term macroeconomic fluctuations. Also, these surveys may suffer from deliberate over-reporting of shortages of skilled labour, where an employer believes that it is in their interest to misreport the level of shortage.
- 3.37 However, despite the potential drawbacks, employer survey evidence has a role to play alongside other indicators in terms of helping us to identify labour shortage. In England, the NESS gathers evidence on both recruitment difficulties and inadequate skills among the existing workforce.
- 3.38 We commissioned IFF Research (2008) to recode the NESS data at the SOC 2000 level, which is a more detailed level than that in the official published report. The outputs of this research are published on our website (www.ukba.homeoffice.gov.uk/mac) and were used to inform our first recommended shortage occupation lists in autumn 2008 and updated lists in spring 2009.
- 3.39 There are separate employer skills surveys for Wales, Scotland and Northern Ireland. It was unfortunately not possible to combine the four surveys for our work, as they are carried out at different times, and there are slight differences in the methodology. It was also not possible to disaggregate the data to the same level as the England data, due to smaller sample sizes. However, results from the most recent Scottish survey are discussed in Chapter 9.

Table 3.2: Data sources used in the top-down analysis

Data source	Frequency	Most recent ¹
Jobcentre Plus	Monthly	April 2009
Labour Force Survey	Quarterly	2009 Q1
Annual Survey of Hours and Earnings	Annual	2008
National Employers Skills Survey	Bi-annual	2007

Note: (1) As of June 2009.

3.40 The data sources used for our top-down analysis, their frequency, and the most recent data available at the time we carried out the analysis are summarised in Table 3.2. As is clear, the timeliness of the data sources varies considerably.

Indicators

3.41 Following from the above discussion, from examination of the available data it is possible to identify four categories of indicators of shortage:

- **employer-based** indicators (e.g. reports of shortage);
- **price-based** indicators (e.g. earnings growth);
- **volume-based** indicators (e.g. employment or unemployment); and
- **other indicators of imbalance** based on administrative data (e.g. vacancy duration or vacancy/unemployment ratios).

3.42 Under those four broad headings, we identified a set of potential indicators of shortage which were assessed against the following criteria:

- **Validity:** is the indicator measuring the right thing?
- **Robustness:** specifically the sample size, as a larger sample size will give more accurate estimates for the population.
- **Distribution of observations:** for example, there are statistical reasons why it might be better to use medians rather than means as a measure of average if there are likely to be outliers at the upper end of distribution.
- **Other data limitations:** for example, vacancies for some occupations are unlikely to be advertised through JCP, which may bias these data.

3.43 Ultimately, in autumn 2008, we identified a total of 12 indicators of shortage that sufficiently satisfied these criteria. The 12 indicators, and details on the data available to measure them, are set out in Table 3.3:

Table 3.3: The 12 indicators of shortage

Indicator	Frequency available	Date/period used	Source
Employer-based indicators			
E1 Skill shortage vacancies (SSVs) as percentage of all vacancies	Bi-annually	2007	NESS
E2 SSVs as percentage of hard-to-fill vacancies	Bi-annually	2007	NESS
E3 SSVs as percentage of total employment	Bi-annually	2007	NESS and LFS
Price-based indicators			
P1 Annual percentage change in median hourly pay for all employees	Annually	2007 to 2008	ASHE
P2 Annual percentage change in mean hourly pay for all employees	Annually	2007 to 2008	ASHE
P3 Return to an occupation, given NQF3, with age and region controls	Quarterly	Year to Q1 2009	LFS
Volume-based indicators			
V1 Annual percentage change in unemployment by sought occupation	Monthly	Apr 2008 to Apr 2009	JCP
V2 Annual percentage change in employment estimates	Quarterly	Year to Q1 2008 – year to Q1 2009	LFS
V3 Annual percentage change of median total paid hours, for all employees	Annually	2007 to 2008	ASHE
V4 Absolute change in proportion working for employer for less than one year	Quarterly	Year to Q1 2008 – year to Q1 2009	LFS
Indicators of imbalance based on administrative data			
I1 Absolute change in median vacancy duration	Monthly	Apr 2008 to Apr 2009	JCP
I2 Live unfilled vacancies/unemployment by sought occupation	Monthly	Year to Apr 2009	JCP

Notes: We have used claimant count as our measure of unemployment in the indicators above.

3.44 The latest NESS data are now two years old, which is of particular concern given the dramatic changes in economic conditions since 2007. Therefore, we have decided to remove the three indicators based on the NESS data from our analysis in this report, leaving nine indicators on which to assess shortage. In our next report in spring 2010, results from the 2009 round of the NESS will be available, and so the three indicators will return to consideration.

Thresholds

3.45 We can rank occupations according to their relative 'shortage' as given by any particular indicator. But what threshold for each of the nine indicators can reasonably be said to indicate labour shortage in a specific occupation? There is no straightforward answer to this question. After detailed consideration (see Chapter 7 of MAC (2008c)) we decided our first choice of threshold would be the median plus 50 per cent of the median. That is, median hourly pay would need to rise by 50 per cent above the median increase for an occupation to demonstrate shortage. This is one of the thresholds used by the Canadian Government to identify shortages in its labour market (see Strategic Policy Research Directorate, 2006), albeit with the intention of informing policy makers regarding training investment rather than immigration.

3.46 For some indicators, the distribution of observations meant that the median plus 50 per cent was an inappropriate choice of threshold. For example, in one case, no occupations would have passed had we used this threshold. Therefore, in some cases, we used the top quartile of the distribution as the threshold instead.

3.47 Finally, for those occupations we defined as skilled in MAC (2008c), the claimant count by sought occupation increased by 146 per cent between April 2008 and April 2009. As discussed above, for this report our top-down approach comprises nine indicators, of which the change in unemployment is only one. However, we believe that this indicator cannot indicate shortage when the measure is positive. The median plus 50 per cent and the top quartile of the distribution of this indicator give a positive value. Therefore, we set the threshold for this indicator as zero.

3.48 We list shortage indicators alongside discussion of relevant occupations and job titles in boxes in this report. Thresholds for each shortage indicator are shown in Table 3.4. In Chapters 4–7 the relevant data are highlighted in green if the occupation passes the threshold for an indicator and red if it does not. Therefore, a large number of 'green' indicators signifies potential shortage.

Table 3.4: Shortage indicators and thresholds

Indicator	Sept 2009 threshold type	Sept 2008	Mar 2009	Sept 2009
P1 Annual percentage change in median hourly pay for all employees	Median + 50%	4.80	4.95	4.95
P2 Annual percentage change in mean hourly pay for all employees	Median + 50%	5.18	5.10	5.10
P3 Return to occupation, given NQF 3, with age and region controls ¹	Median + 50%	1.52	1.43	1.62
I1 Absolute change in median vacancy duration	Top quartile	5.70	3.60	0.05
I2 Live unfilled vacancies/unemployment by sought occupation	Top quartile	0.71	0.67	0.36
V1 Annual percentage change in unemployment by sought occupation	Exception ²	-22.05	0.00	0.00
V2 Annual percentage change in employment estimates	Top quartile	9.05	9.89	10.35
V3 Annual percentage change of median total paid hours, for all employees	Top quartile	0.30	0.80	0.80
V4 Absolute change in proportion working for employer for less than one year	Median + 50%	0.007	0.000	-0.011

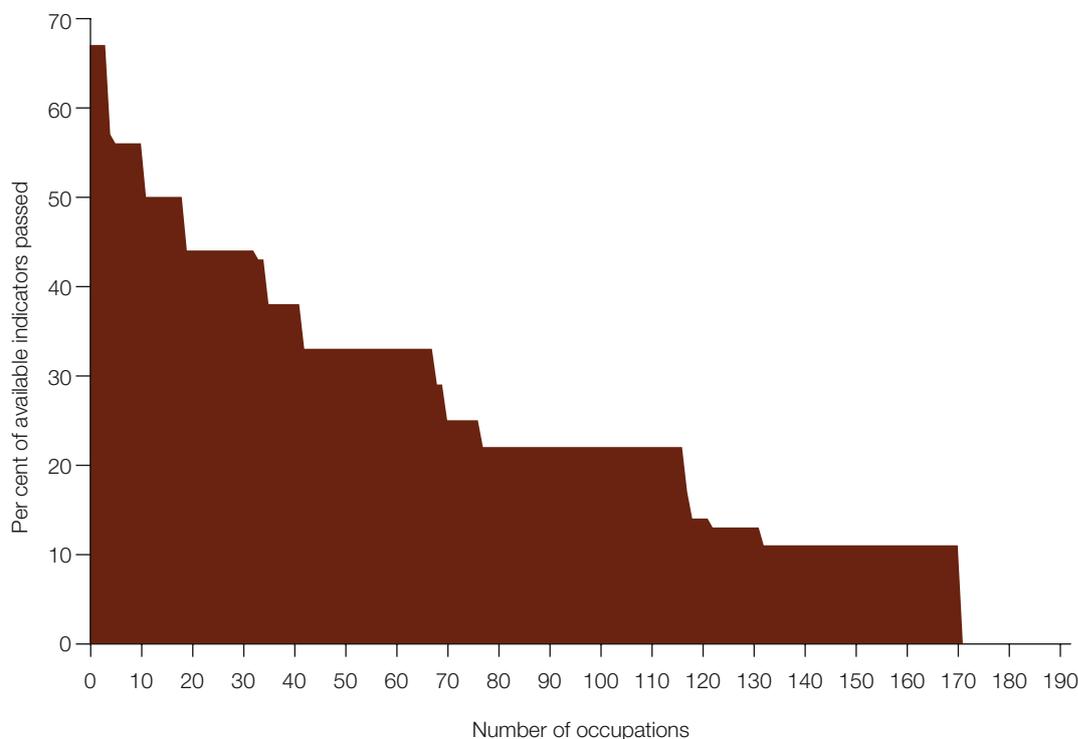
Notes: (1) Figures for this indicator represent the average log wage, after controlling for age and region. (2) In autumn 2008, the threshold for this indicator was the median plus 50 per cent. In March and autumn 2009 both the median plus 50 per cent and the top quartile of the distribution of this indicator were positive. As explained in this chapter, we do not believe that a positive change in unemployment can indicate shortage, and so the threshold for this indicator in this and the previous report was set to zero.

In Chapters 4–7, the boxes will be shaded green if an occupation passes the thresholds listed above and red if they do not. An occupation passes the indicator if it is at least as high as the thresholds summarised above, apart from for the unemployment indicator where an occupation passes this indicator, if it is less than or equal to the threshold.

- 3.49 The discussion of individual occupations in Chapters 4–6 include the results from the autumn 2008 report and the spring 2009 report, and the data we have analysed for this report. Future reports will follow this format, showing the current indicators and those from the two preceding reports, allowing us to assess current shortage and changes in shortage over a 12-month period.
- 3.50 Figure 3.1 shows the distribution of the proportion of available indicators passed by each of the 192 skilled occupations. This shows that 22 occupations passed on no indicators (compared with seven in

autumn 2008). The median occupation, in terms of shortage, passes on 22 per cent of indicators, equivalent to two passes out of nine. Eighteen occupations passed on at least 50 per cent of indicators (compared with 20 in autumn 2008): this is our benchmark for whether an occupation shows strong top-down evidence of shortage. The slight fall in the number of occupations reaching this benchmark does not necessarily show that there is less shortage overall in the UK labour market, as occupations are not equivalent in terms of the numbers of people employed.

Figure 3.1: Cumulative distribution of the proportion of available indicators passed by each of the 192 skilled occupations



Note: The figure shows the cumulative number of occupations passing the given proportion (per cent) of available indicators. Sources: MAC analysis of the Labour Force Survey (2008 Q3 to 2009 Q2); Annual Survey of Hours and Earnings (2008); Nomis (2009)

3.51 The relevance of SOC codes associated with job titles will vary across the spectrum of jobs in the UK. Hypothetically, where we consider a SOC code to be entirely relevant to a job title, we would require that at least half of the available top-down indicators of shortage are passed for the job to be considered in shortage. However, when the SOC code is not entirely relevant to the job title examined, we consider the top-down evidence in the context of our assessment of its relevance to the job title being assessed.

Effect of removing the three indicators derived from NESS data on the occupations under review

3.52 As discussed above, we considered the NESS data to be too outdated to generate any meaningful indication of current

shortages and so we decided to remove the three indicators derived from the NESS data for this report.

3.53 In this report, we have considered 34 unique SOC codes related to the job titles under review. An occupation is defined as being in top-down shortage if at least half of the available indicators are passed. Removing the three NESS-based indicators affects whether only five of these 34 occupations are regarded as being in top-down shortage. Three of them – dancers and choreographers, medical radiographers and occupational therapists – are considered to be in top-down shortage, whereas they were not when the NESS indicators were included. The other two – civil engineers and electrical engineers – are not considered to be in top-down shortage, whereas they were when

the NESS indicators were included. The top-down shortage status of the other 29 occupations is not affected by the omission of the NESS-based indicators.

Bottom-up evidence

3.54 We assess the bottom-up evidence of shortage by examining similar indicators to those used in the top-down analysis. For example, we look for signs that:

- wages are increasing more than average (earning indicators);
- vacancy levels or rates are rising (indicators of imbalance);
- vacancies are taking longer to fill than in most other occupations (indicators of imbalance);
- employers recognise that the reason vacancies are hard to fill is a shortage of skilled labour (employer-based indicators); and
- employers are needing to use coping strategies to deal with shortages, e.g. staff working overtime, over-promoting (indirect indicators).

3.4 Is it sensible?

Theory and definitions

3.55 The concept of ‘sensible’ can be interpreted in many different ways, but the definition needs to be consistent with the underlying policy objectives. In some cases, government objectives or policies may relate to particular sectors or occupations. For example, immigrant labour has in recent years played a key role in supporting particular government priorities in areas such as healthcare. However, we do not assume that immigration, or the use of immigrant labour to sustain wages at below the market rate, is necessarily the best way to meet government objectives in particular sectors.

3.56 In responding to our call for evidence for the autumn 2008 report, the Government recognised that the concept of sensible is challenging, but indicated that developing the skills of the UK workforce should be a key consideration.

3.57 Our approach is to consider the issue of sensible on a case-by-case basis with reference to four broad and inter-related lines of inquiry, which are formulated within an economic framework and based on the relevant government policy objectives.

- What are **the alternatives to employing immigrants in response to perceived staff shortages**, are these alternatives feasible, and have employers explored them fully? If not, what are the actual or perceived obstacles?
- How would bringing in immigrants relate to **skills acquisition** of the UK workforce? Are there enough UK resident workers in training or education to fill shortages? Will bringing in immigrants reduce employers’ incentives to invest in training and up-skilling of UK workers?
- How will the employment of immigrants affect **investment, innovation and productivity** growth? Is there a particular case for employing immigrants to support and maintain the UK’s international competitiveness in certain sectors?
- How will our decision affect the **wider UK labour market and economy**? How, if at all, will access to immigrant labour affect employment opportunities and conditions of the UK workforce?

3.58 Each of the above lines of inquiry relates to multiple Public Sector Agreement (PSA) objectives as set by the Government in HM Treasury (2007). For example, the first and second link closely to PSA2, to improve the skills of the population. The third links

to PSA1, to raise the productivity of the economy. And the fourth relates to PSA8, to improve employment opportunities for all.

- 3.59 There are some issues which, although important, are beyond our remit when we consider the question of sensible. First, there are the potentially important implications that immigration has for immigrants and their countries of origin. Second, beyond any labour market and economic effects, our terms of reference do not include the social impacts of immigration.
- 3.60 A question that falls within our remit, but which presents a clear challenge, is the potential trade-offs between the short term and long term. For example, bringing in immigrants to fill shortages may be essential in the short term to ensure the survival of businesses or ensure the provision of crucial services. However, in the long term it may reduce incentives to invest in the training and up-skilling of UK resident workers, and therefore may contribute to maintaining or even increasing dependence on immigrant workers. Our approach to such difficult issues has been to make our decisions in a balanced, consistent and transparent manner – and to use our recommendations as a challenge to employers and sector bodies to deliver improved up-skilling of the resident labour force and to seek alternatives to non-EEA immigration.

Indicators

- 3.61 In practice, the question of sensible is often specific to sectors and/or occupations. We therefore rely heavily on bottom-up evidence. However, a limited number of numerical indicators are available that might provide context to the bottom-up evidence. These include:
- the percentage of non-EEA immigrants already employed in an occupation; and

- the percentage of the workforce in receipt of training within the last 13 weeks.

3.62 Both of these indicators are based on data from the last four quarters of the LFS at the time the analysis was being carried out. For this report we have updated the indicators using data covering 2008 Q2 to 2009 Q1 inclusive.

3.63 The first of these indicators gives an indication of the reliance on immigrant labour from outside the EEA. An occupation that is dependent on immigrant labour from outside the EEA may suffer if access is immediately restricted. However, a low share of non-EEA immigrants may also indicate a difficulty in recruiting immigrants that the shortage occupation route may be able to help to solve.

3.64 The second indicator provides some measure of investment in up-skilling. An occupation with a very low proportion of workers who have recently received training may have scope for addressing staff shortages by more investment in up-skilling of existing staff. However, the LFS variable available provides only a crude measure of training activity.

3.65 In addition, some of the top-down indicators of shortage double up as indicators of sensible. These top-down indicators are reported in the shortage section of the top-down evidence summaries as in Table 3.4. For example:

- Change in earnings provides an indication of whether employers have made efforts to respond to shortages by raising wages. If wages were falling in an occupation where immigrants are being used to fill a shortage of skilled labour, it is possible that immigrants are being used as a cheaper substitute for domestic labour.

- The proportion of unemployed workers associated with an occupation, or a rise in that proportion, gives an indication of the scope for increasing employment of UK resident workers (but it does not capture inactive workers). If a shortage of skilled labour was reported in an occupation where a considerable number of unemployed people were seeking work, employers could be making inadequate efforts to recruit or train domestic labour.
- The change in hours worked by full-time employees provides an indication that employers are increasing hours as an alternative to response when vacancies cannot be filled, although there are legal limits to the number of hours an employee can work.

Thresholds

- 3.66 We have considered two top-down indicators of sensible but, unlike for skill and shortage, we do not apply explicit thresholds to these indicators. This is because these indicators need, in particular, to be interpreted in a context-specific manner.
- 3.67 The top-down data for sensible appear in the evidence boxes in subsequent chapters of this report, but without green and red indicators. Table 3.5 reports the medians of the indicators for all occupations, showing that the proportion of the UK workforce

born outside the UK and other EEA countries has steadily increased over the past 12 months, while the proportion that has recently been trained has remained broadly stable.

Bottom-up evidence

- 3.68 In terms of sensible, most of the considerations and indicators can only be assessed through bottom-up evidence, gathered through our call for evidence, regional visits and meetings with employers and representative bodies. Table 3.6 describes the key bottom-up indicators or criteria we have considered, and provides examples.
- 3.69 For our autumn 2008 report, we commissioned the Centre on Migration, Policy and Society (COMPAS) at Oxford University to co-ordinate the production of a series of sector-specific expert reports on the micro-level determinants of employer demand for immigrant labour and the alternatives to immigrant labour. These reports include a separate overview paper (Anderson and Ruhs, 2008) and seven sector papers. These papers are on our website.

Table 3.5: Sensible indicators and medians

Indicator	Sept 2008	Mar 2009	Sept 2009
Percentage of workforce born in non-EEA countries	6	7	8
Percentage of workforce trained in past 13 weeks	26	24	26

Notes: No explicit thresholds are used for the top-down indicators for sensible. The medians are reported here instead.
Source: Labour Force Survey, 2008 Q2 to 2009 Q1

Table 3.6: Our key criteria for assessing bottom-up evidence when assessing whether it is sensible to fill shortages through immigration

Key criteria for 'sensible'	What change might indicate 'sensible'?	Bottom-up examples
Alternatives to employing immigrants:		
What feasible alternatives to immigration have been considered? Are there obstacles for employers in pursuing alternatives to immigration?		
Recruitment efforts	High or increased spending and investment in recruitment	Spending on advertising, using different channels; using different labour pools, e.g. unemployed, part-time workers
Attractiveness of employment package	Increased incentives for the current workforce to remain in occupation and for new recruits to enter the labour market	Holiday allowances, bonuses, other benefits
Increased working hours	Increased working hours of current workforce	
Capital substitution	Increased investment in technology to make production less labour or skill intensive	Installing labour-saving machinery
Changing production methods	Changed production methods to make production less labour or skill intensive	Restructuring the production line
Outsourcing or off-shoring	Increased use of contracting in or use of overseas sites	Evidence that employers are doing this
Current use of immigrants	High use of immigrants may mean it is difficult to respond to shortage in other ways, but may also mean employers aren't doing enough to up-skill UK resident workers	Current use of immigrants
Skills acquisition:		
What efforts have been or could be made to train and up-skill the UK resident workforce?		
Training	High or increased investment in training of current and future UK workforce	Employers working with schools/ universities; new training programmes and apprenticeships
Training length	A long training period would make it harder to respond quickly to shortage through training	Evidence of length of training required to become fully proficient
Availability of training or qualifications	If training for an occupation is not readily available, this may increase the need for immigrants, but it may also indicate inadequate efforts by employers to ensure that qualifications are provided	Evidence that employers are working with their Sector Skills Council to develop qualifications

Table 3.6: Our key criteria for assessing bottom-up evidence when assessing whether it is sensible to fill shortages through immigration (continued)

Key criteria for 'sensible'	What change might indicate 'sensible'?	Bottom-up examples
Productivity, innovation and international competitiveness: What impacts will access to immigrant labour have on productivity, innovation and international competitiveness of an industry?		
Productivity	Decreased productivity may indicate that it is sensible to bring in immigrants. However, low productivity could imply scope to substitute capital for labour	Higher wastage, slower production processes, reduced quality of products or evidence of 'low skills equilibrium' of labour-intensive production
Innovation	Risk of reduced innovation in a sector where immigration is a source of innovation may indicate that it is sensible to bring in immigrants	Emerging technologies overseas
Competitiveness	Employment of immigrants may support international competitiveness of certain sectors through their skills and innovation. It would not be sensible to bring in immigrants to maintain competitiveness only through their willingness to accept lower pay	Sector requires highest levels of skills; immigrants bring different skills/innovation
Impacts on wages and employment rates	No adverse impact on wages, employment conditions or employment levels	Steady or rising wages and employment conditions
Business failure	Higher numbers of businesses failing may indicate that shortages cannot be filled, but there may be other causes, and it may also be a natural market correction	Closure of businesses; reduced profits
Public service impacts	It may be sensible to bring in immigrants if public services are jeopardised, but in the longer term it would not be sensible for public services to rely on cheap immigrant labour	Reduced quality of public services or insufficient or reduced availability of public services (e.g. increased waiting times)
Other regulatory and economic contexts	Other reasons outside the control of employers may make it difficult or impossible for them to pursue alternatives	

3.5 Identifying the occupations reviewed in this report

3.70 The majority of occupations that we have reviewed in this report were previously examined in autumn 2008, and in spring 2009 we committed to review all occupations by autumn 2009 in response to the changing economic circumstances. We also said in our spring 2009 report that we would review engineering occupations this time round. We review health occupations every autumn to align with the Workforce Review Team's workforce planning process; hence, they are again reviewed in this report, notwithstanding their earlier inclusion in our spring 2009 review. Quantity surveyors and managers in construction were suspended from the list in spring 2009, at which time we said we would review them again in this report were we to receive evidence on these occupations.

3.71 The Government requested that we review the teaching occupations in spring 2009, but the Department for Children, Schools and Families (DCSF) subsequently asked us to delay the review until this report. The Government asked us to review chefs in this report, and we have done so.

3.6 Country and regional issues

The European Economic Area

3.72 The shortage occupation lists set out one route through which employers can access labour from outside the EEA. The principle of community preference within the EU states:

Member States will consider requests for admission to their territories for the purpose of employment only where vacancies in a Member State cannot be filled by national and Community manpower

or by non-Community manpower lawfully resident on a permanent basis in that Member State and already forming part of the Member State's regular labour market.

3.73 It is, therefore, desirable to assess the potential supply of labour within the whole of the EEA using top-down analysis: however, this is difficult in practice. For the purposes of this report, we took account of the above issue in our bottom-up analysis. Efforts that employers have made to recruit employees from within the EEA (which includes all EU countries) are one of the criteria we have considered in relation to 'sensible'. In Chapter 10 we discuss in more detail the research project that we have recently commissioned to consider the availability and feasibility of using labour market data at the European level.

Scotland

3.74 By definition, a UK list includes Scotland, meaning that the UK list will apply to Scotland as well as to the rest of the UK. Our work plan also requires us to produce a separate shortage occupation list for Scotland. As the UK list applies to Scotland too, the Scotland list is an additional list to the UK list.

3.75 Because of Scotland's smaller population, data limitations at the UK level tend to be exacerbated at the Scottish level, so bottom-up evidence is crucial to this process. The same skilled, shortage and sensible criteria, and the same benchmarks in terms of expected quality of evidence, are applied to Scotland as to the UK. However, for the Scotland list, any shortage only needs to relate to Scotland rather than the whole of the UK. Evidence received from stakeholders in Scotland also plays a role in helping us to assess where shortages exist at the UK level.

- 3.76 We have asked stakeholders asserting that an occupation needs to be included on the Scotland list to state what efforts are being made to recruit people from elsewhere in the UK and the reasons why those efforts are not proving successful.
- 3.77 Issues and evidence we considered in relation to Scotland are discussed in more detail in Chapter 9.

Other UK regions and countries

- 3.78 The shortage occupation lists under Tier 2 of the PBS apply to the whole of the UK, with a supplementary list for Scotland only. Our work plan did not, therefore, allow us to produce separate shortage occupation lists for UK countries or regions other than Scotland.
- 3.79 Furthermore, although we recognise that some employers face real difficulties in recruiting skilled staff from other parts of the UK, we are not convinced that separate shortage occupation lists for each region and country of the UK are desirable or practicable. Even if regional shortages, however defined, exist and can be identified, it is probably not sensible for immigration policy to provide special dispensation to fill vacancies with immigrants if there is not a national shortage.
- 3.80 Evidence of skill shortages in particular regions, or for particular employers, may indicate shortages at the broader national level, and therefore we do use evidence on regional or local shortage to inform our work. Such evidence on its own, however, is not generally sufficient for inclusion on the recommended shortage occupation list unless accompanied by evidence that the shortage within a particular area reflects a wider problem.

3.7 Assessing the occupational evidence

- 3.81 Having summarised our approach to gathering and analysing the evidence above, the next part of this report is focused on considering specific occupations against the framework set out in this chapter: healthcare in Chapter 4; engineering in Chapter 5, and other occupations under review in Chapter 6. In Chapter 7 we briefly discuss those occupations for which we have received bottom-up evidence but had not originally signalled our intention to review.

Chapter 4: Healthcare occupations

4.1 Introduction

- 4.1 This chapter discusses our work on occupations in the health sector. In our first look at this sector in autumn 2008 we reported that:

While we do not feel we have seen a full picture of shortages across these occupations, we have taken into account the size of the health sector and the limited amount of time available ... to prepare and present evidence to us. We will work with all relevant organisations over the next few months as they try to establish more comprehensive health sector data, and we will review the position of these occupations in six months' time.

- 4.2 Shortly after our autumn 2008 report, and in preparation for our spring 2009 review, we agreed that the NHS Workforce Review Team (WRT) was well placed to act as co-ordinator for evidence gathering, and would utilise workforce information gathered as part of its annual assessment of workforce priorities carried out on behalf of the Department of Health (DH). NHS Employers (NHSE) agreed to do so from the employers' side, and Skills for Health (SfH) agreed to provide input from the devolved administrations and the independent sector.
- 4.3 It was agreed that evidence presented to us would take into account our methodology in terms of our skilled,

shortage and sensible criteria. In addition, where it arose, the Committee would also take into account evidence submitted directly to us. For our spring 2009 report this process worked well and, following that review, the major parties involved met to discuss lessons learned.

- 4.4 As a result the process has been improved, with increased understanding of the Committee's methodology and wider involvement from stakeholders. Where possible, and via joint discussions, evidence submitted by the WRT for this review was shared with NHSE, DH and SfH prior to submission to the Committee. Where differences became apparent these were made clear to the Committee. The MAC secretariat was involved with the process throughout.

4.2 Stakeholder evidence

The NHS Workforce Review Team

- 4.5 Each year, the WRT is commissioned by the Department of Health and the ten strategic health authorities (SHAs) to make an assessment of priority issues affecting the workforce in health and social care, based on healthcare policy and workforce need. This includes modelling staff numbers based on various known demand and supply drivers. The WRT is, therefore, well placed to be able to offer us evidence in relation to those skilled healthcare job titles which may be in shortage.

- 4.6 The WRT applied our methodology when assessing job titles and occupations; and, for each of these, provided a summary indicating the WRT's view of whether the occupation passed the skilled, shortage and sensible criteria. As in our spring 2009 report, where we had queries we went back to the WRT for more information and clarification. Where information was lacking, we did not follow WRT recommendations. Although it has been difficult to obtain detailed evidence for some specialisms the overall quality of evidence received from the WRT has been high, and we are grateful for their continued input into the shortage occupation process.
- 4.7 The WRT told us that the healthcare employment market is not 'operating freely': NHS wage levels are determined largely according to a national pay scale (Agenda for Change pay scales). Therefore, they believe that pay is of limited use as an indicator of shortage in healthcare occupations. This means that in determining whether there is a shortage of labour in a given skilled healthcare job, the WRT's methodology emphasises quantitative indicators of imbalance: supply forecast modelling (sourced from centralised census and training registration figures); vacancy surveys; and levels of applications for these vacancies.
- 4.8 Where the quantitative indicators signal a potential shortage, the following indirect indicators are then used as a supplement: use of agency staff; shifts in skill mix (a proxy for changes in mode of production); workforce age profiling; retirement patterns; and geographical distribution. Employer perceptions of shortage are also considered. In these cases, evidence is qualitative, coming from meetings with DH, healthcare providers and key personnel from professional bodies.
- 4.9 A further consequence of the market not operating freely is that the level of 'optimal' supply of a service may not match funded supply. Where this has been a factor in our considerations we discuss it in the text of this chapter.
- 4.10 We appreciate that length of training for the majority of healthcare occupations means that it is not possible to make rapid changes to the home-grown workforce to respond to changes in demand. For example, if demand for consultants increases due to more emphasis on preventative care, or if technological advances have meant that conditions which were previously untreatable can now be treated, it may not be possible to train home-grown doctors quickly enough.
- 4.11 The evidence received from the WRT was detailed and we cannot relate it in full here. To view the full evidence please visit www.wrt.nhs.uk/.

Skills for Health

- 4.12 SfH consulted with the devolved administrations and the independent sector and fed in their views at the appropriate stage. They also hosted a workshop in July 2009 for all major parties to discuss possible recommendations for this review.

"Skills for Health commends the work of the WRT and supports its analysis. This work has also been widely consulted upon and debated within the sector. We therefore recommend that the evidence be considered by the MAC in its deliberations."

Skills for Health response to MAC call for evidence

NHS Employers

- 4.13 NHSE engaged with the process to ensure that employers' perspectives were fed in. This included an in-depth analysis of a survey of employers earlier in 2009.

Other evidence received

- 4.14 In addition we also received some direct evidence from Skills for Care and Development, the Association of Directors of Adult Social Services, the Royal College of Nursing, the Independent Healthcare Advisory Services, English Community Care Association, the National Care Association, Skills for Justice, the Company Chemists' Association Limited (CCA), the Royal Pharmaceutical Society of Great Britain, the School of Pharmacy and Life Sciences, the General Medical Council, and a recruitment agency working in the care home sector. We also met and spoke directly with a number of these and other organisations. Chapter 9 of this report discusses healthcare issues that relate specifically to Scotland.

4.3 Key policies and issues in the healthcare sector

The Centre for Workforce Intelligence

- 4.15 DH has been working on proposals to create a Centre for Workforce Intelligence. The Committee was represented at a workshop during the early stages of development. The Centre may in the future undertake some of the functions currently carried out by the WRT. We will continue to stay in touch with developments and their potential impact on our work in this area.

The 18-week wait policy

- 4.16 In December 2008 the Government introduced a target of 18 weeks between first being referred by a GP and the start of any required treatment. Any hospital

appointments, tests, scans or other procedures that are required before treatment begins should all happen within a maximum time limit of 18 weeks. This can have implications for workforce planning.

The Stroke Strategy

- 4.17 The National Stroke Strategy was published by DH in December 2007. The Strategy sets certain aims for raising the quality of stroke prevention, treatment, care and support over the next decade. This has implications for workforce planning in certain healthcare occupations.

The NHS Information Centre census

- 4.18 In many cases we detail vacancy rates from the NHS Information Centre (IC) census. This annual census details posts that have been vacant for over three months. We were told that the average three-month vacancy rate for consultants across all specialities was 1.1 per cent in March 2009 (up from 0.9 per cent in March 2008). For other doctors and dentists (excluding training grades) the average was 3 per cent, the highest level for four years.

Impact of the recession

- 4.19 In the main we would not expect the recession to impact heavily on the healthcare sector. The sector is predominantly public funded and significant cutbacks leading to large-scale job reductions is unlikely. This is corroborated by the Recruitment and Employment Confederation and KPMG LLP *Report on Jobs* for September 2009 (REC/KPMG, 2009) which shows that healthcare is the only sector covered in the survey that has not seen reduced demand for staff during the past year.

4.4 Occupations we considered

4.20 In the sections that follow we discuss in more detail the medical occupations that are recommended for inclusion on the shortage occupation list for the UK, plus some that we considered and only include on our list in part, or not at all.

We have linked each occupation and job title with the most appropriate Standard Occupational Classification (SOC) code. Unless otherwise stated, all of the occupations and job titles covered below pass our criteria for skilled. We therefore focus mainly on the evidence in relation to shortage and sensible.

4.5 Medical practitioners

Box 4.1: Medical practitioners

Occupation(s) and SOC code(s): Medical practitioners – 2211

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Consultants within the following specialities: audiological medicine, genitourinary medicine, haematology, medical microbiology and virology, neurology, nuclear medicine, obstetrics and gynaecology, occupational medicine and paediatric surgery.

Consultants within the following specialities of psychiatry: forensic psychiatry, general psychiatry, learning disabilities psychiatry and old age psychiatry.

Also non-consultant, non-training, medical staff posts in the following specialities: anaesthetics, paediatrics and general medicine specialities delivering acute care services (intensive care medicine, general internal medicine (acute), emergency medicine, general surgery, obstetrics and gynaecology, and trauma and orthopaedic surgery).

ST4 trainees in paediatrics.

Box 4.1: Medical practitioners (continued)

Top-down data

2211 Medical practitioners

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£30.78		
Percentage of employees with NVQ3+	93.1						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 6 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.6	5.2	5.2	V2 Annual percentage change in employment estimates	-5.2	3.7	14.7
P2 Annual percentage change of mean hourly pay for all employees	-0.8	5.0	5.0	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.51	1.36	0.38	V4 Absolute change in proportion working for employer under 1 year	-0.04	0.04	0.03
I1 Absolute change in median vacancy duration	-9.7	23.0	15.1	E1 SSVs as a percentage of all vacancies	11	11	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.31	0.34	0.88	E2 SSVs as a percentage of hard-to-fill vacancies	88	88	*
V1 Annual percentage change in unemployment by sought occupation	-28.2	-24.4	-4.5	E3 SSVs as a percentage of total employment	0.03	0.03	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	32	27	26	Percentage of workforce trained in past 13 weeks	64	63	60

Note: For the use of green and red shading in Chapters 4-7, see the notes to Table 3.1 and Table 3.4. An asterisk indicates missing data, or figures which are deemed to meet the threshold on the basis of reliability checks.

- 4.21 This SOC code covers a wide range of medical job titles and, therefore, is not highly relevant to any one in particular. It is worth noting, however, that this SOC code is showing increasing signs of shortage as a whole. This occupation passed 1 out of 12 indicators of shortage in autumn 2008, compared with 4 out of 12 in spring 2009 and it now passes 6 out of 9 available indicators. Indicators relating to median hourly pay, vacancy durations and vacancy-to-unemployment ratios all indicate shortage. It is also particularly notable that claimant unemployment has actually fallen, in the context of substantial rises across the labour market as a whole. This shows that there are strong and increasing signs of shortage. However, due to the especially diverse nature of this occupation, we looked particularly closely at the bottom-up evidence to identify where the shortages were.
- 4.22 For each of the consultant occupations that we considered for the shortage occupation list, we received evidence relating to each of our criteria. This included information on headcount numbers, vacancy rates, retirement predictions, drivers for increased capacity and levels of trainees.
- 4.23 A full list of consultant posts included on our recommended list is provided in Box 4.1. Some issues in relation to particular consultant roles are discussed below. The consultant posts discussed are those where the WRT recommended either their inclusion on our new list, or removal following their inclusion on the previous list.
- Consultant posts where the WRT recommend that we include them on the shortage list and where we agree**
- 4.24 Consultants in the following specialities were recommended by the WRT for inclusion on the shortage occupation list, and we agree:
- **Audiological medicine:** There are very few consultants in this field, just 32 full-time equivalent in the September 2008 NHS IC census. WRT analysis indicates that there is evidenced room for growth for consultants in audiological medicine over the next five years. Workload is increasing, with an anticipated increase in demand from a number of work streams. However, modelling indicates that there will be only a limited expansion in the future supply of trained specialists due to a relatively low number of training posts. We agree with the WRT that, in the short–medium term, the use of overseas recruitment is a sensible mechanism for alleviating shortages within the profession and we therefore recommend that this speciality remains on the shortage occupation list.
 - **Forensic psychiatry:** The NHS IC census three-month vacancy rate for forensic psychiatry consultants stands at 5.2 per cent, which is on the high side when compared with consultants in general (1.1 per cent three-month vacancy average) and psychiatry consultants (2 per cent average). Workload is increasing, with an anticipated demand from a rise in the size and morbidity of the prison population. The development of new specialist services, including those related to Dangerous Severe Personality Disorder (DSPD) and Women’s Enhanced Medium Secure Services (WEMSS), may also provide additional demand drivers. WRT modelling indicates that there will only be a limited expansion in the supply of trained specialists in the short term. Therefore, we recommend that this occupation remains on the shortage occupation list.
 - **General psychiatry:** The NHS IC census three-month vacancy rate for

general psychiatry consultants is 1.6 per cent. Workload is increasing, with an anticipated increase in demand from the Mental Health Act 2007, improving access to psychological therapies, National Institute for Health and Clinical Excellence (NICE) guidelines for attention deficit hyperactivity disorder (ADHD), schizophrenia and depression. We therefore recommend that this occupation remains on the shortage occupation list.

- **Genitourinary medicine:** Consultant numbers in this speciality appear to have risen more slowly than the average across all specialities despite there being some demand drivers. There is increased demand in the form of rising incidences of sexually transmitted infections (STIs), and provision of some services in the community indicates the need to commission more trained doctors. There is a geographical imbalance which we note, and the NHS IC census three-month vacancy rate is just 1 per cent. On balance, we recommend that this occupation remains on the shortage occupation list, but we will need more compelling evidence of shortage for our next review.
- **Haematology:** The WRT told us that the NHS IC census three-month vacancy rate stands at 1.7 per cent, which is above the overall average consultant vacancy rate of 1.1 per cent. The workload of this speciality is rising due to a number of drivers. For example, there are increased numbers committed in the NHS Cancer Plan, and new laboratory practices in thrombosis and haemostasis will have an impact. It is thought that some services could be provided by nurse specialists, biomedical scientists, pharmacy staff and non-training junior grade doctors in the future. However,

we were told that this will not reduce the need for the clinical pathological and interpretative roles of the medical consultant in haematology. In the medium to long term, enough trainees may be produced to meet demand, but for now we recommend that this speciality remains on the shortage occupation list.

- **Medical microbiology and virology:** Extra demands have been placed on microbiology departments because of the attempts to control infections such as MRSA and *Clostridium difficile*. The WRT told us that ongoing growth in acute trust obligations for infection control is likely to require a continued consultant expansion. We understand that 45 of the 538 microbiologist and virologists in England currently work single-handedly. The speciality believes that continued reliance on single-handed specialists is untenable. WRT modelling indicates that there will be only a limited expansion in the future supply of trained specialists. We therefore recommend that this speciality remains on the UK shortage occupation list.
- **Neurology:** The WRT told us that despite a steady influx of new trainees there are still expected to be shortages of neurology specialists due to the growing number of stroke patients and the 18-week wait policy. We therefore recommend that this speciality remains on the shortage occupation list.
- **Nuclear medicine:** The WRT told us that an estimated requirement for trained specialists is complicated by how the nuclear medicine service is delivered. The Royal College of Physicians estimates that 350 consultants are required; there are currently 45. However, this estimate is not an indication of funded places and, therefore, the evidence of current shortage is not overly convincing. There

are demand drivers such as the 18-week wait policy and the Cancer Reform Strategy. We therefore recommend that this occupation remains on the shortage occupation list for the time being, but we will need better evidence of current shortage and of the actual demand for these specialists for our next review.

- **Obstetrics and gynaecology:** The WRT told us that a large number of international medical graduates take up obstetrics and gynaecology posts in the UK following completion of training, and therefore make up a large proportion of the current workforce. In addition, birth rates continue to rise, which is likely to increase demand for obstetrics services. The Royal College of Obstetrics and Gynaecology (RCOG) says the service will need more consultants in order to meet its 'gold standard' targets in their report *Safer Childbirth* (RCOG Press, 2007). The speciality is also under pressure in terms of complying with the European Working Time Directive (WTD) given that it is a service that is required round the clock. We therefore recommend that consultants in this speciality remain on the shortage occupation list.
- **Occupational medicine:** Although the NHS IC census showed a 0 per cent three-month vacancy rate for this speciality, anecdotally the situation is not the same in the independent sector where, the WRT told us, there is a reported chronic undersupply. As 70 per cent of the occupational medicine consultants in England work outside the NHS (mainly in the private sector, but also in organisations such as the military and the Health and Safety Executive), we have to place more emphasis on this anecdotal evidence and we therefore recommend that consultants in this speciality remain on the shortage occupation list. However, we will want better evidence from the independent sector for our next review.
- **Old age psychiatry:** The NHS IC census three-month vacancy rate for this speciality has risen from 0.7 per cent in 2008 to 2 per cent in 2009. Workload is increasing, with an anticipated increase in demand from an ageing demographic and the introduction of a National Dementia Strategy which is likely to increase referrals to old age psychiatric services. We therefore recommend that this speciality remains on the shortage occupation list.
- **Paediatric surgery:** The workforce is relatively small and service has historically been supplied by general surgeons. A supplementary training course in the general surgery of childhood has enabled general surgeons to operate on children. However, there is a declining number of general surgeons undertaking the additional training, at a time when demand for purely paediatric surgery has increased. The WRT forecasts that the number of trained specialists will continue to be below recommended levels for many years. We therefore recommend that this speciality remains on the shortage occupation list.
- **Psychiatry of learning disabilities:** The NHS IC census three-month vacancy rate as of March 2009 was 2 per cent. The WRT told us that workload is increasing, and there will be only limited expansion in the future supply of trained specialists. We were also told that the Royal College of Psychiatrists recommends a service level provision greater than that currently catered for. However, we have no evidence that says this recommendation is being taken up, nor that there are extra funded places available. The evidence of shortage for this occupation was weak;

however, we are keen not to impact on what is a very important service provision. We therefore recommend that this occupation remains on the shortage occupation list until our next review, when we will need to see stronger evidence on shortage and plans for future training if it is to be kept on at that stage.

Consultant posts where the WRT recommend that we include them on the shortage list, but where we disagree

4.25 There were some consultant job titles which the WRT recommended should be on the shortage occupation list and where we found insufficient evidence to agree. These are listed below with reasons why we believe the evidence was not strong enough.

- **Child and adolescent psychiatry:** The basis for the WRT's recommendation was a Royal College of Psychiatrists recommendation that levels within the profession need to rise. However, there is no evidence that higher levels are accepted and funded and, therefore, we must conclude, for the time being, that there is no current shortage of funded places and we recommend that they are removed from the shortage occupation list.
- **Clinical cyto and molecular genetics (genetic pathology):** There are only five people qualified to practise genetic pathology in the UK, only one of whom is currently employed full-time in an NHS genetics laboratory service. The WRT told us that the dearth of medics specialising in laboratory genetics is of concern. Staffing of regional NHS genetics laboratories consists largely of clinical scientists and genetic technologists. The WRT said that, as the speciality has expanded and matured,

there is an increasing case for having a genetic pathologist post established in all regional services. Despite this, we understand this is an area that is currently decommissioned as a training speciality in the UK, an issue that needs to be examined if there is believed to be a shortage in this speciality. This occupation, therefore, fails our sensible criteria and we do not recommend it for inclusion on the shortage occupation list.

- **Clinical neurophysiology:** In March 2009 the NHS IC census three-month vacancy rate was 0 per cent. In 2007 the British Society for Clinical Neurophysiology advised that one full-time equivalent consultant is required per 250,000 population. This would result in a need for more consultants, but there is no indication if this is an accepted and funded level. The WRT told us that demand was likely to increase due to the 18-week wait policy and, anecdotally, the threshold for patient referral has lowered slightly. However, there is no strong evidence of current shortage and we therefore recommend that the speciality is removed from the shortage occupation list.
- **Clinical pharmacology and therapeutics:** The total number of full-time equivalent consultants in this field in England is just 23. The WRT told us there is little recognition for the speciality and it could cease to exist without major increases in staff. The lack of staff is having an adverse effect on the teaching of clinical pharmacology to medical students. Posts are often university based and anecdotal evidence suggests they are being cut in favour of non-clinical academics and researchers due to costs. We were told that the delivery of the National Stroke Strategy could increase demand for consultants

in this speciality. The evidence presented to us showed a declining number of consultants in this speciality, but the lack of evidence in relation to demand was such that we recommend that this occupation should be removed from the shortage occupation list.

- **Immunology:** There were just 48 full-time equivalent posts in this speciality in 2007 according to the Royal College of Pathologists. A 2006 DH report on allergy services recognised an unmet need for immunology services. This has workforce implications for immunologists because, in many areas of the country, immunologists provide the only allergy clinics. There has been some consultant expansion in England, with six new posts over the last two years. Recent consultant expansion in Scotland and the Republic of Ireland has had the net effect of drawing Certificate of Completion of Training (CCT) holders away from England. Despite this, the NHS IC census three-month vacancy rate in 2009 was 0 per cent. Because there is no evidence of shortage, we recommend the removal of this occupation from the shortage occupation list.

Consultant posts that the WRT recommend we remove from the shortage occupation list and where we agree

4.26 The WRT's evidence recommended that we remove some consultant posts which were previously on the shortage occupation list. These are listed below with reasons why they are recommended for removal.

- **Chemical pathology:** The use of clinical biochemistry tests is rising at an unprecedented rate. Several key patient performance targets rely on

chemical pathology monitoring. The National Service Framework (NSF) targets and NICE recommendations for coronary heart disease and diabetes create substantial further workload increases. A National Pathology Alliance benchmarking study found that the number of patient requests per medical consultant rose by 125 per cent between 1997 and 2003. Despite this demand, the WRT told us that there is a current lack of consulting posts rather than a lack of applicants. At present there are more registrars in training than there are consultant posts, and this situation is likely to continue in the short to medium term. Therefore, we agree with the WRT that the use of non-European Economic Area (EEA) recruitment is no longer a sensible mitigating strategy for alleviating service shortages in this occupation.

- **Dermatology:** As of January 2008, the speciality reported 42 unfilled consultant posts in England against a total of 455 filled posts. The vacancy rate ranges from 5 per cent in the south to 19 per cent in the north. The NHS IC census three-month vacancy survey reported a 2.8 per cent vacancy rate (11 posts) in 2009. There are potential drivers moving dermatology into the community and this causes uncertainty regarding the future demand for trained doctors. If there is a very large movement towards GP and specialist nurse-led service provision, it is likely that only a small increase in trained dermatology doctors will be required. In addition, the WRT told us that most overseas doctors do not fulfil dermatology training requirements. Given this, we do not believe it is currently sensible to recommend dermatology consultants for inclusion on the shortage occupation list.

- **Intensive care medicine:** Intensive care units (ICUs) are undergoing major review, especially in terms of bed capacity and specialist/regional services (paediatric, cardiac and neurosurgical ICUs). The impact of these reviews will most likely result in an increased demand for CCT holders in Critical Care. That said, the WRT told us that at a recent engagement meeting, the Intensive Care Society reported that there seems to be a shortage of posts rather than people. Non-EEA recruits would not necessarily have positions to apply for. Therefore the use of non-EEA recruitment is not sensible at this time.
- **Paediatricians:** The WRT told us that their modelling suggests that in the short term there will be more CCT holders available per annum than there are consultant retirements. Thus, at present, there are too many trainees for the number of consultant posts available and it is therefore no longer sensible for consultants in this speciality to be on the shortage occupation list.
- **Plastic surgery:** WRT modelling shows very strong growth in demand in this field. However, WRT analysis shows that the plastic surgery workforce is forecast to grow significantly over the medium term and the Royal College of Surgeons of England estimated requirement for consultants will be achieved in 2018. The 2009 NHS IC census three-month vacancy survey indicated only six long-term vacancies in this area. Therefore, at this time there does not appear to be a shortage and we recommend that this speciality is removed from the shortage occupation list.
- **Renal medicine:** There are some significant drivers in demand for renal posts including increasing clinical morbidity (for example due to type 2 diabetes leading to increased end-stage renal disease rates) and the increasing disease prevalence that results from an ageing population. However, the service has taken some measures in an attempt to meet rising demand. One of these is the delivery of improved education to both patients and the population as a whole. In addition, the WRT reported a steady influx of younger trained specialists into this field, and home-grown supply may exceed demand in the short to medium term. We recommend that consultants in renal medicine should therefore be removed from the shortage occupation list.

Non-consultant posts

- 4.27 In our spring 2009 report, we highlighted the problems faced by the health sector due to junior doctors needing to comply with the WTD from August 2009. This was posing particular issues of shortage in areas where round-the-clock cover is required for non-consultant (non-training) staff. These areas are around emergency care.
- 4.28 We appreciated the significant concerns that a number of hospital services might not have made sufficient progress to support compliance for all doctors in training who are working in services delivering 24-hour, immediate patient care, some supra specialist services and in small, remote and rural units.

- 4.29 In spring 2009 DH asked that these 24-hour immediate patient care jobs be placed on the shortage occupation list for the short term. DH told us they expected this to be a short-term measure while those in training work their way through to fill posts. Therefore, at that time we recommended non-consultant, non-training, medical staff posts in a number of specialities for the shortage occupation list. We believe that there is still a need for these occupations to remain on the list.
- 4.30 Responses to a questionnaire developed by NHSE showed that difficulties still exist in the ability to operate and deliver robust WTD-compliant rotas. We therefore accept that, for the short term, non-consultant, non-training, medical staff posts in the following specialities remain on the shortage occupation list:
- anaesthetics;
 - paediatrics;
 - general medicine specialities delivering acute care services:
 - intensive care medicine;
 - general internal medicine (acute) (this is an addition since our previous list);
 - emergency medicine;
 - general surgery;
 - obstetrics and gynaecology; and
 - trauma and orthopaedic surgery.
- 4.31 The WRT told us that the latest WTD compliance data will be provided to us for all relevant specialities in time for our next review of health occupations in autumn 2010. This will hopefully show progress towards domestically sustainable WTD-compliant staffing rotas.
- 4.32 In addition to the areas outlined above, the WRT also highlighted a shortage of higher speciality trainee posts at level ST4 in paediatrics (training levels for this speciality run from ST1 to ST8).
- 4.33 The WRT's monitoring of recruitment to specialist training posts in 2009 indicates that there are difficulties in filling ST4 training posts in paediatrics. In July 2009, initial figures that the WRT derived from deaneries' returns indicated that there were 55 applicants suitable for appointment to 84 posts and, of these, only 41 accepted an offer of a post. ST4 trainees are important in providing paediatric services. We therefore recommend they are added to the shortage occupation list for the short term.

4.6 Psychologists

Box 4.2: Psychologists

Occupation(s) and SOC code(s): Psychologists – 2212

This occupation is not included on our recommended shortage occupation list.

Top-down data

2212 Psychologists

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£21.37		
Percentage of employees with NVQ3+	99.6						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	8.5	-2.3	-2.3	V2 Annual percentage change in employment estimates	-5.1	4.9	8.6
P2 Annual percentage change of mean hourly pay for all employees	4.7	7.5	7.5	V3 Annual percentage change of median total paid hours	-0.1	0.2	0.2
P3 Return to occupation, given NQF3, with age and region controls	1.29	1.27	*	V4 Absolute change in proportion working for employer under 1 year	-0.09	-0.04	0.02
I1 Absolute change in median vacancy duration	-0.7	-0.8	0.1	E1 SSVs as a percentage of all vacancies	6	6	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.09	0.10	0.09	E2 SSVs as a percentage of hard-to-fill vacancies	22	22	*
V1 Annual percentage change in unemployment by sought occupation	-22.2	13.0	68.8	E3 SSVs as a percentage of total employment	0.11	0.11	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	19	11	4	Percentage of workforce trained in past 13 weeks	62	60	57

- 4.34 In our spring 2009 report, we recommended the retention of clinical psychologists on the shortage occupation list, but said that we needed stronger evidence for this review.
- 4.35 Looking at top-down evidence last time the occupation passed on just 1 out of 12 of our shortage indicators. This time it passes 3 out of 8 available indicators. Mean pay has risen. On the other hand median pay has fallen. This may be connected to a rise in the proportion of new hires.
- 4.36 It should be noted that this occupation group will include many who work in educational psychology and this is an area we did not receive bottom-up evidence on, but we would welcome it for our next review.
- 4.37 The WRT stated that the Sainsbury Centre produced a report which estimated the demand for mental health professionals to deliver the Mental Health National Service Framework (Sainsbury Centre for Mental Health, 2006). The report estimates that 10,200 clinical psychologists will be required, which exceeds the current number on the NHS IC census (7,523 headcount). However, there is no suggestion that this level is agreed and funded.
- 4.38 The WRT told us that the NHS IC census three-month vacancy rate as of March 2009 was 0.9 per cent, up from 0.5 per cent in the previous year. The WRT also quoted a Walker and Gate survey in 2007 showing 5.6 per cent vacancies, but these data are two years old.
- 4.39 We note that there may be other demand drivers, including those from Improving Access to Psychological Therapies, but, despite slightly stronger top-down indications of shortage, the bottom-up evidence is not an improvement on what we heard earlier in the year and, therefore, we recommend that clinical psychologists are removed from the shortage occupation list.

4.7 Pharmacists

Box 4.3: Pharmacists/pharmacologists

Occupation(s) and SOC code(s): Pharmacists/pharmacologists – 2213

Only the following job title within this occupation is included on our recommended shortage occupation list:

Registered pharmacists working in the NHS or hospitals (including pre-registration pharmacists working in the NHS or hospitals).

Top-down data

2213 Pharmacists/pharmacologists

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£18.01		
Percentage of employees with NVQ3+	92.6						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 0 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.3	2.3	2.3	V2 Annual percentage change in employment estimates	2.2	-10.4	-12.0
P2 Annual percentage change of mean hourly pay for all employees	-5.1	3.6	3.6	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.92	0.41	0.76	V4 Absolute change in proportion working for employer under 1 year	0.03	-0.02	-0.05
I1 Absolute change in median vacancy duration	-6.6	2.2	-29.3	E1 SSVs as a percentage of all vacancies	18	18	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.47	0.36	0.35	E2 SSVs as a percentage of hard-to-fill vacancies	100	100	*
V1 Annual percentage change in unemployment by sought occupation	-15.1	17.9	86.8	E3 SSVs as a percentage of total employment	0.09	0.09	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	21	12	13	Percentage of workforce trained in past 13 weeks	54	50	54

Stakeholder evidence:

We received evidence from the CCA on behalf of the Association of Independent Multiple Pharmacies (AIMp), the National Pharmacy Association (NPA) and the British Pharmaceutical Students' Association. We also received evidence from the WRT, the Royal Pharmaceutical Society of Great Britain and a lecturer from the Overseas Pharmacists Assessment Programme (OSPAP).

- 4.40 In our autumn 2008 review we included pharmacists on our recommended shortage occupation list while further evidence on healthcare-related occupations was assembled. In our spring 2009 report we recommended that pharmacists working in the NHS and in hospitals remain on the shortage occupation list. At the time, we had little evidence in relation to the wider group of community pharmacists and pharmacy technicians, and given that the top-down analysis was showing little sign of shortage we decided not to recommend their retention on the list. They were, therefore, removed.
- 4.41 For this review we received evidence from the WRT arguing that all pharmacists and all pharmacy technicians should be on the shortage occupation list. We also received evidence from, and met with, a number of other organisations.
- 4.42 However, our top-down analysis indicates that the occupation shows no sign of shortage at all, passing none of the available shortage indicators. As shown in Chapter 3, only 22 out of 192 skilled occupations pass on no shortage indicators at all. In particular, the absolute change in median vacancy duration has fallen by 29 days, while employment in the occupation has fallen by 12 per cent over the last year. We then looked at the bottom-up evidence in detail.
- 4.43 data on pharmacy numbers across the NHS and the independent sector are limited. The RPSGB has around 48,000 pharmacists on the register in Great Britain, but this includes approximately 10,000 non-practising pharmacists. The length of training for pharmacists is five years (a four-year degree and one year's pre-registration training).
- 4.44 Non-EU overseas pharmacists register through a different route from UK-educated pharmacists. First, they must be approved by the RPSGB to be eligible to take a conversion course, the OSPAP. The OSPAP takes a year to complete and in essence the course deals with UK pharmacy practice, including law and ethics, and therapeutics. After taking an OSPAP, non-EU pharmacists take a year of pre-registration training.
- 4.45 NHSE told us that vacancy rates for pharmacists within the NHS (taken from the IC census) was 5.3 per cent in 2009, up from 4.3 per cent in 2008. These are empty posts, not being filled by locums. There are regional differences within SHAs which range from 3 per cent to 8 per cent. The number of full-time equivalent pharmacists within the NHS has been rising for a number of years.
- 4.46 In its 2009 report the NHS Pay Review Body recommended the introduction of a recruitment and retention premium for pharmacists working in the NHS (DH, 2008a). This recommendation started at £5,000 per annum for the lowest level of band 6 to £500 for the upper part of band 7. This was to help attract and retain pharmacists within the NHS. The reported salary gap between first-level NHS pharmacists and their community sector equivalents is £10,000.

Registered pharmacists

- 4.43 Pharmacists in the UK are required to hold a Royal Pharmaceutical Society of Great Britain (RPSGB) accredited degree in pharmacy, then to undertake one year of pre-registration training, and pass the RPSGB's registration examination, before qualifying as a pharmacist. Accurate

- 4.47 In the same report the Pay Review Body said *“The lack of urgency in agreeing a solution to the shortage of pharmacists in the NHS carries considerable risks, including further detriment to service delivery and staff morale.”*
- 4.48 The Government subsequently rejected the Pay Review Body’s recommendation on the following grounds:
- The recruitment and retention difficulties vary across England, but are not significant in Scotland, Wales and Northern Ireland. A national premium, applied across the UK, would therefore be inappropriate.
 - Local recruitment and retention payments should be considered alongside increasing the supply and supporting the training and development of junior pharmacists.
 - The additional expenditure that would be required to implement the premium is unreasonable at a time when resources available to the NHS and the wider economy are being tightened.
- 4.49 In April 2008 the Pharmacy White Paper was issued and this, together with other government policy initiatives, means that the demand for pharmacists is likely to increase. The WRT told us that the East of England Strategic Health Authority (SHA) region indicated that 64 per cent of community pharmacies reported having vacancies.
- 4.50 We received evidence on behalf of the CCA, the AIMp, the NPA and the British Pharmaceutical Students’ Association. The CCA represents nine pharmacy companies – Boots, Lloydspharmacy, Co-operative Group Pharmacy, Rowlands, Superdrug, Tesco, Sainsbury’s, Asda and Wm Morrison Supermarkets. AIMp is a membership organisation representing the interests of community pharmacy companies with between 5 and 300 branches. In total, member companies of the CCA and AIMp own over 7,000 pharmacies – representing more than 50 per cent of the pharmacies in the UK. The NPA represents the vast majority of community pharmacy owners in the UK.
- 4.51 We were told that over 70 per cent of those registered, and currently working, as a pharmacist work in a community pharmacy. We also understand from the CCA that around one third of community pharmacists describe their status as ‘locum’. This seems a very high proportion and creates a degree of uncertainty about the actual level of vacancies within the sector. It is plausible that vacancies are being reported even though there may well be a locum filling the post.
- 4.52 We also heard that approximately 32 per cent of pharmacists choose to work part-time. The workforce grew by 1.7 per cent in 2008 and around 15 per cent of pharmacy students in UK universities are non-EU students.
- 4.53 The number of pharmacies in England and Wales increased by 159 to 10,998 in the year to 31 March 2008, an increase of 1.5 per cent. There is also evidence that primary care trusts in England have granted 223 applications to open pharmacies with opening hours of 100 hours a week or more. We also understand that community pharmacies in England and Wales dispensed 785.4 million items in 2007/08, an increase of 40.4 million on the previous year. There are also increased services being provided via pharmacies. All of this, we agree, indicates an increasing need for pharmacists.

- 4.54 The CCA and AIMp provided data on the number of vacancies reported by 23 of their member companies, relating to 8,246 pharmacist posts. Of these posts, 1,112 (13.5 per cent) were vacant, 833 (10.1 per cent) were filled by EU registered pharmacists, 468 (5.7 per cent) were held by non-EU registered pharmacists and around 200 were filled by pre-registration graduates.
- 4.55 This shows a high level of vacancies. However, it is questionable just how many of these are actual vacancies and how many are being filled by locums. It also shows that there may be a pool of pharmacists within the rest of the EEA that can continue to be tapped into.
- 4.56 We acknowledge that the role of pharmacists is expanding, the number of pharmacies is growing, and there are an increasing number that are opening long hours. All of this places extra demand on the number of pharmacists required. There appears to be a growing number of training places available, but also a large number of vacancies that already exist for them to fill.
- 4.57 Given that a pharmacist is required on site at all times when a pharmacy is dispensing prescriptions or selling pharmacy-only medicine, we suspect that locums fill the gaps in the majority of cases. We have not been given any evidence on the number of times, and the percentage of total opening time, when a pharmacy has had to close as a consequence of no pharmacist being present. This suggests that such an occurrence happens rarely. The real level of shortage is, therefore, difficult to assess. Furthermore, there is a risk that non-EEA pharmacists may displace resident locums, which contradicts our sensible criteria.
- 4.58 As already stated, this occupation shows no signs of shortage against our top-down indicators. We note that this is a growing occupation which provides an important service, but the bottom-up evidence we received, particularly in relation to shortage, was not sufficiently robust to lead us to conclude that our top-down evidence was inaccurate. We therefore believe that, for the time being, community pharmacists should not be added to the shortage occupation list. In relation to NHS pharmacists, we recognise that the large pay difference makes it more difficult to attract and retain pharmacists within the NHS. We agree with the Pay Review Body that this is an issue that needs to be examined and, if possible, resolved. In the meantime we recommend that pharmacists working in the NHS or hospitals should remain on the shortage occupation list because the clearest evidence of shortage in relation to this occupation relates to NHS pharmacists.
- 4.59 We are happy to work with the sector ahead of our next healthcare review in autumn 2010 to better understand what the real level of vacancies is in the community sector, given the large number of posts that appear to be filled by locums.

Pre-registration pharmacists

- 4.60 As stated above, following training, pharmacists need to undergo a year of pre-registration training. This is also true for those trained overseas who come to the UK, who must also complete the OSPAP first. NHSE told us that, according to the NHS IC census, vacancy rates for pre-registration pharmacists have risen from 3.9 per cent in 2008 to 5.8 per cent in 2009. We therefore include pre-registration pharmacists on our shortage occupation list, but only those who take their pre-registration training year within the NHS or in a hospital.

4.8 Pharmaceutical dispensers

Box 4.4: Pharmaceutical dispensers

Occupation(s) and SOC code(s): Pharmaceutical dispensers – 3217

This occupation is not included on our recommended shortage occupation list.

Top-down data

3217 Pharmaceutical dispensers

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£7.99		
Percentage of employees with NVQ3+	47.21*						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	9.0	-0.1	-0.1	V2 Annual percentage change in employment estimates	-8.7	33.6	30.6
P2 Annual percentage change of mean hourly pay for all employees	6.8	0.7	0.7	V3 Annual percentage change of median total paid hours	0.1	0.1	0.1
P3 Return to occupation, given NQF3, with age and region controls	0.75	0.60	0.65	V4 Absolute change in proportion working for employer under 1 year	0.04	-0.02	-0.04
I1 Absolute change in median vacancy duration	2.3	0.2	0.4	E1 SSVs as a percentage of all vacancies	42	42	*
I2 Live unfilled vacancies/unemployment by sought occupation	1.49	1.21	1.09	E2 SSVs as a percentage of hard-to-fill vacancies	74	74	*
V1 Annual percentage change in unemployment by sought occupation	4.1	53.3	94.4	E3 SSVs as a percentage of total employment	0.51	0.51	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	8	7	6	Percentage of workforce trained in past 13 weeks	51	43	42

- 4.61 This job title is not currently on the shortage occupation list. The WRT suggested that pharmacy technicians are in shortage. In order to register with the RPSGB, pharmacy technicians are required to hold an appropriate underpinning knowledge qualification (BTEC (Pharmaceutical Sciences) or equivalent) and a National Vocational Qualification (NVQ) level 3 in Pharmacy Services Qualification.
- 4.62 The RPSGB told us that the SOC code 3217 includes dispensers, pharmacy dispensers and pharmacy technicians. However, the scope of practice is significantly different and more substantial for pharmacy technicians than for the other roles. Pharmacy support staff (including dispensers) are educated to NVQ level 2. Pharmacy technicians are educated to NVQ level 3.
- 4.63 Our top-down analysis shows, unlike for pharmacists, this occupation passing three out of nine indicators of shortage. Employment appears to have risen extremely rapidly in the occupation, although this may reflect data volatility, given that this is quite a small occupation in terms of numbers employed.
- 4.64 As with pharmacists, pharmacy technicians work in both the NHS and the independent sector. Accurate data are limited as registration is voluntary. The WRT told us that the RPSGB reported that, as of 1 March 2009, there were 6,315 registered practising pharmacy technicians in England. This compares with 46,000 in the SOC code as a whole. Therefore, the top-down data may not be that relevant so we rely heavily on bottom-up evidence.
- 4.65 The WRT told us that information from the NHS Pharmacy Staffing Establishment and Vacancy Survey in 2008 shows that vacancy rates for band 4 pharmacy technicians in NHS trusts is 13.7 per cent. Within the independent sector, a recent survey carried out in the East of England SHA region by the WRT indicated that 52 per cent of community pharmacies reported having pharmacy technician vacancies. However, we understand that this is one of the worst areas of the country, with other areas reporting less of a problem.
- 4.66 The number of planned pre-registration pharmacist technician training places in the NHS in 2008/09 is set to increase to 379, a 40 per cent increase on the 2007/08 figure.
- 4.67 As with pharmacists, the WRT told us that pharmacy technician roles are set to expand, in part to cover some of the work currently undertaken by pharmacists, which partly offsets the argument made for expanding the pharmacist workforce.
- 4.68 The Independent Healthcare Advisory Services told us that a number of their members supported the inclusion of pharmacy technicians on the shortage occupation list as there is anecdotal evidence that vacancies are proving difficult to fill.
- 4.69 The combination of mild signs of shortage from our top-down data, which may not be specifically relevant to this job title anyway, and less than robust evidence from the bottom-up evidence leads us to believe that the status quo should be maintained. We therefore do not recommend pharmacy technicians for the shortage occupation list at this time.

4.9 Dental practitioners

Box 4.5: Dental practitioners

Occupation(s) and SOC code(s): Dental practitioners – 2215

Only the following job title within this occupation is included on our recommended shortage occupation list:

Consultants in paediatric dentistry.

Top-down data

2215 Dental practitioners

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£23.61		
Percentage of employees with NVQ3+	91.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	2.1	1.9	1.9	V2 Annual percentage change in employment estimates	0.1	-5.8	23.7
P2 Annual percentage change of mean hourly pay for all employees	-6.9	4.8	4.8	V3 Annual percentage change of median total paid hours	0.1	0.8	0.8
P3 Return to occupation, given NQF3, with age and region controls	*	*	*	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.00	0.05
I1 Absolute change in median vacancy duration	-16.1	-4.1	-0.2	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.76	1.05	2.84	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-8.0	-19.2	4.0	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	20	27	29	Percentage of workforce trained in past 13 weeks	68	63	62

- 4.70 The top-down data are relevant to an extent, but the only evidence we received was in relation to consultants and these will make up a very small proportion under this SOC code. The occupation passes on three out of eight available shortage indicators, an above average number, but not especially high.

Consultants in orthodontics

- 4.71 This job title is currently on the shortage occupation list. The WRT told us that overall orthodontic provision in England is forecast to increase in the future. However, the NHS consultant workforce is forecast to decrease. Despite evidence in the top-down data of a heavy presence of non-EEA immigrants in the wider occupation, the WRT said that there may be some difficulties in recruiting non-EEA staff to this specialism at consultant level because of the need to show equivalence in their training. No evidence was submitted from the private sector and therefore we recommend that this occupation is removed from the shortage occupation list.

Consultants in paediatric dentistry

- 4.72 This job title is currently on the shortage occupation list. There are only 29 full-time equivalent paediatric dentistry consultants in the NHS in England. The WRT told us that the workforce is forecast to grow slowly over the next 12 years. They also told us that there were nine NHS consultant vacancies in 2008. We also understand that there are increasing shortages in paediatric dentistry academia. There are 13 academic honorary consultants whose major task is undergraduate training and currently five vacancies in academia. We were told that there has been a marked impact on workload and increased waiting lists in paediatric dentistry. We recommend that this occupation remains on the shortage occupation list.

4.10 Biological scientists and biochemists

Box 4.6: Biological scientists and biochemists

Occupation(s) and SOC code(s): Biological scientists and biochemists – 2112

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Cardiac physiologist, clinical neurophysiologist, clinical vascular scientist, respiratory physiologist and sleep physiologist.

Top-down data

2112 Biological scientists and biochemists

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£23.61		
Percentage of employees with NVQ3+	92.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	3.2	2.6	2.6	V2 Annual percentage change in employment estimates	10.6	4.7	-0.2
P2 Annual percentage change of mean hourly pay for all employees	5.8	0.7	0.7	V3 Annual percentage change of median total paid hours	0.0	1.3	1.3
P3 Return to occupation, given NQF3, with age and region controls	1.12	0.99	1.18	V4 Absolute change in proportion working for employer under 1 year	0.00	0.02	-0.03
I1 Absolute change in median vacancy duration	0.6	-2.7	7.0	E1 SSVs as a percentage of all vacancies	58	58	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.09	0.10	0.09	E2 SSVs as a percentage of hard-to-fill vacancies	98	98	*
V1 Annual percentage change in unemployment by sought occupation	-17.8	24.9	81.6	E3 SSVs as a percentage of total employment	0.61	0.61	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	12	15	13	Percentage of workforce trained in past 13 weeks	42	40	41

- 4.73 This occupation group shows no real signs of shortage, despite a rise in median vacancy duration and median paid hours. However, the evidence we received related to a small sub-set of job titles within this SOC code and, therefore, the top-down data are only of limited use.

Cardiac physiologists

- 4.74 This job title is currently on the shortage occupation list. The WRT told us that the demand for cardiac physiologists is increasing due to greater numbers of percutaneous transluminal coronary angioplasty, electrophysiology and arrhythmias, as well as to increasing patient numbers seen that are referred from other specialities (e.g. respiratory medicine, renal, trauma and rheumatology). Over the next decade, there is an increasing likelihood that some diagnostic and follow-up work will be carried out at community level. The WRT said that this had implications for future training and increased roles for cardiac physiologists.
- 4.75 There are regional variations in the vacancy rate, but the overall three-month vacancy rate in England, according to the NHS IC census for 2009, is 2.9 per cent (68 posts). The number of patients waiting more than six weeks for electrophysiology and echocardiography testing has fallen significantly in the last two years. Anecdotally, we were told that this has been due to staff working an increased number of sessions and at weekends and may, therefore, be unsustainable. The professional body reports that higher education institutes are reaching maximum numbers on their current courses, and expanding cardiac physiology training numbers substantially will require additional infrastructure development. In the short term, therefore, we recommend that this occupation remains on the shortage occupation list.

Clinical physiologists (neurophysiology)

- 4.76 This job title is currently on the shortage occupation list. The WRT forecasts that demand for clinical neurophysiology services will grow. Factors driving an increase in demand include policy and demography.
- 4.77 One of the major demand pressures in clinical neurophysiology is the 18-week wait policy. According to the WRT some neurophysiology departments report difficulty in successfully maintaining these targets, with the effect that staff feel under pressure. There is anecdotal evidence of clinical physiologists taking early retirement as a result.
- 4.78 Demand for clinical physiologists (neurophysiology) is affected by the changing skill mix associated with multi-disciplinary working. As responsibility for conducting some tests is moved from consultants to scientists, the demand for scientists may well increase.
- 4.79 The WRT told us that there is no evidence to suggest difficulties in attracting young people into the speciality, so we would hope that in time enough trainees might come through the system to meet the increase in demand. However, in the meantime we recommend that this occupation remains on the shortage occupation list.

Clinical vascular scientist

- 4.80 This job title is currently on the shortage occupation list. There are little data on the number of clinical vascular scientists that work in the UK. There is also some overlap between the work of these scientists and sonographers. The WRT told us that the number of trainees passing exams appears to have fallen in recent years. There are also high levels of long-term sickness among vascular

scientists, apparently due to work-related musculoskeletal disorders. We were not told why this is so.

- 4.81 The National Stroke Strategy (2007) emphasises the importance of rapid access to imaging services. In particular, the requirement of access to imaging services within 24 hours of a stroke will tend to increase demand for trained vascular scientists. The need to provide service at weekends may also thin out the workforce during the week.
- 4.82 Technological advances are making equipment cheaper and more portable and this may well lead to more widespread use. Between 2008 and 2013 all men over the age of 65 will be offered screening for abdominal aortic aneurism. This programme will lead to an increased demand for vascular scientists.
- 4.83 The WRT told us that trainee recruitment is quite easy, but it is much harder to recruit qualified staff. There are no figures on vacancy levels, but the WRT told us that there is evidence of an increase in the use of agency staff (18 per cent use in the profession) and difficulties filling recent vacancies. In a recent vacancy survey, of 28 advertised vacancies only six were filled by a qualified practitioner.
- 4.84 In the longer term, the Modernising Scientific Careers Programme will develop structured training routes across physiological measurement disciplines which will ensure the future supply of vascular scientists. However, for the time being we recommend that this occupation remains on the shortage occupation list.

Respiratory physiologist

- 4.85 This job title is currently on the shortage occupation list. WRT analysis indicates continued increase in demand for respiratory physiologists. This is due

to an anticipated future increase in the incidence of respiratory disease and the increasing emphasis on early diagnostic and monitoring services. WRT supply modelling shows a small decrease in the workforce in future years.

- 4.86 A survey in 2009 by the Association for Respiratory Technology and Physiology suggested that only 66 per cent of advertisements are successful in appointing candidates to both sleep and respiratory posts. We therefore recommend that this occupation remains on the shortage occupation list.

Sleep physiologist

- 4.87 This job title is currently on the shortage occupation list. Most healthcare scientists in sleep physiology train as respiratory physiologists or enter the service from a nursing or research background. They then receive one-to-one training to develop competencies in sleep studies.
- 4.88 The WRT told us that a key demand driver for the sleep physiology workforce is the growing demand for assessment of continuous positive airway pressure (CPAP) as a treatment for sleep apnoea. WRT evidence suggests that, for the time being, there will continue to be gaps between workforce supply and demand. Therefore, we recommend that this occupation remains on the shortage occupation list.

Health Professions Council (HPC) Registered Ophthalmic and Vision Scientist

- 4.89 This job title is currently on the shortage occupation list. The WRT told us that increasing numbers of ophthalmic investigations and changes in skill mix are likely to result in increased demand for services, and therefore healthcare scientists, in ophthalmic sciences. However, anecdotal evidence suggests

that employers are having little problem in recruiting in all areas and that there are no workforce shortages.

We therefore recommend that this occupation is removed from the shortage occupation list.

4.11 Physicists, geologists and meteorologists

Box 4.7: Physicists, geologists and meteorologists

Occupation(s) and SOC code(s): Physicists, geologists and meteorologists – 2113

Only the following medical job titles within this occupation are included on our recommended shortage occupation list:

Nuclear medicine scientist and radiotherapy physicist. Also staff working in diagnostic radiology (including magnetic resonance imaging).

Top-down data

2113 Physicists, geologists and meteorologists

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£18.16		
Percentage of employees with NVQ3+	91.8						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.4	5.7	5.7	V2 Annual percentage change in employment estimates	-11.6	23.3	33.3
P2 Annual percentage change of mean hourly pay for all employees	-0.8	0.3	0.3	V3 Annual percentage change of median total paid hours	0.7	0.3	0.3
P3 Return to occupation, given NQF3, with age and region controls	0.77	0.99	*	V4 Absolute change in proportion working for employer under 1 year	0.03	0.06	0.04
I1 Absolute change in median vacancy duration	*	*	2.1	E1 SSVs as a percentage of all vacancies	42	42	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.05	0.08	0.07	E2 SSVs as a percentage of hard-to-fill vacancies	95	95	*
V1 Annual percentage change in unemployment by sought occupation	-32.2	13.4	119.5	E3 SSVs as a percentage of total employment	1.61	1.61	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	22	12	10	Percentage of workforce trained in past 13 weeks	42	30	28

- 4.90 We received evidence from the WRT on the following job titles: nuclear medicine scientist (imaging), radiotherapy physicist and staff working in diagnostic radiology (including magnetic resonance imaging). These job titles are currently on the shortage occupation list. Passing 4 out of 8 available top-down indicators, a relatively high number, shows signs of shortage within this SOC code. However, we received bottom-up evidence in relation to only a small subset of what is a diverse occupation, and therefore the top-down data are of little relevance to the medical job titles we consider here.
- 4.91 The Institute of Physics and Engineering in Medicine (IPEM) has identified various staffing issues, including a significant number of senior staff approaching retirement age, a reduction in the number of training posts and problems in training and retaining staff in these areas. The IPEM reports that there are a considerable number of vacancies for experienced staff across all areas, but particularly at the middle and higher grades in radiotherapy and nuclear medicine.
- 4.92 The WRT told us that, in relation to radiotherapy physics, the radiotherapy workforce will need to grow as a result of the impact of new technologies and to support increasing treatment complexity.
- 4.93 They also told us that in nuclear medicine, the expansion of positron emission tomography (PET) services will cause an increase in demand. There are also pressures on these services to meet diagnostic waiting times to support the 18-week wait policy.
- 4.94 We note that training posts are reportedly being reduced as demand is increasing. This needs to be reviewed. However, as shortages may be most prevalent at the experienced end of these professions, any shortage is likely to remain for the time being. We therefore recommend that these occupations remain on the shortage occupation list. We discuss some non-health job titles within this occupation elsewhere in this report.

4.12 Nurses

Box 4.8: Nurses

Occupation(s) and SOC code(s): Nurses – 3211

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Specialist nurses working in operating theatres, operating department practitioners and specialist nurses working in neonatal intensive care units.

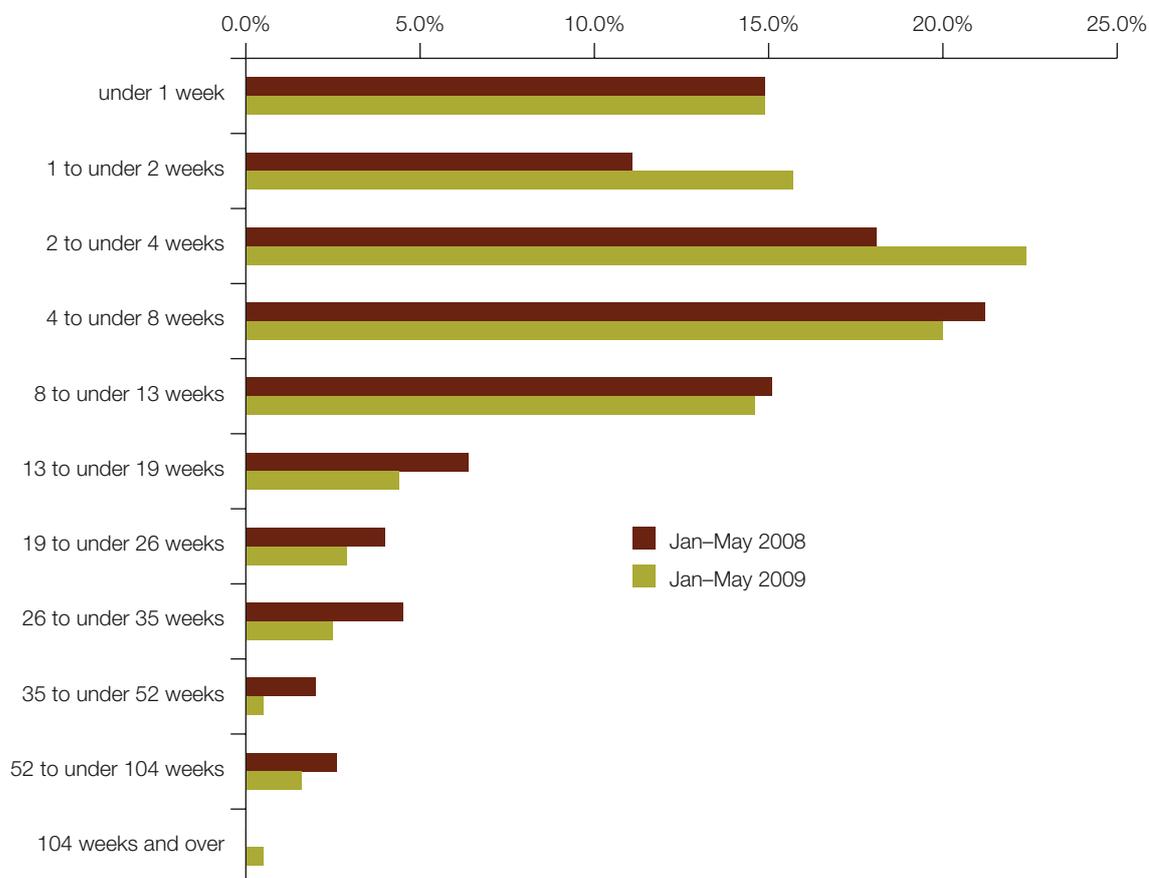
Top-down data

3211 Nurses

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£13.88		
Percentage of employees with NQF3+	91.7						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	4.7	4.6	4.6	V2 Annual percentage change in employment estimates	0.5	-0.2	0.2
P2 Annual percentage change of mean hourly pay for all employees	5.1	4.9	4.9	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.77	0.65	0.76	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.00	0.01
I1 Absolute change in median vacancy duration	5.3	-4.9	-12.3	E1 SSVs as a percentage of all vacancies	10	10	*
I2 Live unfilled vacancies/unemployment by sought occupation	3.00	5.03	5.95	E2 SSVs as a percentage of hard-to-fill vacancies	58	58	*
V1 Annual percentage change in unemployment by sought occupation	-21.1	5.8	24.2	E3 SSVs as a percentage of total employment	0.15	0.15	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	19	19	19	Percentage of workforce trained in past 13 weeks	62	58	58

- 4.95 To work in the NHS, nurses must hold a diploma or degree in one of four branches of nursing: adult, child, mental health or learning disabilities. This qualification then leads to registration with the Nursing and Midwifery Council (NMC), enabling practice as a nurse. Therefore, the qualified (Band 5+) nursing workforce meets our definition for a skilled occupation.
- 4.96 In order to work as a nurse in the UK, it is essential to be accepted onto the NMC register, and overseas nurses wishing to work in the UK must apply and be accepted to join it. Following a successful application, the applicant must undertake the Overseas Nurses Programme, for which there are limited places.
- 4.97 Our top-down analysis of national level data shows that nurses pass on just two out of nine shortage indicators, an average number. The vacancy-to-unemployment ratio was above our threshold, and has risen over the last year, corroborating evidence of buoyant demand for medical staff from employer surveys, discussed in Chapter 2. We note that nurses are the heaviest users of the shortage occupation route, but even so the majority enter via the Resident Labour Market Test (RLMT) route under Tier 2.
- 4.98 The WRT told us that currently, within the overall nursing workforce, supply largely meets demand. However, there are some exceptions which we deal with below.
- 4.99 The Royal College of Nursing argued that the nursing profession as a whole should be put back on the shortage occupation list. They told us that the vacancy rates for nurses are much higher than are reported. They said that Jobcentre Plus data showed that nursing vacancies have risen sharply since last year – with more than 4,000 extra vacancies advertised in the UK in April 2009, compared with the previous April. The College also told us that unfilled vacancy data from Jobcentre Plus were also rising. The total number of unfilled nursing posts at 1–2 weeks increased from 1,952 in the first five months of 2008 to 4,854 for the same period in 2009. The number at 2–4 weeks has risen from 3,190 in 2008 to 6,914 in 2009. For 4–8 weeks the number of unfilled vacancies had risen from 3,732 in 2008 to 6,173 this year.
- 4.100 However, our top-down data also show that the absolute change in median vacancy duration has fallen by over 12 days. Figure 4.1 illustrates how vacancy durations have fallen even though vacancy numbers have increased. It shows that the proportion of total vacancies that are filled in under 4 weeks has increased, while the proportion filled after a longer period has fallen. The net effect is a reduction in average vacancy duration.

Figure 4.1: Changes in vacancy duration in the nursing occupation in Great Britain: Jan–May 2008 compared with Jan–May 2009



Note: Vacancies are live and unfilled.
Source: Nomis (2009)

4.101 The Royal College of Nursing also expressed concern that shortages are occurring in part because more staff are leaving the profession as they reach retirement age, and this is set to increase over the next few years. They also told us that there had been a reduction in nurse education commissioning in the past few years. The College told us that community nursing was also suffering, with one in three community nurses being over 50 years old and one-fifth of practice nurses being over 55. This, they say, indicates a shortfall in the future at a time when the demand for community-based nurses will be growing.

“The RCN’s view [is that] there is already considerable evidence that the nursing profession is in a shortage nationally and that it is sensible to allow a better flow of nurses from overseas to enter the UK labour market while continuing to invest in growing and developing UK nurses.”

Royal College of Nursing response to MAC call for evidence

4.102 Our top-down data show that nearly one in five of the workforce is non-EEA born, illustrating relatively heavy use of immigrant labour in this occupation.

4.103 In summary, the number of vacancies has risen, and the rise in vacancy-to-unemployment ratio suggests there has not been a corresponding rise in labour supply. On the other hand, an increasing proportion of posts are being filled quickly. On balance, despite the Royal College of Nursing's evidence we do not, on the basis of the bottom-up and top-down information, find strong enough evidence that there is a general shortage of nurses across sectors and grades at present. Therefore, we only include nurses in certain specialities on our recommended shortage occupation list. We do, however, note the dependence on immigrant labour in this occupation and welcome further discussion with all interested parties ahead of our next review of healthcare occupations in autumn 2010.

Specialist nurses working in operating theatres

4.104 The WRT told us that specialist nurses working in operating theatres are difficult to recruit due to the nature of the work. Newly qualified nurses are reluctant to work in these areas. Specialist nurses working in theatres would cover roles such as theatre nurses, anaesthetic nurses and scrub nurses. We therefore recommend that these nurses remain on the shortage occupation list.

Operating department practitioners (ODPs)

4.105 Although ODPs are not nurses, they do fall under the 3211 nurse SOC code. The NHS IC census three-month vacancy rate was 0.5 per cent in 2008 and this had risen to 1.1 per cent for 2009. The WRT told us that the number of ODPs practising in England is broadly equal to service demand. However, many parts of the NHS still report difficulties filling substantive vacancies. In addition, there is considerable overlap between the ODP workforce and qualified nurses who choose to work in

theatres. As a result some organisations do not employ ODPs in their theatre teams. Instead they fill posts with theatre nurses. However, there is, as we have already discussed, evidence of shortages in the theatre nurse workforce too.

4.106 Currently the ODP training programme is a diploma course, which is a precursor to primary registration. However, there are plans for this to become an all-graduate entry profession with a new three-year BSc ODP degree starting in 2012, which will become the criterion for registration. As the diploma currently takes one year, this switch will lead to two years with no new home-grown qualified ODPs coming through the system. ODPs are also due to take some of the responsibilities currently held by midwives in operating theatres.

4.107 The Independent Healthcare Advisory Services told us there was also a shortage of ODPs in the independent sector. Given all of these uncertainties we recommend that the occupation remains on the shortage occupation list for the short term.

Nurses at Agenda for Change bands 7 and 8

4.108 Although we have been told that there may be shortages of nurses working at Agenda for Change bands 7 and 8 and their independent sector equivalents, we have also been told that it is unlikely that nurses working at these levels can be recruited from overseas and, therefore, we do not recommend their inclusion on the shortage occupation list.

Specialist nurses in neonatal intensive care and critical care units

4.109 In our spring 2009 report we recommended that nurses working in critical care be included on the shortage list. We understand from the WRT that the situation has eased in adult critical care. However, anecdotally, neonatal nursing roles remain difficult to recruit. The

Neonatal Taskforce's commissioning framework and the supporting principles for the provision of high-quality neonatal services are due to be launched in autumn 2009. It is likely that these will include recommendations to increase the neonatal workforce.

- 4.110 We therefore recommend that nurses working in critical care units are removed from the shortage occupation list, but that nurses in neonatal intensive care units are listed. However, we will require stronger evidence next time for them to remain on the list.

Oncology nurses

- 4.111 The Independent Healthcare Advisory Services said that they had received expressions of concern from their members in the independent sector that there was a critical shortage of oncology nurses. However, no firm evidence was submitted and, therefore, they are not recommended for the shortage occupation list at this time.

Registered nurses working in the care sector

- 4.112 We received evidence from a number of stakeholders about a shortage of registered nurses working in the care sector. We have already outlined above that, in general, the supply of nurses meets demand within the NHS, except in certain areas. However, a large number of registered nurses also work within the care sector, much of which is independent.
- 4.113 Some of the problems appear to stem from the fact that many care homes are not able to equal NHS pay rates or benefits. We also understand that many nurses do not wish to work with the elderly, and some see career advancement options as more limited within the care sector. Workload is perceived to be higher and training opportunities fewer. We were told by

a number of stakeholders that nurses therefore often move from the care sector into the NHS. However, the Royal College of Nursing told us the opposite was true and that the independent and social care sectors were beginning to recruit nurses from the NHS.

- 4.114 The English Community Care Association told us that it had conducted a survey among its members and found that the average time to recruit to a vacancy for a nurse was between three and six months. The National Care Association told us that evidence on the numbers, source and availability of nurses working in the independent sector is very difficult to obtain. They had conducted a limited survey of their members who, in the main, reported concerns with nurse recruitment and retention.
- 4.115 It is a condition of a registered care home that they have at least one registered nurse on duty at all times. We were told that recruiting from elsewhere in the EEA was problematic because the level of English language was often not to the level required within a care setting.
- 4.116 In conclusion, it is not clear to us that a lack of nurses available to work in care homes results from any national shortage of nurses. It appears to be more to do with nurses finding the option unattractive. In addition, not all of those who submitted evidence specifically requested that nurses for care homes be placed on the shortage occupation list. They simply stated that the ability to recruit nurses via Tier 2 needs to remain an option. We believe they will still be able to utilise the RLMT route.
- 4.117 We therefore do not recommend nurses for care homes for the shortage occupation list, but we will look closely at this area again when we review healthcare occupations in autumn 2010.

4.13 Medical radiographers

Box 4.9: Medical radiographers

Occupation(s) and SOC code(s): Medical radiographers – 3214

Only the following job titles within this occupation are included on our recommended shortage occupation list:

HPC registered diagnostic radiographer, HPC registered therapeutic radiographer and sonographer.

Top-down data

3214 Medical radiographers

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£17.53		
Percentage of employees with NVQ3+	93.6						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	0.3	7.8	7.8	V2 Annual percentage change in employment estimates	17.8	8.2	-5.6
P2 Annual percentage change of mean hourly pay for all employees	-3.4	7.0	7.0	V3 Annual percentage change of median total paid hours	1.1	0.8	0.8
P3 Return to occupation, given NQF3, with age and region controls	1.19	1.39	1.44	V4 Absolute change in proportion working for employer under 1 year	0.02	0.04	0.01
I1 Absolute change in median vacancy duration	*	-7.6	*	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.40	0.43	0.36	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-30.2	-2.3	80.0	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	8	8	14	Percentage of workforce trained in past 13 weeks	39	51	54

4.118 The top-down data are highly relevant to the three job titles listed in Box 4.9, which are currently on the shortage occupation list. There is some evidence of shortage in this SOC code, passing three out of eight available indicators. In particular, both mean and median pay have risen.

HPC registered diagnostic radiographers

4.119 The WRT reported that imaging services provide support to a wide range of care areas and that there has been year-on-year growth in imaging referrals leading to increased workforce demand. The workload is also being increased by a variety of policy drivers including the National Stroke Strategy, the 18-week wait policy, the Cancer Reform Strategy and abdominal aortic aneurysm screening. The extension of GP contract hours may lead to an increased demand for diagnostics to be provided 'out of hours'. The WRT said that there are already changes in working practices towards a 24/7 service provision through the increased use of shift working. This is, so the WRT tells us, inevitably leading to an increase in headcount, although we also note that, according to our top-down data, employment has fallen in the occupation at large.

4.120 The WRT told us that efforts focused on improving recruitment to training courses and reducing in-course attrition will improve the situation in the medium to longer term. We recommend, for the short term, that this occupation remains on the shortage occupation list.

HPC registered therapeutic radiographers

4.121 The therapeutic radiography group make up a small proportion of the 25,318 radiographers (including diagnostic and therapeutic) registered with the HPC.

4.122 The WRT told us that in 2007 the National Radiotherapy Advisory Group reported a general consensus among experts that the projected need for radiotherapy was significantly underestimated 15–20 years ago. There is a gap, estimated at 63 per cent, between current activity levels and optimal treatment levels if radiotherapy were to be given to all who might benefit. The WRT said that the position is set to worsen as cancer incidence increases with the ageing population. This means that primary care trusts will need to commission more attendances for radiotherapy treatment.

4.123 Therapeutic radiographer training commissions have increased from 135 in 1997 to 361 in 2005. However, this improvement is offset by a high attrition rate of up to 50 per cent on some training courses.

4.124 The NHS IC census survey for March 2009 showed a three-month vacancy rate of 0.7 per cent. However, the DH National Cancer Analysis Team recorded an 11 per cent vacancy rate in 2009, which we assume means that the majority of vacancies are filled within three months. With increase in workload we do not want to put this important area in jeopardy and, therefore, for the time being we recommend that this occupation is retained on the shortage occupation list. However, the reasons for the high attrition rate need to be investigated and, if possible, dealt with.

Sonographers

4.125 The sonographer workforce consists of people from a diverse range of professions. There is currently no requirement for an individual working as a sonographer to be solely registered as such. This means that solid workforce data are difficult to extract.

- 4.126 Sonographers may be drawn from a variety of professional backgrounds including, potentially, significant numbers from radiography and healthcare science, both of which are workforces identified as being in shortage. This limits the potential pool of recruits into the sonography profession, reducing the supply of new sonographers and hampering the replacement of losses from the existing workforce.
- 4.127 Alongside other healthcare professions the sonography workforce has been required to work towards reducing waiting lists to meet the 18-week referral to treatment target. However, the WRT told us that the progress made so far is unsustainable with the current workforce. The WRT said that there was anecdotal evidence of large amounts of overtime being worked, along with a rising incidence of long-term sickness.
- 4.128 The WRT told us that there is reluctance in the service to recruit new trainees, in part due to the difficulties in arranging high-quality clinical placements for the trainees due to increasing service pressures. Detailed workforce planning in this area is hampered by the lack of coherent professional structure. The WRT told us that these problems are being addressed, but they are not going to be resolved in the short term. Therefore, we recommend that this job title remains on the shortage occupation list and we will review progress when we next review healthcare occupations in autumn 2010.

4.14 Medical and dental technicians

Box 4.10: Medical and dental technicians

Occupation(s) and SOC code(s): Medical and dental technicians – 3218

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Nuclear medicine technologist and radiotherapy technologist.

Top-down data

3218 Medical and dental technicians

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£12.39		
Percentage of employees with NVQ3+	63.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	8.5	2.1	2.1	V2 Annual percentage change in employment estimates	-21.5	4.9	7.4
P2 Annual percentage change of mean hourly pay for all employees	-0.5	5.3	5.3	V3 Annual percentage change of median total paid hours	1.3	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.96	0.77	1.06	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.01	0.02
I1 Absolute change in median vacancy duration	-6.7	2.2	-2.2	E1 SSVs as a percentage of all vacancies	35	35	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.29	0.33	0.33	E2 SSVs as a percentage of hard-to-fill vacancies	92	92	*
V1 Annual percentage change in unemployment by sought occupation	-10.2	1.9	27.8	E3 SSVs as a percentage of total employment	0.17	0.17	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	10	6	9	Percentage of workforce trained in past 13 weeks	40	39	43

- 4.129 We received evidence from the WRT on the following job titles: nuclear medicine technologist and radiotherapy technologist. These job titles are currently on the shortage occupation list. Passing two out of nine available top-down indicators shows that the occupation group as a whole is not in shortage. However, here we are just looking at a small subset and, therefore, the top-down situation is less relevant.
- 4.130 The IPEM has identified problems in training and retaining staff in these areas. The IPEM reported that there are a considerable number of vacancies for experienced staff across all areas, but particularly at the middle/higher grades in radiotherapy and nuclear medicine.
- 4.131 The WRT told us that the radiotherapy workforce will need to grow as a result of the impact of new technologies and to support increasing treatment complexity. They also told us that, in nuclear medicine, the expansion of positron emission tomography (PET) services will cause an increase in demand. There are also pressures on these services to meet diagnostic waiting times to support the 18-week wait policy. We therefore recommend that these two job titles remain on the shortage occupation list.

4.15 Speech and language therapists

Box 4.11: Speech and language therapists

Occupation(s) and SOC code(s): Speech and language therapists – 3223

Only the following job title within this occupation is included on our recommended shortage occupation list:

Speech and language therapist (Agenda for Change bands 7+ or their independent sector equivalents).

Top-down data

3223 Speech and language therapists

Skilled		Skilled in top-down analysis					
SOC skill level classification	3	Median hourly pay for all employees			£15.12		
Percentage of employees with NVQ3+	92.0						
Shortage		Excluding National Employers Skills Survey-based data, occupation passes 3 out of 7 valid indicators					
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.3	1.9	1.9	V2 Annual percentage change in employment estimates	15.9	-0.6	-28.7
P2 Annual percentage change of mean hourly pay for all employees	4.8	-5.9	-5.9	V3 Annual percentage change of median total paid hours	0.0	5.6	5.6
P3 Return to occupation, given NQF3, with age and region controls	0.59	0.82	*	V4 Absolute change in proportion working for employer under 1 year	-0.03	-0.01	0.00
I1 Absolute change in median vacancy duration	99.5	-3.6	*	E1 SSVs as a percentage of all vacancies	27	27	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.44	1.00	0.47	E2 SSVs as a percentage of hard-to-fill vacancies	60	60	*
V1 Annual percentage change in unemployment by sought occupation	-31.7	7.7	85.7	E3 SSVs as a percentage of total employment	0.16	0.16	*
Sensible indicators		Sept 08	Mar 09	Sept 09			
Percentage of workforce born non-EEA	4	4	8	Percentage of workforce trained in past 13 weeks	63	45	53

- 4.132 This job title is currently on the shortage occupation list. Top-down data are highly relevant in this case and pass three out of seven available indicators, showing potential, but not especially strong, signs of shortage. The WRT told us that, as in summer 2009, the workforce supply of newly qualified and middle grade speech and language therapists is approximately equal to demand nationally. However, there are shortages at the more senior level.
- 4.133 The relatively high vacancy-to-unemployment ratio in the top-down data suggests some potential difficulty in filling posts. Additionally, the WRT told us that a recent survey by Rossiter (2008) identified a number of difficulties in filling specialist posts: for example, 42 per cent of posts for specialists in adult learning disabilities and 25 per cent of specialists in adult neurology were unfilled at the first advertisements.
- 4.134 The survey also identifies an ongoing expansion in demand for dysphagia trained adult therapists. The WRT said that this expansion is likely to be partly driven by the National Stroke Strategy, which has led to the establishment of additional community rehabilitation teams for early supported discharge for people with strokes. Speech and language therapists are essential members of these teams. The National Stroke Strategy is also likely to bring about other service demands on therapists.
- 4.135 The Royal College of Speech and Language Therapists (RCSLT) suggested that the shortage is a temporary situation. The College is developing mutual recognition agreements with other European countries, which may help to alleviate shortages, but these have not been finalised yet.
- 4.136 In our spring 2009 report, we said we wanted to see better evidence to keep this occupation on the shortage list. We would encourage the RCSLT initiative as a means to pursue EEA labour to fill vacancies in the hope that this occupation may be removed on the next occasion. In the meantime, we recommend that speech and language therapists working at Agenda for Change bands 7 and above, and their independent sector equivalents, remain on the shortage occupation list.

4.16 Therapists not elsewhere classified

Box 4.12: Therapists n.e.c.

Occupation(s) and SOC code(s): Therapists n.e.c. – 3229

Only the following job title within this occupation is included on our recommended shortage occupation list:

HPC registered orthoptist.

Top-down data

3229 Therapists n.e.c.

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£16.27		
Percentage of employees with NVQ3+	79.8						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	5.6	1.9	1.9	V2 Annual percentage change in employment estimates	-10.4	9.9	15.8
P2 Annual percentage change of mean hourly pay for all employees	8.8	0.0	0.0	V3 Annual percentage change of median total paid hours	1.6	0.8	0.8
P3 Return to occupation, given NQF3, with age and region controls	1.01	0.65	0.64	V4 Absolute change in proportion working for employer under 1 year	-0.04	-0.01	0.00
I1 Absolute change in median vacancy duration	-172.4	28.1	-2.1	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.17	0.16	0.13	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-22.0	16.6	66.3	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	6	8	9	Percentage of workforce trained in past 13 weeks	50	47	42

- 4.137 This job title is currently on the shortage occupation list. Orthoptists are a small subset of a large SOC code. Therefore, although the top-down data do not point to shortage, this is not highly relevant. In our spring 2009 report, we said we needed better evidence this time around in order to keep this occupation on the shortage occupation list.
- 4.138 The number of orthoptists registered with the HPC has fallen from 1,328 in 2003 to 1,278 in 2009. We understand that undergraduate commissions are based on the workforce needs of England only.
- 4.139 The WRT said that, in 2008, there were 38 full-time equivalent vacancies (4.7 per cent of the speciality). In addition, in order to meet waiting time targets, additional hours have been worked by existing consultants.
- 4.140 We were also told that changes to models of service delivery, for example othoptist lead glaucoma clinics, have resulted in increased demand on orthoptists. Demand has risen for a number of other reasons too.
- 4.141 We considered that evidence provided on this occasion is stronger than previously submitted and we recommend that HPC registered orthoptists remain on the shortage occupation list.
- Seventeen new posts were funded for 2008/9 and the likelihood is that these will not be filled. Although there are no breaches of the 18-week wait policy for new patients, follow-up appointments are apparently regularly cancelled or deferred by a matter of months and clinics are also being overbooked to allow these new cases to be booked.

4.17 Occupational therapists

Box 4.12: Occupational therapists

Occupation(s) and SOC code(s): Occupational therapists – 3222

This occupation is not included on our recommended shortage occupation list.

Top-down data

3222 Occupational therapists

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£15.41		
Percentage of employees with NVQ3+	89.9						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	4.0	3.6	3.6	V2 Annual percentage change in employment estimates	1.8	-3.1	-17.6
P2 Annual percentage change of mean hourly pay for all employees	4.0	4.3	4.3	V3 Annual percentage change of median total paid hours	0.2	2.5	2.5
P3 Return to occupation, given NQF3, with age and region controls	0.74	0.98	0.88	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.02	0.09
I1 Absolute change in median vacancy duration	1.4	5.9	3.4	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.53	0.75	0.68	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-32.2	-5.2	45.5	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	5	8	8	Percentage of workforce trained in past 13 weeks	52	62	62

- 4.142 This job title is not currently on the shortage occupation list. This occupation passes on four out of nine available top-down indicators for shortage, an above average number, but below our 50 per cent threshold for strong top-down evidence of shortage.
- 4.143 The WRT submitted no evidence in relation to this occupation, but we heard from a number of other stakeholders relating to shortages in the independent sector.
- 4.144 Skills for Care and Development told us that on one day during July 2009, 328 occupational jobs were being advertised. The Association of Directors of Adult Social Services also supported the addition of occupational therapists to the shortage occupation list.
- 4.145 We received limited results of a survey facilitated by Skills for Care. This survey indicated some possible evidence of shortages within non-NHS employers for occupational therapists. Some vacancies appear to have been vacant for over a year. Employers are using various efforts to cover vacancies, including using temporary staff and asking existing workers to work longer hours.
- 4.146 *Occupational therapy in adult social care in England: sustaining a high quality workforce for the future* (DH, 2008) says, in relation to occupational therapists, that historically there have been problems in recruiting occupational therapists to adult social service departments in England. However, research findings in the report seem to suggest that the problem may not be the same throughout England. The main problems reported with recruitment and retention were high living costs in particular areas; lower pay structures for occupational therapists in local authorities than in neighbouring NHS trusts; and difficulties in recruiting experienced staff to senior posts. Respondents to the research survey cited good recruitment and retention packages; an established team with a good reputation; strong continuing professional development programmes; and a good supply of new graduates coming out of universities into the profession as contributing to successful recruitment and retention.
- 4.147 Although this occupation showed some signs of shortage from our top-down analysis, the WRT presented no evidence of shortage within the NHS and the evidence we received regarding the independent sector was not robust enough in relation to whether shortages existed across the UK. We were also not convinced that, given some of the apparent reasons for shortage, it would be sensible, at this time, to put this occupation on the shortage occupation list. We would be happy to work with the sector ahead of our autumn 2010 report to see if there is more comprehensive evidence.

4.18 Other medical occupations

- 4.148 The WRT also recommended some other health occupations which do not fall into an immediately recognisable medical SOC code and where, therefore, the top-down data are not highly relevant. However, the bottom-up evidence presented to us was insufficient and, therefore, we do not recommend them for the shortage occupation list on this occasion. The job titles were: medical equipment engineers and rehabilitation engineers. We received no evidence in relation to any other healthcare occupations not already mentioned in this report.

4.19 Future updates

4.149 We are very grateful for the extensive work that the WRT in particular, and its partner organisations, have carried out in preparing its advice for the Committee. Our next review of healthcare occupations will be in our autumn 2010 report and we plan to carry out further such reviews annually thereafter.

Chapter 5: Engineering occupations

5.1 Introduction

5.1 In this chapter we discuss the evidence we received in relation to engineering-related occupations.

5.2 Our approach

5.2 The engineering sector is diverse and there are a large number of specialisms. Many sectors have developed their own occupational titles and many employers have different names for similar roles. The sector told us that this presents them with a problem in respect of our requirement that the evidence we receive specifies which occupations and job titles, according to SOC2000 at the unit group (4-digit) level, the evidence relates to. This is because the job titles listed in SOC2000 do not cover many of the occupational categories used by the engineering sector.

5.3 We held an engineering stakeholder workshop in March 2009, involving Semta, Energy & Utility Skills (EU Skills), ConstructionSkills, Oil & Gas UK, Cogent SSC Ltd, the Engineering Construction Industry Training Board, Marshall Aerospace, AeroAcademy, the Institution of Civil Engineers, the Engineering Council UK, the Institution of Chemical Engineers (IChemE), GoSkills, the Ground Forum, the Recruitment and Employment Confederation, Skills for Logistics, e-skills, Lantra, CLAAS UK, the Scottish Council for Development and Industry (SCDI), Rolls-Royce and IMI Automotive Skills.

5.4 Before the workshop, Semta agreed to work across the sector to look at how the structure of engineering occupations could be unified to help alleviate the challenges of relating them to SOC categories. They prepared a paper about this, which they presented at the workshop.

5.5 At the workshop it was agreed that for this review the sector would provide us with occupations or job titles which were as closely mapped to SOC2000 as possible.

5.6 During June and July 2009, we held follow-up meetings with individual stakeholders to discuss our approach. We also attended a meeting organised by Semta which included attendees from the Engineering Council UK, ConstructionSkills, SummitSkills, the Engineering Construction Industry Training Board, EU Skills, IMI Automotive Skills and GoSkills.

5.7 We now discuss in detail the engineering-related occupations that we recommend, either totally or in part or not at all, for inclusion on the shortage occupation list.

5.3 Physicists, geologists and meteorologists

Box 5.1: Physicists, geologists and meteorologists

Occupation(s) and SOC code(s): Physicists, geologists and meteorologists – 2113

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Engineering geologist, hydrogeologist, geophysicist, geoscientist, geophysical specialist, engineering geophysicist and engineering geomorphologist.

Top-down data

2113 Physicists, geologists and meteorologists

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£18.16		
Percentage of employees with NVQ3+	91.8						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.4	5.7	5.7	V2 Annual percentage change in employment estimates	-11.6	23.3	33.3
P2 Annual percentage change of mean hourly pay for all employees	-0.8	0.3	0.3	V3 Annual percentage change of median total paid hours	0.7	0.3	0.3
P3 Return to occupation, given NQF3, with age and region controls	0.77	0.99	*	V4 Absolute change in proportion working for employer under 1 year	0.03	0.06	0.04
I1 Absolute change in median vacancy duration	*	*	2.1	E1 SSVs as a percentage of all vacancies	42	42	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.05	0.08	0.07	E2 SSVs as a percentage of hard-to-fill vacancies	95	95	*
V1 Annual percentage change in unemployment by sought occupation	-32.2	13.4	119.5	E3 SSVs as a percentage of total employment	1.61	1.61	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	22	12	10	Percentage of workforce trained in past 13 weeks	42	30	28

Stakeholder evidence:

We received evidence from the Ground Forum, Oil & Gas UK and the SCDI.

- 5.8 In our autumn 2008 report we included job titles relating to ground engineering professionals on our recommended shortage list. We placed some of the job titles under this SOC code and also under the occupation of civil engineers.
- 5.9 The Ground Forum stated that there are continued labour shortages in the ground engineering sector. We were told that the ground engineering professionals that fall within this occupation are engineering geologists.
- 5.10 Oil & Gas UK also said that there are labour shortages within the oil and gas industry.
- 5.11 We previously confirmed that physicists, geologists and meteorologists are skilled. We also received evidence that engineering geologists are required to have a first degree in geology and an MSc in engineering geology. Oil & Gas UK said that all occupations within the oil and gas industry require a minimum qualification of a degree level or above, which is equivalent to NVQ level 5.
- 5.12 Our top-down analysis of the data confirmed that physicists, geologists and meteorologists passed 4 out of 8 valid shortage indicators, a relatively high number satisfying our criteria for strong top-down evidence of shortage. The top-down data suggest that there have been significant increases in employment in the occupation and also increases in the proportion of new hires. In addition, vacancy durations are increasing but the ratio of Jobcentre Plus (JCP) vacancies to Jobseeker's Allowance (JSA) claimants is low, suggesting that the level of labour supply for vacancies is relatively high, although JCP data for highly skilled occupations need to be regarded with a degree of caution. The data also indicate that, like other occupations, the JSA claimant count in this occupation has increased considerably.
- 5.13 In terms of shortage, we received evidence from the Ground Forum that surveys carried out by them in 2004 and 2008 confirmed that there were vacancy rates of 12 to 15 per cent. We were also told that companies in the sector had reported that numbers in the industry have remained largely the same as in previous years, despite the economic downturn.
- 5.14 The Ground Forum told us that there is no evidence of a 'pool' of unemployed ground engineering professionals. They said anecdotal evidence suggests that emigration may have reduced the number of ground engineering professionals in the UK during the past 12 months.
- 5.15 We saw evidence that a Ground Forum survey, conducted in April 2009, indicated that the recession had affected hiring in the past 12 months; 50 per cent of respondents had reduced the number of ground engineering professionals they employ; 33 per cent had remained the same; and 17 per cent had increased the number. Nevertheless, the Ground Forum said that projections for the next 12 months indicated that 70 per cent of the respondents expected to employ the same number of ground engineering professionals as now, and that 23 per cent expected an increase.

"The level of work in the construction sector has fallen significantly since autumn 2008, but the effect on ground engineering consultants has been less dramatic."

Ground Forum response to MAC call for evidence

- 5.16 The Ground Forum told us that there is evidence of recruitment activity and that this is in part due to the industry's involvement in large infrastructure projects such as Crossrail, the Thameslink improvements and the nuclear waste programme. The Ground Forum said this activity indicates that the need for ground engineering professionals begins when projects are still in their planning stage.
- 5.17 We were also told that design staff are being placed in the clients' office for the duration of the contract, which could, in some instances, run for several years. We were told that this restricts the flexibility of staff deployment and resources and therefore increases the need for additional ground engineering professionals.
- 5.18 Oil & Gas UK told us that occupations in the oil and gas industry typically earn much higher than average salaries. They said that wages for shortage occupations within the industry have increased over recent years. We also received evidence that the annual Hewitt salary survey of oil companies operating in the UK shows that the annual salary increases within the oil and gas sector are continuing to rise, with increases above inflation each year.
- 5.19 In terms of sensible, it is notable that the proportion of non-EEA nationals employed in this occupation as a whole appears to have fallen substantially since our report in autumn 2008. Training activity has declined too. It was argued that there is a widely recognised shortage of UK civil engineering graduates, but that ground engineering is a small industry and does not have the resources to be able to influence take-up of civil engineering or geology first degrees as a precursor to specialist study.
- 5.20 The Ground Forum told us that while many of the difficulties faced by the industry are outside of its control, they continue to lobby government for financial support for students, and remain committed to improving communication between employers and universities.
- 5.21 We also received evidence of in-house training to give non-engineer employees sufficient knowledge to undertake some of the more routine jobs that would otherwise be done by ground engineering professionals. We also saw evidence of companies making greater use of independent, self-employed ground engineering professionals.
- 5.22 Oil & Gas UK said that the oil and gas industry has invested heavily in the training and development of employees. We were told that due to ongoing skills shortages within the industry, 'fast-track' promotion systems are now common within certain occupations, as companies intensively train less experienced employees in order to fill the senior-level vacancies across the industry. The industry has collectively invested around £6 million to set up the Oil & Gas Academy, which is working on identifying and tackling key skills gaps, as well as providing cross-industry training programmes and working with UK schools and universities to ensure a constant feed of new entrants to the industry.
- 5.23 The Ground Forum presented evidence to indicate that the shortage of ground engineering professionals is not only restricted to young engineers. Recruitment dropped sharply during the recession in the early 1990s and the industry lost a number of graduates. This resulted in a shortage of people with 15–20 years' experience.

- 5.24 Physicist, geologist and meteorologist is a diverse occupation and, when taken in combination with the relatively strong top-down evidence of shortage, and also in light of the fact that we only received evidence on specific job titles, we believe there is sufficient evidence to justify retaining some job titles within the occupation on our recommended shortage list, as set out in Box 5.1. We accept that the ground engineering occupation comes into play when projects are still in their planning stages. However, the industry needs to take steps to ensure that it has a sufficiently robust strategy in place to increase the stock of UK workers in the longer term.
- 5.25 We reviewed civil engineers in our autumn 2008 report and included all job titles within this occupation on our recommended shortage list.
- 5.26 For this review, we received very little evidence from the engineering sector as a whole arguing that there is a labour shortage in this occupation. However, we did receive evidence in support of shortages within the ground engineering, electricity generation, and oil and gas industries.

5.4 Civil engineers

Box 5.2: Civil engineers

Occupation(s) and SOC code(s): Civil engineers – 2121

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Geotechnical engineer, geotechnical design engineer, geotechnical specialist, reservoir panel engineer, rock mechanics engineer, soil mechanics engineer, geomechanics engineer, tunneling engineer; petroleum engineer, geoenvironmental engineer, contaminated land engineer, drilling engineer, completions engineer, fluids engineer, reservoir engineer, status resource engineer, offshore and subsea engineer, control and instrument engineer, process safety engineer, planning drilling engineer, subsurface engineer, project civil engineer in the electricity generation industry.

Top-down data

2121 Civil engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£16.13		
Percentage of employees with NVQ3+	82.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 5 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	5.1	6.8	6.8	V2 Annual percentage change in employment estimates	0.8	13.3	15.8
P2 Annual percentage change of mean hourly pay for all employees	3.4	9.0	9.0	V3 Annual percentage change of median total paid hours	2.4	-0.1	-0.1
P3 Return to occupation, given NQF3, with age and region controls	1.08	0.65	0.82	V4 Absolute change in proportion working for employer under 1 year	0.00	0.03	0.03
I1 Absolute change in median vacancy duration	-11.3	8.5	1.6	E1 SSVs as a percentage of all vacancies	60	60	*
I2 Live unfilled vacancies/unemployment by sought occupation	1.35	0.72	0.25	E2 SSVs as a percentage of hard-to-fill vacancies	88	88	*
V1 Annual percentage change in unemployment by sought occupation	-9.2	144.1	436.5	E3 SSVs as a percentage of total employment	2.10	2.10	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	10	14	11	Percentage of workforce trained in past 13 weeks	31	36	33

Stakeholder evidence:

We received evidence from the Ground Forum, Construction Skills, EU Skills, Oil & Gas UK, SCDI and a leading employer of petroleum engineers.

- 5.27 We received evidence from the Ground Forum that the ground engineering professionals that fall within this occupation are geotechnical engineers. This job title requires a first degree in civil engineering, plus an MSc in soil mechanics. We were also told that engineers in the oil and gas industry are qualified to National Qualifications Framework (NQF) level 3 or above. Our analysis of the top-down data confirms that civil engineers are skilled.
- 5.28 Civil engineers passed on 5 out of 9 shortage indicators, which suggests that this occupation may be in shortage. The top-down data indicate that there have been significant increases in employment in the occupation and also increases in the number of new hires. Pay in the occupation has also increased considerably although it is based on the Annual Survey of Hours and Earnings (ASHE) 2008, so pre-dates the current recession. On the other hand, large increases are observed in the unemployment claimant count. The data also indicate that the ratio of JCP vacancies to claimant count is low, although similar caveats apply here as to the data for physicists, geologists and meteorologists, discussed earlier.
- 5.29 We received evidence from Ground Forum that the recession has had an impact on the value of new orders received by its members, for example a drop in orders in the fourth quarter of 2008. However, they also told us that developers are continuing to prepare for the upturn by undertaking all the preparatory work that would allow a quick start when funding becomes available. We are told that this includes ground engineering activities.
- 5.30 We were told that ground engineering professionals make their contribution at the very start of the project. For example, contaminated land specialists are likely to be active when a site is purchased by a developer and other geotechnical work is done at the first stage of the building project. Therefore, ground engineering can expect to be among the very earliest sectors to experience any upturn.
- 5.31 The Ground Forum told us of reported tender activity, which suggests a number of projects ready to start as soon as the economic climate changes.
- 5.32 We were presented with evidence from a leading employer of petroleum engineers that it is becoming increasingly problematic to recruit EEA national graduates who have undertaken degree courses in relevant disciplines for petroleum engineer roles. We saw evidence that the number of UK engineering students that chose to pursue a career in engineering has fallen. We were told that up to 40 per cent of UK engineering students choose not to pursue a related career. This has shrunk the available pool of skilled recruits.
- 5.33 Evidence was provided showing that, by 2010, there will be a 10–15 per cent shortfall in the numbers of petroleum engineers in relation to global demand.
- 5.34 We saw evidence that the average length of time between first advertising a UK vacancy and subsequently filling that vacancy is six to seven months and that the duration period is increasing. We were also told of higher than average salary increases in the industry.
- 5.35 EU Skills told us that around 26 power stations, representing approximately 25 per cent of the UK's electricity generating capacity, are scheduled to close by 2018. EU Skills said the UK must construct new power stations and other energy infrastructure at a time when there will

be very high demand for engineering construction resources from other sectors. EU Skills said the increasing role of renewable energy in the UK's energy mix will be an additional draw on an already stretched labour market.

"The employer-led Power Sector Skills Strategy Group recognises the issue of global demand for power engineering skills and the fact that much of the infrastructure around the world is of a similar age to that of the UK's. Also, with demand for power output increasing the world over, the UK will have to work hard to gain the quantity and quality of skills it needs and even harder to keep it. Consequently, there is strong global demand for skilled workers with experience of the electricity generation industry, and it is likely to increase considerably in the coming years."

EU Skills response to MAC call for evidence

the Labour Force Survey (LFS) and the sectors for which ConstructionSkills has responsibility, that its evidence is relevant to just over half of those employed as civil engineers. Therefore we give heavy weight to it.

- 5.39 ConstructionSkills said that the recession continues to impact, despite some signs that the rate of decline has slowed.

"The industry is experiencing the most severe contraction in over 30 years, and despite the Government's and industry's best efforts to lessen the impact its effect on jobs and employment is evident. Indeed, the situation has progressively deteriorated since the beginning of the economic slowdown and appears to have accelerated after crisis in the financial markets in September and October 2008."

EU Skills response to MAC call for evidence

- 5.36 We received evidence that in the electricity generation industry there is an ageing workforce. For example, we were told that approximately 59 per cent of the current generation workforce is expected to retire within the next 15 years.
- 5.37 Oil & Gas UK told us that companies within the oil and gas industry have vacancies, particularly in the engineering and science/technology fields, which they find difficult to fill. We were told that these vacancies were taking from 3 to 12+ months to fill, with an average of around 6 months. We were told that several of the companies reported vacancies in the engineering and science/technology fields that, even after a year, they had been unable to fill.
- 5.38 With regard to the construction industry, ConstructionSkills told us that there is no strong evidence of any shortage of civil engineers. We note from examining
- 5.40 We were told that the majority of major contractors have reported a steep decline in activity and there are signs that the current situation will worsen throughout the remainder of 2009.
- 5.41 Figures from the Office for National Statistics (ONS) show that orders in the three months to April 2009 fell by 9 per cent compared with the previous three-month period.
- 5.42 We received evidence of job losses. For example, we saw estimates that suggest the construction industry has lost around 10 per cent of its workforce, around 250,000 people, in less than 18 months. We received evidence that the redundancies have affected all occupational groups from the unskilled to managers and professionals. It is plausible that the large increases in claimant count observed for civil engineers in the top-down data to some extent reflect

- job losses in the construction industry. However, the top-down data show that the civil engineer workforce continues to grow strongly. It is therefore unclear whether the downturn in construction is impacting on civil engineering as a whole.
- 5.43 Turning to sensible, the Ground Forum said that it is a financial sponsor and regular contributor to a magazine which aims to stimulate interest in civil engineering. We were also told that, individually, a number of Ground Forum members visit schools and interact with students in order to promote the sector.
- 5.44 However, we were told that the recent changes in first degree civil engineering and earth sciences courses is believed to adversely affect the take-up of ground engineering MSc courses, because they do not contain sufficient ground engineering content for someone to be considered to be a geotechnical engineer or engineering geologist on graduation.
- 5.45 We also saw evidence of training and upskilling of the potential workforce. For example, we were told of energy companies that operate a number of internal engineering academies to ensure that petroleum engineers are at the forefront of technology changes.
- 5.46 With regard to mechanisation, EU Skills told us that the electricity generation industry is already capital intensive and such technological changes would take many years to develop and implement. They said that, in the short term, there are no alternatives to using labour and if there is not enough labour to undertake the required workload the implications are that the work may not be completed within agreed timescales and investment plans may be pushed back. EU Skills also said that the power sector cannot contemplate
- a future where it is forced to operate with sub-critical staff numbers and if that were to happen it would be forced to close plants, leading to supply interruptions with damaging impact across the economy. We were also presented with evidence that the oil and gas industry has made considerable investment over the last few decades in developing cutting-edge technology and efficient production and operating systems.
- 5.47 In conclusion, despite apparently strong top-down evidence of shortage, rapidly rising unemployment and substantial numbers of redundancies and evidence from a highly relevant Sector Skills Council telling us there is not an overall shortage means that we cannot justify the inclusion of the whole civil engineer occupation on our shortage list. We note from the Points Based System (PBS) data that employers have made use of the shortage occupation route to bring in civil engineers, but we also note that they have also used other routes within Tier 2 of the PBS.
- 5.48 Civil engineering is a diverse occupation and therefore it is plausible that there will be shortages in relation to some job titles and not others. We believe we have received sufficient evidence to justify retaining some job titles relating to the ground engineering, oil and gas and electricity generation industries on our recommend shortage list as listed in Box 5.2.
- 5.49 This occupation is not on the current shortage occupation list. Oil & Gas UK and the SCDI argue that there is a shortage of electrical engineers in the oil and gas industry. Our analysis of the data confirms that electrical engineers are skilled.

5.5 Electrical engineers

Box 5.3: Electrical engineers

Occupation(s) and SOC code(s): Electrical engineers – 2123

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Electrical engineer in the oil and gas industry and (discussed later in this chapter) power system engineer, control engineer, protection engineer, project control engineer, control and instrumentation engineer, assistant engineer, electrical engineer in the electricity transmission and distribution industry.

Top-down data

2123 Electrical engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£18.25		
Percentage of employees with NVQ3+	76.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	0.9	5.6	5.6	V2 Annual percentage change in employment estimates	-1.2	-5.6	-4.0
P2 Annual percentage change of mean hourly pay for all employees	1.1	4.8	4.8	V3 Annual percentage change of median total paid hours	-0.6	1.8	1.8
P3 Return to occupation, given NQF3, with age and region controls	1.06	1.03	1.19	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.01	0.02
I1 Absolute change in median vacancy duration	-8.9	-6.5	-8.7	E1 SSVs as a percentage of all vacancies	39	39	*
I2 Live unfilled vacancies/unemployment by sought occupation	1.52	1.27	0.64	E2 SSVs as a percentage of hard-to-fill vacancies	86	86	*
V1 Annual percentage change in unemployment by sought occupation	-21.4	52.5	170.9	E3 SSVs as a percentage of total employment	0.46	0.46	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	7	8	7	Percentage of workforce trained in past 13 weeks	27	32	31

Stakeholder evidence:

We received evidence from Oil & Gas UK, SCDI and EU Skills.

5.50 This occupation passed on 4 out of 9 valid shortage indicators, which is a significantly higher proportion than average. Pay is increasing, although the increase in mean pay falls short of the threshold for shortage. There remains a high ratio of JCP vacancies to JSA claimants seeking work in the occupation, indicating that a limited pool of unoccupied workers may be available to fill posts.

5.51 In terms of shortage, Oil & Gas UK told us that in 2009, with the support of SCDI, they undertook a data collection exercise through their membership to identify the key shortage occupations within the industry. They said a total of 30 member companies responded to their request. Due to the ongoing difficulties with recruitment in key oil and gas occupations, companies are investing increasingly large amounts of money and effort into recruitment. Oil & Gas UK said over 90 per cent of respondents reported having to re-advertise vacancies or hire recruitment agencies after initial recruitment campaigns failed. This, they said, included recruitment agencies that search for and recruit talent from overseas, including outside of the EEA.

5.52 In addition, we were told that over one-third of companies who responded to Oil & Gas UK's survey reported that they have increased the already generous remuneration and benefit packages offered after initial advertising failed. Oil & Gas UK said those who did not increase remuneration reported other initiatives, such as employee referral schemes, where current employees are paid a bonus for each successful candidate referred. Over 50 per cent of companies reported that outstanding vacancies have created a situation where current employees had to work overtime to compensate for the shortages in these key occupations.

5.53 Turning to sensible, we were told that the oil and gas industry is one which requires very specialist skills, which are not easily transferable from other sectors. We also saw evidence of the industry investing in training and up-skilling its potential workforce. For example, we were told that the industry had collectively invested approximately £6 million to set up the Oil & Gas Academy.

5.54 In terms of the broader market situation, Oil & Gas UK told us that due to the continued demand for energy in the UK, activity levels will continue to remain high within the oil and gas industry, as will the demand for specialist skilled labour. They said if efforts are not made to ensure that organisations are able to access migrant labour to fill these shortage occupations, costs will continue to rise, and productivity levels may be adversely affected. Oil & Gas UK said the UK is one of the most expensive oil and gas provinces in the world, and any further pressures on the supply of skilled workers risks reducing its attractiveness to larger multinationals and ultimately affecting the long-term sustainability of the industry.

"It is vital therefore that the UK encourages continued investment by promoting an environment in which industry can access the skilled labour it needs from the EEA, and beyond if necessary, and consequently help in delivering the conditions for business success within the UK."

Oil & Gas UK response to MAC call for evidence

5.55 Overall, we believe that we have received sufficient evidence to justify including electrical engineers in the oil and gas industry on our recommended shortage occupation list. Electrical engineers employed in the electricity transmission and distribution industry are discussed later in this chapter.

5.6 Engineering technicians

Box 5.4: Engineering technicians

Occupation(s) and SOC code(s): Engineering technicians – 3113

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Commissioning engineer.

Top-down data

3113 Engineering technicians

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£13.90		
Percentage of employees with NVQ3+	60.6						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	2.5	4.5	4.5	V2 Annual percentage change in employment estimates	10.5	6.1	1.7
P2 Annual percentage change of mean hourly pay for all employees	2.9	6.9	6.9	V3 Annual percentage change of median total paid hours	3.9	-0.2	-0.2
P3 Return to occupation, given NQF3, with age and region controls	0.94	0.91	1.11	V4 Absolute change in proportion working for employer under 1 year	0.02	0.00	-0.01
I1 Absolute change in median vacancy duration	0.5	26.5	-0.3	E1 SSVs as a percentage of all vacancies	36	36	*
I2 Live unfilled vacancies/unemployment by sought occupation	1.29	1.41	0.78	E2 SSVs as a percentage of hard-to-fill vacancies	100	100	*
V1 Annual percentage change in unemployment by sought occupation	-13.5	50.8	185.6	E3 SSVs as a percentage of total employment	0.37	0.37	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	6	4	3	Percentage of workforce trained in past 13 weeks	36	37	34

Stakeholder evidence:

We received evidence from Marshall Aerospace, Aeropeople, EU Skills, Lantra and CLAAS UK.

5.56 We first reviewed SOC 3113, engineering technicians, in our autumn 2008 report. At that time we included aircraft component manufacturing engineers on our recommended shortage list as a subset of this occupation. We confirmed that engineering technicians are skilled.

5.57 Our analysis of the top-down data indicates that this occupation passes 3 out of 9 shortage indicators, which is slightly above average but not strong evidence of shortage. The top-down data indicate that pay is increasing in this occupation, with one pay measure indicating shortage. Vacancy durations are decreasing, although there remains a high ratio of JCP vacancies to JSA claimants, suggesting that only a limited pool of people is available to fill the vacant posts. In addition, employment in this occupation has increased, but only slightly, while there has been a considerable increase in the number of JSA claimants. There is not evidence that, overall, this occupation is in shortage. However, we received evidence on specific job titles.

5.58 In terms of shortage, Marshall Aerospace stated that the job of aircraft component manufacturing engineer is still in shortage. However, they did not provide us with sufficient evidence in support of this. In addition, Aim Aviation (Hensall) Ltd, which made a previous request for this job title to be on the list, as discussed in Migration Advisory Committee (2008a), told us that it no longer has a shortage of aircraft component manufacturing engineers. We therefore conclude that there is no longer evidence of a current shortage of aircraft component manufacturing engineers.

5.59 EU Skills argued that the job title commissioning engineer is in shortage. They told us that this is in part due to the fact that some employees within the

electricity transmission and distribution industry with the necessary skills are approaching retirement.

5.60 We received evidence that, as new connection and refurbishment and renewal activities within the electricity transmission and distribution industry are completed, it is the role of the commissioning engineer to sign off the work. EU Skills said a 2009 survey conducted by them showed 181 employees in this job title and 7 vacancies. EU Skills told us that these data probably represent around half the UK workforce in this job. Although vacancy numbers are therefore not particularly high, EU Skills told us that any shortages in this job title will lead to delays in grid connections, which Ofgem are trying to reduce in order to meet the EU 2020 renewables targets. Retirements also have the potential to increase the number of vacancies.

“... the impact of an ageing workforce (i.e. high levels of retirement) is about to hit the industry at the same time as increasing levels of investment are required in order to expand and refurbish the ageing network infrastructure so that it can handle the increased need for new connections of renewable energy and distributed generation sites.”

EU Skills response to MAC call for evidence

5.61 We received evidence from CLAAS UK that a key factor in the shortage of landbased service engineering is the seasonal nature of work in the industry. We were told that demand for engineering support is directly linked with the agricultural sector.

“We feel the seasonal nature of demand from the agricultural sector has a key bearing on the shortage of landbased service engineers. The industry has a problem in attracting and retaining staff, partly due to the long hours of working in peak season.”

Lantra response to MAC call for evidence

- 5.62 CLAAS UK told us that the sector was finding it difficult to find candidates with the required product knowledge and understanding of the sector. We were also told that it is not possible for the sector to fill vacancies from within the wider EU labour market, because the EU’s peak periods run parallel to the UK’s.
- 5.63 We also received evidence that there is a significant risk that the overall situation will be compounded further if the opt-out clause is removed from the EU Working Time Directive as proposed in 2008. We were told that the opt-out clause currently allows the sector to utilise extensive overtime hours to cover its peak labour commitments. CLAAS UK said the removal of the opt-out clause would restrict the maximum working week to 48 hours and, if this is adopted, would mean that the sector would have no chance to maintain appropriate levels of service and support for the industry as many technicians will be working well in excess of 60 hours a week.
- 5.64 Turning to sensible, we received evidence from CLAAS UK that the economic downturn has created a pool of available technicians, flowing from the construction industry, with transferable skills which could be employed by landbased businesses. However, we were told that while the majority of these candidates may have ‘parallel’ skills, they would need to be given training in the workings of the landbased sector. CLAAS UK said
- this would not be a cost-effective way forward, as any such recruitment would be transient and those employed would migrate back to the construction industry as soon as the economy shows signs of recovery. Nonetheless we do not wish to take action that would lead to UK workers being displaced.
- 5.65 CLAAS UK presented evidence of collaborative projects to attract and develop skilled staff from within the UK. For example, we saw evidence of a project to establish marketing and recruitment material. We were also told of a drive to update the technical credibility of the National Occupational Standards and to revitalise Apprenticeship schemes.
- 5.66 EU Skills presented us with evidence of pay increases that were higher than current rates of inflation. We saw that typically some occupations in the electricity transmission and distribution industry received a pay increase of approximately 5 per cent. We also saw evidence that the electricity transmission and distribution industry is making efforts to train and up-skill its potential workforce.
- 5.67 In conclusion, we believe that we received sufficient evidence to justify including the job title commissioning engineer on our recommended shortage occupations list.
- 5.68 However, we do not include the job title landbased service engineer because there is a pool of available technicians, with transferable skills, that could be employed by the sector. Therefore, we believe that the use of migrant workers would displace workers from this pool. If evidence becomes available that the pool of workers was becoming insufficient, perhaps due to engineers returning to the construction industry as that sector picks up, we would be willing to consider looking at landbased service engineers again in the future.

5.69 Finally, due to insufficient evidence of a current shortage of aircraft component manufacturing engineers, we recommend that this job title be removed from the list.

5.7 Chemical engineers

Box 5.5: Chemical engineers

Occupation(s) and SOC code(s): Chemical engineers – 2125

All job titles within this occupation are included on our recommended shortage occupation list.

Top-down data

2125 Chemical engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£*		
Percentage of employees with NVQ3+	87.9						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	*	*	*	V2 Annual percentage change in employment estimates	49.4	9.1	-17.5
P2 Annual percentage change of mean hourly pay for all employees	22.4	-5.2	-5.2	V3 Annual percentage change of median total paid hours	1.9	-2.1	-2.1
P3 Return to occupation, given NQF3, with age and region controls	*	0.41	1.33	V4 Absolute change in proportion working for employer under 1 year	-0.09	0.05	0.04
I1 Absolute change in median vacancy duration	*	*	-7.8	E1 SSVs as a percentage of all vacancies	6	6	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.20	0.45	0.25	E2 SSVs as a percentage of hard-to-fill vacancies	45	45	*
V1 Annual percentage change in unemployment by sought occupation	-5.3	30.7	97.5	E3 SSVs as a percentage of total employment	0.08	0.08	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	13	11	9	Percentage of workforce trained in past 13 weeks	26	22	17

Stakeholder evidence:

We received evidence from IChemE.

- 5.70 We first considered this occupation in our autumn 2008 report and confirmed then that chemical engineers are skilled.
- 5.71 This occupation only passed 1 out of 8 shortage indicators, a low number indicating no shortage. Our analysis of the top-down data indicates that employment in the occupation has fallen since September 2008, as have vacancy durations. The only indicator that suggests shortage is an increase in the proportion of new hires.
- 5.72 However, the LFS estimates that the number employed in this occupation is small at 9,000. Some of the top-down data may therefore be less reliable for occupations of this size. We also note that many individuals with chemical engineering qualifications and skills are employed under other job titles, which the top-down data may not capture. We have therefore placed greater weight on the bottom-up evidence we received from stakeholders.
- 5.73 For our previous reports we received evidence of shortages in this occupation that could not be alleviated in the short term without the use of non-EEA labour. For example, we were told that it was difficult for the industry to secure and retain an adequate supply of chemical engineers because too few were being trained in the UK to supply the needs of the industry. IChemE's submission for this report acknowledges that the recession has eased some short-term pressures as projects have been delayed. However, anecdotal evidence received from IChemE suggests that the industry may already be experiencing an upturn in recruitment and that therefore shortages will reappear.

"Very recently our monitoring of recruitment advertising spend is suggesting that we have passed the bottom of the 'trough' and are experiencing the beginnings of an upturn."

IChemE response to MAC call for evidence

- 5.74 We were told that a substantial backlog of engineering and construction projects still exists and therefore the need for chemical engineers is still present in the medium term.
- 5.75 With regard to sensible, the top-down data indicate that this occupation is not especially heavily dependent on immigrant labour. It was argued that the specialised work of the sector and the highly mobile nature of the industry mean that failure to recruit the right people would result in businesses relocating certain types of work overseas where such skilled professionals could be recruited. This, we were told, would have adverse effects on the UK economy.
- 5.76 We were also told that the industry and relevant Sector Skills Council were making efforts to up-skill the current UK workforce. This includes a Corporate Partner Scheme to recognise those companies that follow best practice in engineering staff development, and the creation of the National Skills Academy for the process industries. However, the top-down data suggest that the frequency of training activity may have fallen.
- 5.77 In conclusion, we do not place much emphasis on the top-down evidence. The bottom-up evidence is limited at present but there seems to be reason to believe that the level of shortage may increase relatively soon, possibly prior to our next review of this occupation. We note from the PBS data that some use has been made of the shortage occupation route to

bring in chemical engineers, even though this is clearly not the only route available. When we consider this occupation again in autumn 2010, we will want to see more robust and substantive evidence of any asserted shortage.

5.8 Job titles in the electricity transmission and distribution and the electricity generation industries

5.78 EU Skills presented us with evidence on specific job titles in the electricity transmission and distribution and the electricity generation industries. In our autumn 2008 report we included the job title electricity transmission overhead linesworker, which falls within SOC 5243, lines repairers and cable jointers, on our recommended shortage list. At that time we confirmed that electricity transmission overhead linesworker are skilled.

5.79 In this review the job titles we are told are in shortage fall within a wide range of SOC codes which, in our top-down analysis, are skilled. We therefore regard the jobs as skilled.

5.80 We begin by discussing the top-down evidence for each 4-digit occupation for all the relevant SOC codes and continue by discussing the evidence relating to shortage and sensible for the electricity transmission and distribution and the electricity generation sectors as a whole. Finally, we present the information we received about the specific job titles within this sector to corroborate what we were told about these sectors as a whole.

Production, works and maintenance managers

Box 5.5: Production, works and maintenance managers

Occupation(s) and SOC code(s): Production, works and maintenance managers – 1121

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Project manager.

Top-down data

1121 Production, works and maintenance managers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£18.63		
Percentage of employees with NVQ3+	62.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	4.8	1.4	1.4	V2 Annual percentage change in employment estimates	5.4	-3.5	-3.7
P2 Annual percentage change of mean hourly pay for all employees	5.7	2.1	2.1	V3 Annual percentage change of median total paid hours	0.6	0.2	0.2
P3 Return to occupation, given NQF3, with age and region controls	1.28	1.17	1.29	V4 Absolute change in proportion working for employer under 1 year	-0.02	0.00	0.01
I1 Absolute change in median vacancy duration	2.3	2.1	-1.5	E1 SSVs as a percentage of all vacancies	19	19	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.27	0.29	0.14	E2 SSVs as a percentage of hard-to-fill vacancies	65	65	*
V1 Annual percentage change in unemployment by sought occupation	-17.3	65.9	182.2	E3 SSVs as a percentage of total employment	0.13	0.13	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	5	6	9	Percentage of workforce trained in past 13 weeks	21	19	19

5.81 Production, works and maintenance managers only passed on 1 out of 9 shortage indicators, a very low number indicating no overall shortage in this occupation. The number of JSA claimants seeking work in the occupation has increased, albeit not as much as some

other occupations, while the number employed has fallen. Average vacancy durations and the ratio of vacancies to unemployed have both fallen since our last report, providing reduced indication of shortage.

Managers in mining and energy

Box 5.7: Managers in mining and energy

Occupation(s) and SOC code(s): Managers in mining and energy – 1123

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Site manager, station manager, shift/group leader.

Top-down data

1123 Managers in mining and energy

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£21.37		
Percentage of employees with NVQ3+	71.7						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-4.4	22.0	22.0	V2 Annual percentage change in employment estimates	31.7	14.8	9.1
P2 Annual percentage change of mean hourly pay for all employees	-2.1	22.5	22.5	V3 Annual percentage change of median total paid hours	0.2	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.04	1.64	1.76	V4 Absolute change in proportion working for employer under 1 year	0.03	-0.08	-0.06
I1 Absolute change in median vacancy duration	5.8	-34.2	-15.4	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.20	0.21	0.13	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-13.4	75.0	133.3	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	8	7	7	Percentage of workforce trained in past 13 weeks	29	35	32

5.82 Managers in mining and energy passed on 3 out of the 9 shortage indicators, an above average number but one that does not strongly suggest shortage. However, pay has increased substantially by both

measures and the return to occupation is also sufficiently high to indicate shortage. Other indicators do not indicate shortage: vacancy durations are falling and the ratio of vacancies to unemployment has fallen.

Mechanical engineer**Box 5.8: Mechanical engineer****Occupation(s) and SOC code(s):** Mechanical engineers – 2122**Only the following job title within this occupation is included on our recommended shortage occupation list:**

Mechanical engineer in the electricity transmission and distribution and the electricity generation industries.

Top-down data**2122 Mechanical engineers**

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£17.66		
Percentage of employees with NVQ3+	77.7						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	2.2	6.0	6.0	V2 Annual percentage change in employment estimates	11.6	1.7	1.1
P2 Annual percentage change of mean hourly pay for all employees	4.9	1.0	1.0	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.07	0.96	1.02	V4 Absolute change in proportion working for employer under 1 year	-0.01	-0.01	0.00
I1 Absolute change in median vacancy duration	0.6	-9.1	-5.0	E1 SSVs as a percentage of all vacancies	32	32	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.74	0.77	0.39	E2 SSVs as a percentage of hard-to-fill vacancies	92	92	*
V1 Annual percentage change in unemployment by sought occupation	-21.7	44.1	195.5	E3 SSVs as a percentage of total employment	0.41	0.41	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	5	5	6	Percentage of workforce trained in past 13 weeks	28	34	28

5.83 This occupation passed 3 out of 9 indicators, which does not strongly suggest overall shortage. Pay indicators are inconsistent, and the return to occupation is low. Vacancy durations are decreasing, although there remains a high ratio of JCP vacancies to JSA claimants.

Like other occupations, the number of JSA claimants has increased considerably.

Electrical engineers

5.84 Electrical engineers passed on 4 out of 9 shortage indicators. The top-down data for this occupation were discussed in section 5.5.

Design and development engineers

Box 5.9: Design and development engineers

Occupation(s) and SOC code(s): Design and development engineers – 2126

Only the following job title within this occupation is included on our recommended shortage occupation list:

Design engineer.

Top-down data

2126 Design and development engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£17.58		
Percentage of employees with NVQ3+	86.1						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	6.1	2.0	2.0	V2 Annual percentage change in employment estimates	0.3	-13.8	-19.6
P2 Annual percentage change of mean hourly pay for all employees	5.0	2.5	2.5	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.07	1.22	1.36	V4 Absolute change in proportion working for employer under 1 year	0.00	-0.04	-0.01
I1 Absolute change in median vacancy duration	-0.2	-4.2	-8.5	E1 SSVs as a percentage of all vacancies	38	38	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.56	0.88	0.50	E2 SSVs as a percentage of hard-to-fill vacancies	69	69	*
V1 Annual percentage change in unemployment by sought occupation	-30.9	35.7	217.3	E3 SSVs as a percentage of total employment	0.75	0.75	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	9	7	8	Percentage of workforce trained in past 13 weeks	30	30	26

5.85 Design and development engineers passed on 2 out of 9 shortage indicators, an average number suggesting no overall shortage. Vacancy durations are falling, although there remains a high ratio of JCP vacancies to JSA claimants. Employment

in the occupation has fallen, and claimant count has increased. Although the vacancy-to-unemployment ratio indicates shortage relative to other occupations, it is actually slightly lower than in September 2008 and April 2009.

Production and process engineers

Box 5.10: Production and process engineers

Occupation(s) and SOC code(s): Production and process engineers – 2127

Only the following job title within this occupation is included on our recommended shortage occupation list:

Plant process engineer.

Top-down data

2127 Production and process engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£15.56		
Percentage of employees with NVQ3+	69.5						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-5.7	1.1	1.1	V2 Annual percentage change in employment estimates	-4.3	5.9	7.2
P2 Annual percentage change of mean hourly pay for all employees	-2.6	3.9	3.9	V3 Annual percentage change of median total paid hours	0.3	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.13	1.00	1.16	V4 Absolute change in proportion working for employer under 1 year	0.03	0.03	0.05
I1 Absolute change in median vacancy duration	-1.0	-3.3	-9.6	E1 SSVs as a percentage of all vacancies	19	19	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.83	0.93	0.43	E2 SSVs as a percentage of hard-to-fill vacancies	92	92	*
V1 Annual percentage change in unemployment by sought occupation	-25.0	42.0	194.9	E3 SSVs as a percentage of total employment	0.14	0.14	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	6	4	5	Percentage of workforce trained in past 13 weeks	29	26	23

5.86 This occupation passes on 2 out of 9 indicators which is only an average number, therefore not suggesting shortage for the occupation as a whole. Vacancy durations are decreasing, although there remains a high ratio of JCP vacancies to

JSA claimants. Like other occupations, the number of JSA claimants has increased considerably. Increases in pay and the number employed in the occupation are not sufficient to indicate a shortage.

Planning and quality control engineers

Box 5.11: Planning and quality control engineers

Occupation(s) and SOC code(s): Planning and quality control engineers – 2128

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Planning/development engineer, quality, health, safety and environment engineer.

Top-down data

2128 Planning and quality control engineers

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£14.44		
Percentage of employees with NVQ3+	69.1						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-0.6	6.3	6.3	V2 Annual percentage change in employment estimates	1.9	3.6	-1.8
P2 Annual percentage change of mean hourly pay for all employees	-1.3	6.7	6.7	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.22	1.11	1.21	V4 Absolute change in proportion working for employer under 1 year	0.01	0.01	0.01
I1 Absolute change in median vacancy duration	3.5	1.9	-1.5	E1 SSVs as a percentage of all vacancies	27	27	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.75	0.73	0.37	E2 SSVs as a percentage of hard-to-fill vacancies	98	98	*
V1 Annual percentage change in unemployment by sought occupation	-22.3	47.7	260.8	E3 SSVs as a percentage of total employment	0.28	0.28	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	5	4	6	Percentage of workforce trained in past 13 weeks	24	24	23

5.87 Planning and quality control engineers passed on 4 out of 9 shortage indicators, a proportion below, but close to our 50 per cent benchmark for strong top-down evidence of shortage. Pay has increased

by both measures but vacancy durations have fallen. There remains a high ratio of JCP vacancies to JSA claimants, although the ratio has fallen from the time of our previous reports.

Engineering professional not elsewhere classified (n.e.c.)**Box 5.12: Engineering professionals n.e.c.****Occupation(s) and SOC code(s):** Engineering professionals n.e.c. – 2129**Only the following job titles within this occupation are included on our recommended shortage occupation list:**

Project engineer, proposals engineer.

Top-down data**2129 Engineering professionals n.e.c.**

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£16.43		
Percentage of employees with NVQ3+	73.4						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	1.9	5.4	5.4	V2 Annual percentage change in employment estimates	4.0	6.9	-1.3
P2 Annual percentage change of mean hourly pay for all employees	5.6	4.5	4.5	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.19	1.08	1.25	V4 Absolute change in proportion working for employer under 1 year	0.02	-0.02	-0.03
I1 Absolute change in median vacancy duration	-6.5	-3.6	-5.3	E1 SSVs as a percentage of all vacancies	24	24	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.68	0.58	0.36	E2 SSVs as a percentage of hard-to-fill vacancies	82	82	*
V1 Annual percentage change in unemployment by sought occupation	-20.6	34.0	175.0	E3 SSVs as a percentage of total employment	0.42	0.42	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	7	7	6	Percentage of workforce trained in past 13 weeks	28	33	31

5.88 This occupation passed on 1 out of 9 shortage indicators, suggesting that there is no shortage for the occupation as a whole, but this occupation contains a diverse range of job titles. Median pay has increased at a relatively rapid rate but no other indicators show signs of shortage.

Science and engineering technicians n.e.c.

Box 5.13: Science and engineering technicians n.e.c.

Occupation(s) and SOC code(s): Science and engineering technicians n.e.c. – 3119

Only the following job title within this occupation is included on our recommended shortage occupation list:

Production controller.

Top-down data

3119 Science and engineering technicians n.e.c.

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£11.39		
Percentage of employees with NVQ3+	59.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 0 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	9.8	1.0	1.0	V2 Annual percentage change in employment estimates	5.8	-5.3	-4.3
P2 Annual percentage change of mean hourly pay for all employees	8.6	3.8	3.8	V3 Annual percentage change of median total paid hours	-0.6	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.92	0.79	0.98	V4 Absolute change in proportion working for employer under 1 year	0.06	-0.03	-0.03
I1 Absolute change in median vacancy duration	-1.7	2.6	-7.6	E1 SSVs as a percentage of all vacancies	33	33	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.45	0.37	0.21	E2 SSVs as a percentage of hard-to-fill vacancies	80	80	*
V1 Annual percentage change in unemployment by sought occupation	-11.4	33.8	137.8	E3 SSVs as a percentage of total employment	1.49	1.49	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	8	8	6	Percentage of workforce trained in past 13 weeks	31	27	29

5.89 This occupation did not pass on any of the indicators of shortage, a clear indication of no overall shortage, but this is another occupation which contains a diverse range of job titles, meaning the top-down evidence is of little value.

Lines repairers and cable jointers

Box 5.14: Lines repairers and cable jointers

Occupation(s) and SOC code(s): Lines repairers and cable jointers – 5243

Only the following job title within this occupation is included on our recommended shortage occupation list:

Overhead linesworker.

Top-down data

5243 Lines repairers and cable jointers

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£13.59		
Percentage of employees with NVQ3+	21.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-1.7	5.0	5.0	V2 Annual percentage change in employment estimates	36.5	-9.5	-15.2
P2 Annual percentage change of mean hourly pay for all employees	-0.7	15.7	15.7	V3 Annual percentage change of median total paid hours	2.5	-3.2	-3.2
P3 Return to occupation, given NQF3, with age and region controls	1.25	0.80	1.21	V4 Absolute change in proportion working for employer under 1 year	-0.09	-0.01	0.05
I1 Absolute change in median vacancy duration	-12.7	9.6	*	E1 SSVs as a percentage of all vacancies	18	18	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.55	0.41	0.13	E2 SSVs as a percentage of hard-to-fill vacancies	41	41	*
V1 Annual percentage change in unemployment by sought occupation	-17.6	66.0	153.9	E3 SSVs as a percentage of total employment	0.04	0.04	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	1	3	5	Percentage of workforce trained in past 13 weeks	28	33	38

5.90 Lines repairers and cable jointers passed on 3 out of 8 shortage indicators, an above average proportion but not a strong indicator of overall shortage. Pay is increasing by both measures, and the proportion of new hires is also rising.

However, the ratio of JCP vacancies to JSA claimants remains low. Employment in the occupation has fallen, while there have been considerable increases in the number of JSA claimants.

Electrical/electronics engineers n.e.c.

Box 5.15: Electrical/electronics engineers n.e.c.

Occupation(s) and SOC code(s): Electrical/electronics engineers n.e.c. – 5249

Only the following job title within this occupation is included on our recommended shortage occupation list:

Site supervisor.

Top-down data

5249 Electrical/electronics engineers n.e.c.

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£11.39		
Percentage of employees with NVQ3+	46.2						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 2 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	2.1	3.8	3.8	V2 Annual percentage change in employment estimates	-11.3	-7.0	-4.1
P2 Annual percentage change of mean hourly pay for all employees	0.6	6.2	6.2	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.94	0.91	1.02	V4 Absolute change in proportion working for employer under 1 year	0.03	0.00	-0.04
I1 Absolute change in median vacancy duration	-5.8	-3.5	-1.6	E1 SSVs as a percentage of all vacancies	66	66	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.88	0.83	1.45	E2 SSVs as a percentage of hard-to-fill vacancies	94	94	*
V1 Annual percentage change in unemployment by sought occupation	-16.4	35.8	123.1	E3 SSVs as a percentage of total employment	0.81	0.81	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	5	6	7	Percentage of workforce trained in past 13 weeks	31	29	29

5.91 Electrical/electronics engineers only passed on 2 out of 9 available shortage indicators, only an average number, suggesting no shortage. Pay is increasing, and the mean has increased sufficiently to indicate shortage. The ratio of

vacancies to unemployment has fallen, but is still sufficient to indicate shortage. Employment in the occupation has fallen, while the number of JSA claimants seeking work in the occupation has risen.

Summary of top-down data

5.92 Overall, there is little top-down evidence of shortages in the SOC 4-digit occupations as a whole, with the possible exceptions of SOC 2123, electrical engineers and 2128, planning and quality control engineers. The bottom-up evidence relates to job titles which represent very small subsets of these occupations. Therefore we place greater weight on the bottom-up evidence. The top-down data on sensible do not generally indicate potential over-dependence on immigrant labour.

Bottom-up evidence

5.93 EU Skills told us that in order to collate evidence of shortages affecting the UK's electricity transmission and distribution and the electricity generation industries, they held interviews with industry representatives, including Balfour Beatty Utility Solutions, National Grid, E.ON (Central Networks) and ScottishPower.

5.94 The main factors causing shortages in both industries are, on the supply side:

- An ageing workforce in the industry and across the UK's engineering workforce in general. For example, approximately 45 per cent of the current distribution workforce is expected to retire within the next 15 years. We received evidence that in the generation industry during the next five years, of the 5,200 NQF level 3+ workers, 810 are expected to retire and approximately 650 to be promoted internally, leaving vacancies that will be difficult to fill.
- Insufficient supply of science, technology, engineering and mathematics (STEM) related skills into the labour market from schools, colleges and universities. We saw evidence that the current level of graduate and trainee intake is insufficient to meet expected demand.

- Poor sector image among potential new entrants. EU Skills argued that this is exacerbated by economic regulation that limits the profit levels of businesses, thereby limiting the extent to which the industry can compete with other sectors of the economy in terms of the wages they can offer.

5.95 On the demand side, increased investment is needed in the electricity network infrastructure to accommodate new generating capacity. We were told that the current network system is incapable of delivering the low carbon power that will need to be generated if the UK Government is to meet its 2020 target of 15 per cent of the UK's energy being generated from renewable sources. EU Skills said that ensuring new renewable energy sites can gain access to the grid will be crucial. They told us that the transmission industry must therefore strengthen the current transmission system and that the Energy Networks Strategy Group has identified the availability of suitably skilled people as a major risk.

5.96 EU Skills also said the distribution industry is planning to increase their expenditure on their main activities by approximately £1 billion, from £7.5 billion in the last regulatory period, and this will also lead to significant demand for skilled workers.

5.97 Table 5.1 shows the job titles EU Skills told us were in shortage, together with estimates of the number of posts and vacancies for each. The bottom-up evidence suggests a labour shortage in both the electricity transmission and distribution and the electricity generation industries as a whole. The table shows that the number of vacancies in comparison to the number of posts in most of the job titles is very high. In the table it is clear that the job titles fall within a niche area and therefore it is appropriate to consider them together.

Table 5.1: Job titles argued to be in shortage in the electricity transmission and distribution and the electricity generation industries

SOC title and code	Number employed in SOC	Top-down shortage indicators passed	Job title(s)	Estimated number of posts ⁽¹⁾	EU Skills vacancy rate ⁽²⁾ (per cent)
Production, works and maintenance managers, SOC 1121	379,000	1/9	Project manager	160	46
Managers in mining and energy, SOC 1123	17,000	3/9	Site manager	110	21
			Station manager	70	08
			Shift/group leader	60	07
Mechanical engineer, SOC 2122	82,000	3/9	Mechanical engineer	400	08
Electrical engineers, SOC 2123	52,000	4/9	Power system engineer	300	29
			Control engineer	150	07
			Protection engineer	120	13
			Electrical engineer	100	07
			Project control engineer	170	08
			Control and instrumentation engineer	170	09
			Assistant engineer	90	12
Design and development engineers, SOC 2126	55,000	2/9	Design engineer	170	11

Table 5.1: Job titles argued to be in shortage in the electricity transmission and distribution and the electricity generation industries (*continued*)

SOC title and code	Number employed in SOC	Top-down shortage indicators passed	Job title(s)	Estimated number of posts ⁽¹⁾	EU Skills vacancy rate ⁽²⁾ (per cent)
Production and process engineers, SOC 2127	35,000	2/9	Plant process engineer	130	07
Planning and quality control engineers, SOC 2128	32,000	4/9	Planning/development engineer	70	14
			Quality, health, safety and environment engineer (QHSE)	40	18
Engineering professional n.e.c., SOC 2129	86,000	1/9	Project engineer	570	20
			Proposals engineer	60	13
Science and engineering technicians n.e.c., SOC 3119	42,000	0/9	Production controller	200	09
Lines repairers and cable jointers, SOC 5243	13,000	3/8	Overhead linesworker	660	25
Electrical/electronics engineers, SOC 5249	86,000	2/9	Site supervisor	280	14

Note: (1) Workforce estimates are approximate and rounded to nearest 10. They are double the numbers reported in the EU Skills survey, which we were told covered approximately half the workforce in the sector. (2) The vacancy rate is calculated from the number of vacancies reported in the EU Skills survey of seven major firms, as a percentage of the total number of posts (i.e. filled posts and vacant posts).

Source: MAC Analysis; Energy & Utility Skills submission to MAC

5.98 Turning to sensible, we received evidence that both the electricity transmission and distribution and the electricity generation industries are investing time, effort and resources into increasing their workforce. We were told that the part-employer/part-Government funded National Skills Academy for power is working towards ensuring that available training provision will meet employers' demands. In addition, the Power Sector Skills Strategy Group is developing a sector attractiveness strategy.

5.99 EU Skills said all employers in the electricity generation industry undertake organisation/brand awareness-raising activities with the aim of attracting newly qualified graduates and new recruits to their Apprenticeship programmes. Employers have established relationships with schools, offering industry awareness days and organising power-related activities for the students. EU Skills also said that the vast majority of employers in the electricity generation industry have links with the Armed Forces because taking skilled engineers from this source is recognised as a successful recruitment option.

5.100 In terms of training, we were told that the lead-time to competency for those job titles identified as being in shortage is typically three years.

5.101 EU Skills also told us that Europe cannot offer a sufficient pool of ready trained workers because of its own investment needs in electricity transmission and distribution and power generation. We also received evidence that the electricity transmission and distribution industry has been more successful in recruiting from countries such as the USA, Australia and New Zealand, which have adopted UK standards in their infrastructure.

5.102 We saw evidence of rising salaries. For example, we were told that typically some employees have received a pay increase of approximately 5 per cent. EU Skills also told us that bonus payments and other incentives are also being offered.

"While accepting that placing these occupations on the shortage occupation list will not in itself solve any skills shortages, it will undoubtedly aid employers in meeting their short-term labour demands. The industry genuinely feels that the recruitment of skilled workers from the global labour market is essential if it is to deliver its short-term objectives, but acknowledges that this policy must dovetail with its strategy to return the UK to self-sufficiency."

EU response to MAC call for evidence

Recommendation

5.103 We were impressed by the quality of the evidence we received from EU Skills and by their consistent co-operation with us throughout the process. We believe that there are shortages in certain jobs relating to the electricity transmission and distribution industry and that, for the time being, it would be sensible to fill these shortages using non-EEA labour. We therefore recommend that the following job titles in the UK's electricity transmission and distribution industry be included on the shortage occupation list: project manager, site manager, site supervisor, power system engineer, control engineer, protection engineer, design engineer, planning/development engineer, quality, health, safety and environment engineer, project engineer, proposals engineer, and overhead linesworker.

5.104 We also recommend the following job titles in the UK's electricity generation industry for inclusion on the shortage occupation list: station manager, shift/group leader, project civil engineer,

mechanical engineer, electrical engineer, project control engineer, control instrumentation and engineer, assistant engineer, plant process engineer and production controller.

5.9 Welding trades

Box 5.16: Welding trades

Occupation(s) and SOC code(s): Welding trades – 5215

Only the following job title within this occupation is included on our recommended shortage occupation list:

High integrity pipe welder with at least three years' experience.

Top-down data

5215 Welding trades

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£10.21		
Percentage of employees with NVQ3+	28.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 0 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	8.9	4.1	4.1	V2 Annual percentage change in employment estimates	11.0	-5.4	-6.3
P2 Annual percentage change of mean hourly pay for all employees	9.7	1.9	1.9	V3 Annual percentage change of median total paid hours	2.4	-1.7	-1.7
P3 Return to occupation, given NQF3, with age and region controls	0.86	0.81	0.91	V4 Absolute change in proportion working for employer under 1 year	0.05	-0.03	-0.06
I1 Absolute change in median vacancy duration	0.5	-3.3	-5.3	E1 SSVs as a percentage of all vacancies	44	44	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.80	0.70	0.32	E2 SSVs as a percentage of hard-to-fill vacancies	82	82	*
V1 Annual percentage change in unemployment by sought occupation	-14.4	68.4	197.8	E3 SSVs as a percentage of total employment	0.92	0.92	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	3	2	2	Percentage of workforce trained in past 13 weeks	15	20	20

Stakeholder evidence:

We received evidence from the Engineering Construction Industry Training Board (ECITB) and a leading employer of welders.

- 5.105 We first considered this occupation in our autumn 2008 report and confirmed then that high integrity pipe (HIP) welders are skilled.
- 5.106 HIP welders are a specialised sub-group of the SOC code 5215, welding trades. Our analysis of the top-down data on skill concluded that welding is a skilled occupation.
- 5.107 This 4-digit occupation did not pass on any of any indicators of shortage, suggesting that there is no overall shortage. The top-down data indicated that although pay is still increasing it is insufficient to indicate a shortage. Vacancy durations are decreasing and employment in the occupation has also fallen. However, HIP welders are a very small subset of the occupation so we believe that the top-down indicators are of limited relevance to this specific job title and we therefore place greater weight on the bottom-up evidence.
- 5.108 We received evidence from ECITB that the numbers of HIP welders being trained have increased yearly, and there are plans to increase intake further but, nevertheless, it is not expected that demand will be met for at least five years. We were told that the sector forecast to 2020 is for significant new work in the power and nuclear sectors, which will require ongoing training of welders to meet skills shortages.
- 5.109 A leading employer of welders told us that the demand for HIP welders is largely seasonal as much of the high demand peaks are during the April–August period to deliver maintenance shutdown projects on power stations and oil refining installations. We received evidence that a leading company’s 2009 peak demand for HIP welders was 285 and in 2010 the peak demand is planned at 375. We were also told that they need to respond rapidly to emergencies and that not having HIP welders on the shortage occupation list could delay the mobilisation of workers significantly.
- 5.110 ECITB presented us with evidence that HIP welders are expected to be involved in the heavy schedule of work planned for the power and energy sector over the coming years, and that this work has already begun and is expected to continue until at least 2020.
- 5.111 We are mindful that there is currently no shortage of HIP welders. But due to the seasonality of the work, there is likely to be a shortage before we come to review the occupation again. We note the importance of this occupation in maintaining crucial UK infrastructure and, as such, we recommend that HIP welders with at least three years’ experience are retained on the shortage occupation list. However, we were unimpressed by the level of detail in the evidence presented to us and we will expect to see more robust evidence of shortage the next time we review the job title high integrity pipe welder, or we will recommend its removal from the shortage occupation list.

5.10 Metal working production and maintenance fitters

Box 5.17: Metal working production and maintenance fitters

Occupation(s) and SOC code(s): Metal working production and maintenance fitters – 5223

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Licensed and military certifying engineer/inspector technician and airframe fitter.

Top-down data

5223 Metal working production and maintenance fitters

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	£11.88		
Percentage of employees with NVQ3+	43.3						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	3.3	2.3	2.3	V2 Annual percentage change in employment estimates	-3.2	-5.7	-1.3
P2 Annual percentage change of mean hourly pay for all employees	3.5	1.4	1.4	V3 Annual percentage change of median total paid hours	-1.1	0.6	0.6
P3 Return to occupation, given NQF3, with age and region controls	0.93	0.86	1.05	V4 Absolute change in proportion working for employer under 1 year	-0.01	-0.02	-0.01
I1 Absolute change in median vacancy duration	0.6	1.4	-3.6	E1 SSVs as a percentage of all vacancies	27	27	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.50	0.48	0.24	E2 SSVs as a percentage of hard-to-fill vacancies	81	81	*
V1 Annual percentage change in unemployment by sought occupation	-21.3	41.1	164.7	E3 SSVs as a percentage of total employment	0.71	0.71	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	4	4	3	Percentage of workforce trained in past 13 weeks	27	24	24

Stakeholder evidence:

We received evidence from Marshall Aerospace, Aeropeople and Semta. We also took evidence from various stakeholders at a visit to Marshall Aerospace in June 2009.

5.112 We received evidence from Marshall Aerospace that there are labour shortages in this occupation. We were told that, within this occupation, the job titles in shortage are licensed and military certifying engineer/inspector technician and airframe fitter. Marshall Aerospace said that both job titles are involved in the industry's modification, repair and overhaul (MRO) work.

5.113 This occupation was skilled in our top-down analysis. We were told by Marshall Aerospace that engineers working within the aerospace industry are more highly qualified than across engineering as a whole. They said aircraft maintenance employees need to have an elevated skill set to comply with the numerous regulations for safety, repair, testing and certification. To reach the required skill set they must undertake at least a further two years' practical maintenance experience on operating aircraft to become a licensed/certifying engineer, as well as undertaking further qualifications equivalent to NVQ level 4.

5.114 Our analysis of the top-down data shows that this occupation passed on 1 out of 9 shortage indicators, suggesting no shortage. Only moderate increases in pay are recorded. The number of JSA claimants has increased, while the number employed in the occupation has fallen slightly. The ratio of JCP vacancies to JSA claimants is low and has fallen since our last report, pointing to a large and growing labour supply in comparison to the number of vacancies. Only the proportion of new hires has fallen, but the drop is sufficiently small to show as a shortage in our top-down analysis.

5.115 In relation to licensed and military certifying engineers/inspector technicians, we were told that they should not fall within

this occupation, because they should be considered as an associate professional occupation. Marshall Aerospace argued that they should therefore fall under SOC 3113, engineering technicians. The ONS has confirmed that, in the current SOC, aircraft engineers are correctly allocated – but they are considering where this job title should be allocated in the 2010 version of SOC.

“Licensed aircraft engineers must be allocated to SOC 3113, engineering technicians, rather than SOC 5223, metal working production and maintenance fitters ...”

Semta response to MAC call for evidence

5.116 We note the concerns of both Semta and Marshall Aerospace but, nevertheless, we do not regard the top-down data for SOC 5223 as highly relevant in this case because we believe that airframe fitters and licensed and military certifying engineers/inspector technicians are a very small subset of this occupation and, as such, the top-down indicators are of limited relevance to these specific job titles. We therefore place greater weight on the bottom-up evidence.

5.117 In terms of shortage, we received evidence from Marshall Aerospace that the aerospace industry has an ageing workforce. For example, we were told that the Civil Aviation Authority data suggest there are 1,200 licensed MRO engineers aged 20–30 compared with 3,500 aged 50 or over. Marshall Aerospace said the resulting shortages will be exacerbated as the engineering population matures and many retire, and also with the reduced number of young people entering engineering.

5.118 We were also told that the Royal Air Force (RAF) is no longer the rich mine of

skilled aircraft engineers it used to be. Marshall Aerospace said that in the 1960s the RAF engineering complement stood at 250,000 with a turnover of 20,000, whereas currently the complement is only 40,000. This means that the recruitment of qualified aircraft engineers will become increasingly difficult.

- 5.119 Marshall Aerospace said the aerospace industry standard language is English, which excludes some EEA nationals from jobs where health and safety issues are essential. We were told that the inability to follow verbal and written instructions has been both costly to the industry in terms of unnecessary repairs and delayed deliveries and has raised personal and aircraft safety concerns.
- 5.120 With regard to airframe fitters, we received evidence that the majority are trained through an Advanced Apprenticeship scheme after leaving school. However, as young people are not being attracted to science and maths within the secondary education system, this has reduced the pool of potential available trainees.
- 5.121 The turnover of permanent staff within aircraft modification and maintenance was 11 per cent in 2008 and, as at the end of June 2009, is currently 1 per cent. We were told that during 2008 Marshall Aerospace could only replace 38 out of 53 permanent employees who had left. Marshall Aerospace said that during 2008 some areas were consistently under-resourced by 20 per cent. The shortfall in permanent staff was covered by contract labour. Marshall Aerospace currently employs four skilled aircraft engineers under the work permit system.
- 5.122 Marshall Aerospace told us that during recession contract labour reduces and foreign contract labour tends to be the first to go. They said currently, therefore,

there is less reliance on non-EEA contract labour, with the current EEA contractor workforce standing at 62 and non-EEA at 47, which represents an 80:20 split of permanent staff to contract labour.

- 5.123 Turning to sensible, we received evidence of efforts to up-skill the domestic workforce as well as attracting the younger generation into aircraft engineering. Marshall Aerospace, AeroAcademy and the National Aerospace Academy are engaged in entry-level training. Each year Marshall Aerospace recruits approximately 20 people as apprentices, 15 under adult retraining schemes and 12 students on sandwich courses. They are currently developing career pathways to improve retention rates and to encourage trainees to remain with them throughout their careers.
- 5.124 In conclusion, we believe that there is evidence of a shortage of identified skilled job titles within the aerospace industry which cannot be met solely from within the EEA. Therefore, we recommend that licensed and military certifying engineers/inspector technicians and airframe fitters are included on the shortage occupation list.

5.11 Traffic planners, transport planners and traffic engineers

- 5.125 We said in our autumn 2008 report that we intended to conduct a full review of the job titles traffic planners, transport planners and traffic engineers on examining the findings of the Project Brunel Industry Study.
- 5.126 The Project Brunel Industry Study reported in April 2009 and highlighted concern in relation to a mismatch of supply and demand within the planning sector.

- 5.127 GoSkills, the relevant Sector Skills Council, said that they did not have any specific bottom-up evidence to indicate a shortage of traffic planners, transport planners and traffic engineers.
- 5.128 The Institution of Highways and Transportation (IHT) told us that, although there were still skills shortages in the transportation industry, it had been agreed that the data on which the Project Brunel report were based should be updated in order to highlight the ongoing need in certain areas.
- 5.129 The IHT said the collection of new data is likely to take three to four months, and they have decided to postpone their submission to us. We will consider these occupations if and when the IHT or any relevant stakeholder provides sufficient bottom-up evidence to make this worthwhile.
- 5.131 Westinghouse told us that they have identified roles which are essential for new nuclear build in the UK and also for work to support the continuing operation of existing nuclear reactors. However, they did not provide sufficient evidence for us to consider the job titles they argue are in shortage. For example, we were not told how many vacancies they currently experience.
- 5.132 Rolls-Royce similarly did not provide sufficient evidence on shortage and sensible with regard to job titles in this industry.
- 5.133 In light of the above, we do not include job titles specifically relating to the nuclear industry on our recommended shortage list, but welcome further discussion with the sector about the information we need to consider these job titles for the shortage occupation list.

5.12 Job titles within the nuclear industry

- 5.130 Rolls-Royce and Westinghouse Electric Company UK Ltd said that there are labour shortages in the nuclear industry.

Chapter 6: Other occupations

6.1 Introduction

6.1 This chapter summarises the evidence and our recommendations in relation to other occupations which were included on our autumn 2008 recommended shortage

list and which we did not review in our spring 2009 report, and closely related occupations. We also consider chefs in this review in response to a previous request from the Government to do so.

6.2 Veterinarians

Box 6.1: Veterinarians

Occupation(s) and SOC code(s): Veterinarians – 2216

Only the following job title within this occupation is included on our recommended shortage occupation list:

Veterinary surgeon.

Top-down data

2216 Veterinarians

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£16.86		
Percentage of employees with NVQ3+	91.3						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 7 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	13.2	2.7	2.7	V2 Annual percentage change in employment estimates	-16.7	-15.7	-15.6
P2 Annual percentage change of mean hourly pay for all employees	31.4	-4.6	-4.6	V3 Annual percentage change of median total paid hours	-5.0	3.8	3.8
P3 Return to occupation, given NQF3, with age and region controls	*	*	*	V4 Absolute change in proportion working for employer under 1 year	0.10	0.11	-0.10
I1 Absolute change in median vacancy duration	*	*	*	E1 SSVs as a percentage of all vacancies	34	34	*

Box 6.1: Veterinarians (continued)

I2 Live unfilled vacancies/unemployment by sought occupation	0.17	0.08	0.06	E2 SSVs as a percentage of hard-to-fill vacancies	72	72	*
V1 Annual percentage change in unemployment by sought occupation	-45.8	-11.1	360.0	E3 SSVs as a percentage of total employment	0.66	0.66	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	4	14	19	Percentage of workforce trained in past 13 weeks	60	62	66

Stakeholder evidence:

We received written evidence from the Royal College of Veterinary Surgeons (RCVS), including a revised 2009 quantitative labour market analysis for veterinary surgeons.

- 6.2 We first reviewed this occupation in our autumn 2008 report, recommending that veterinary surgeons be placed on the UK shortage occupation list. That review concluded that veterinarians are skilled.
- 6.3 Veterinary surgeons are on the current shortage occupation list, previously passing 5 out of 10 available shortage indicators in autumn 2008. However, as the occupation now only passes 1 out of 7 shortage indicators, the top-down evidence suggests that any shortage is becoming less severe. Median paid hours in the occupation are increasing sufficiently to suggest shortage. However, the number of Jobseeker's Allowance (JSA) claimants has substantially increased over the year (albeit from a base of just ten claimants in April 2008).
- 6.4 The veterinary profession is 'closed' by virtue of the requirement for registration with the Royal College of Veterinary Surgeons (RCVS) and, consequently, it is possible to track the movements of overseas veterinary surgeons accurately.
- 6.5 The RCVS notes that membership of veterinary surgeons on their register has been increasing. However, this increase has not matched demand, possibly because of reduced working hours due to the European Working Time Directive. The increasing number of women in the profession, leading to an increase in career breaks and maternity leave, is also a factor. Evidence suggests that the trend towards an increasing number of women in the profession may have levelled off during 2008/09. The RCVS estimates that there is a shortfall of 470 veterinary surgeons and, when combined with the number of retirements from the register of around 700 per annum, means the total requirement for new staff is estimated to be 1,170 per annum. At the same time, they estimate that 600 UK graduates will enter the profession in 2009. The number of graduates entering the profession is expected to rise to 800 per annum in 2013 as a result of previous expansion in the number of training places available.

“We know from surveys we have carried out that unemployment among veterinary surgeons is very low ... and there is as a result no pool of qualified professionals in the UK waiting to return to work ...”

RCVS response to MAC call for evidence

- 6.6 We were told that the number of high-quality applicants to veterinary colleges exceeds the number of places available. Therefore we expect demand to be met in the long term by graduates from within the UK. The RCVS has told us that graduate numbers will reach their maximum of 800 per annum in 2013. At the same time they expect a slowing in demand for veterinary surgeons, and estimate that the gap between supply and demand will be closed by 2013.
- 6.7 We appreciate that there is a lag time between training and new graduates. However, we do question whether the net requirement for veterinary surgeons is as large as the sector is predicting, given the small number of workers coming in under the Points Based System. Nevertheless, we were grateful for the RCVS’s constructive engagement with us and would like to work closely with them to ensure that we have a joint understanding of the workforce needs of this occupation. We recommend that veterinary surgeons are retained on the shortage occupation list, but when we consider this occupation again in autumn 2010 we will look again for sufficient evidence of long-term supply and demand.

6.3 Higher education teaching professionals, further education teaching professionals

Box 6.2: Higher education teaching professionals

Occupation(s) and SOC code(s):

Higher education teaching professionals – 2311

This occupation is not included on our recommended shortage occupation list.

Top-down data

2311 Higher education teaching professionals

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£20.89		
Percentage of employees with NVQ3+	95.9						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-0.5	4.8	4.8	V2 Annual percentage change in employment estimates	1.4	-7.2	0.3
P2 Annual percentage change of mean hourly pay for all employees	0.8	2.9	2.9	V3 Annual percentage change of median total paid hours	-0.9	0.8	0.8
P3 Return to occupation, given NQF3, with age and region controls	0.90	*	*	V4 Absolute change in proportion working for employer under 1 year	0.02	-0.02	0.01
I1 Absolute change in median vacancy duration	-1.6	22.3	-27.1	E1 SSVs as a percentage of all vacancies	13	13	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.21	0.26	0.23	E2 SSVs as a percentage of hard-to-fill vacancies	86	86	*
V1 Annual percentage change in unemployment by sought occupation	-26.0	5.6	36.3	E3 SSVs as a percentage of total employment	0.43	0.43	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	15	13	11	Percentage of workforce trained in past 13 weeks	34	32	35

Box 6.3: Further education teaching professionals

Occupation(s) and SOC code(s):

Further education teaching professionals – 2312

This occupation is not included on our recommended shortage occupation list.

Top-down data

2312 Further education teaching professionals

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£17.24		
Percentage of employees with NVQ3+	95.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	2.1	4.4	4.4	V2 Annual percentage change in employment estimates	-4.6	9.8	-2.4
P2 Annual percentage change of mean hourly pay for all employees	6.0	1.9	1.9	V3 Annual percentage change of median total paid hours	0.0	0.4	0.4
P3 Return to occupation, given NQF3, with age and region controls	0.83	1.02	1.08	V4 Absolute change in proportion working for employer under 1 year	-0.04	0.03	0.00
I1 Absolute change in median vacancy duration	-8.9	3.4	-1.4	E1 SSVs as a percentage of all vacancies	8	8	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.23	0.23	0.20	E2 SSVs as a percentage of hard-to-fill vacancies	50	50	*
V1 Annual percentage change in unemployment by sought occupation	-22.5	5.0	39.5	E3 SSVs as a percentage of total employment	0.12	0.12	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	8	6	7	Percentage of workforce trained in past 13 weeks	51	48	51

6.8 These occupations are not on the current shortage occupation list. We received evidence from the Department for Business, Innovation and Skills (BIS). Our analysis of the top-down data indicates that both higher education teaching professionals and further education teaching professionals are skilled.

6.9 The top-down data for these two occupations are similar. The higher

education teaching occupation passed on only 1 out of 8 shortage indicators, and the further education teaching occupation passed on only 1 out of 9, suggesting that neither occupation is in shortage. In both occupations, the only indicator point towards shortage is the change in the proportion of new hires. Jobcentre Plus (JCP) unemployment has increased by more than 30 per cent for both occupations.

6.10 We received evidence from BIS stating that there is no national shortage of teachers in further education. BIS also asserted possible shortages in higher education, but we received no specific

evidence to that effect. In light of the above, we do not include teachers in higher or further education on our recommended shortage list.

6.4 Secondary education teaching professionals

Box 6.4: Secondary education teaching professionals

Occupation(s) and SOC code(s): Secondary education teaching professionals – 2314

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Secondary school teacher in the subject of maths and science.

Top-down data

2314 Secondary education teaching professionals

Skilled	Skilled in top-down analysis						
SOC skill level classification	4		Median hourly pay for all employees	£20.92			
Percentage of employees with NVQ3+	98.3						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 3 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	4.6	1.2	1.2	V2 Annual percentage change in employment estimates	-4.0	-4.3	-2.2
P2 Annual percentage change of mean hourly pay for all employees	4.7	6.8	6.8	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.10	1.24	1.33	V4 Absolute change in proportion working for employer under 1 year	0.01	0.01	0.01
I1 Absolute change in median vacancy duration	-3.1	-8.9	-1.1	E1 SSVs as a percentage of all vacancies	10	10	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.79	0.90	0.73	E2 SSVs as a percentage of hard-to-fill vacancies	69	69	*
V1 Annual percentage change in unemployment by sought occupation	-22.0	11.4	56.2	E3 SSVs as a percentage of total employment	0.33	0.33	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	6	7	6	Percentage of workforce trained in past 13 weeks	49	50	49

Stakeholder evidence:

We received evidence from the Department for Children, Schools and Families (DCSF), the Welsh Assembly Government and the Recruitment and Employment Confederation (REC). We took evidence at a meeting of the DCSF Social Partners.

- 6.11 We included secondary education teachers in the subjects of maths and science only on our recommended shortage list in autumn 2008. Our analysis of the top-down data indicates that teachers in secondary education are skilled. Secondary education teaching professionals are classified in SOC at level 4, the highest level of skill in this categorisation. Analysis of the 2008 Labour Force Survey (LFS) indicates that approximately 98 per cent of those employed are qualified to National Qualifications Framework (NQF) level 3 or above.
- 6.12 In 2007 it was announced in the Department for Children, Schools and Families (DCSF) Children's Plan that teaching is to become a Masters level profession. We were told that the roll-out of the Masters in Teaching and Learning would begin for newly qualified teachers in schools in the 2009/10 academic year.
- 6.13 This occupation passed on 3 out of 9 valid shortage indicators. The top-down data indicate that mean and median pay have increased, but only the former indicates shortage. The ratio of vacancies to unemployment from JCP data has reduced since April 2009, but still indicates shortage. JCP unemployment has increased by 56 per cent, but this is a relatively small increase in comparison to an average of 146 per cent across all skilled occupations. Overall, the top-down data demonstrate that there is not an overall national shortage of secondary education teachers.
- 6.14 DCSF presented evidence which confirmed that there is no overall national shortage. DCSF data show that the vacancy rates for all local authority-maintained schools (not only secondary schools) stands at 0.6 per cent of teachers in post in 2009. However, they told us of regional and localised variations with higher vacancy rates, particularly in London, the East of England and the West Midlands (all 0.9 per cent). DCSF argued that teaching posts within these regions should be on the shortage occupation list. It is not within our remit to limit the shortage occupation list to particular regions and, in any case, the regional variation is not large.
- 6.15 There was evidence that in 2009 in England the vacancy rate for maths teachers was 1.4 per cent, compared with 0.8 per cent for all subjects (local authority secondary schools only). The evidence also showed that the vacancy rate for science teachers was 1.2 per cent.
- 6.16 We also received anecdotal evidence from the Recruitment and Employment Confederation that its members are finding it difficult to recruit maths and science teachers.
- 6.17 We saw evidence of a reduction in the proportion of maths periods delivered by teachers with a maths qualification. DCSF told us that in 2002, 88 per cent of periods were being delivered by a full-time teacher with maths qualification, but in 2007 this fell to 84 per cent.
- 6.18 DCSF told us that the 2007 Secondary Schools Curriculum and Staffing Survey found that 74 per cent of maths teachers and 81 per cent of science teachers held a relevant post-A level qualification. They said that in 2002 the figures for each were 76 per cent for maths and 89 per cent for science.
- 6.19 In terms of sensible, we received evidence that, despite additional financial incentives and recruitment drives, data on new entrants to initial teacher training (ITT) show that recruitment targets are still not

being met in England for maths teachers. For example, we saw evidence that the total number of new entrants to the maths ITT had decreased. We also saw evidence of a fall in the number of recruits to the Overseas Trained Teacher Programme for maths and science.

“There are a range of incentives to support the recruitment and retention of high-quality teachers following a variety of career paths, both within the classroom and as school leaders. Schools have discretion to make additional awards to teachers such as for recruitment and retention, teaching and learning responsibility payments and special educational needs teaching.”

DCSF response to MAC call for evidence

6.20 We asked whether the recession is helping to alleviate teacher shortages. DCSF said that there is no conclusive evidence that it is. However, they said there are indications that more people are becoming interested in teaching as a career. For example, we were told that the Training and Development Agency for Schools reported a 45 per cent increase in the volume of enquires about teaching careers compared with the same time last year. We saw that the total number of applications for entry to Postgraduate Certificate in Education (PGCE) courses in 2009/10 across all phases of compulsory education showed a 25 per cent increase in applications compared with the same week in 2008. The evidence also showed that the number of applications to courses in maths has increased by 58 per cent, chemistry by 44 per cent and physics by 69 per cent. DCSF said they do not know how many of the applicants will start or complete the course or enter teaching and, moreover, the benefits, if any, will not be apparent until after September 2010.

6.21 Conversely, the Welsh Assembly Government presented evidence which showed that in January 2009 there were 54 vacancies in secondary schools in Wales (an increase of five from January 2008). We were told that the individual subjects with the most vacancies were Welsh and maths with six each. The total number of vacancies in all science subjects combined was 13. We were told that the vacancy rate in this sector is 0.4 per cent. We also received evidence that the continuing relatively low level of teacher vacancies in Wales, and strong demand for those that are advertised, is against a background of falling pupil numbers and fewer schools.

6.22 In conclusion, we believe that, on balance, we have received sufficient evidence of a shortage of secondary school teachers in maths and science across large parts of the UK to justify including them on our new recommended national shortage list. We note the substantial increases in applications for teacher training in relevant courses, and will monitor the situation closely to see if this translates to additional teachers in secondary schools and, therefore, helps to eliminate the shortage.

6.23 The regional and country dimension of the evidence we received raises some important issues. The evidence we received from the Welsh Assembly Government does indicate that there may not be an overall shortage of secondary school teachers in Wales and, along with variations in vacancy rates across different regions and countries of the UK, supports the view expressed in Migration Advisory Committee (2008c) that *“we are not convinced that localised shortages could not be addressed through facilitating greater pay differential between areas where there is an adequate supply and those where there is not.”* We believe

strongly that greater pay flexibility is needed to deal with regional shortages. We urge DCSF to make further progress on such pay flexibilities. Thereafter, the Resident Labour Market Test (RLMT) route is the appropriate way to deal with

any localised shortages that remain. Data presented in Chapter 2 suggest that the shortage list is helping to fill shortages in maths and science. However, the RLMT is being used to fill vacancies in other subjects too.

6.5 Primary and nursery education teaching professionals

Box 6.5: Primary and nursery education teaching professionals

Occupation(s) and SOC code(s): Primary and nursery education teaching professionals – 2315

This occupation is not included on our recommended shortage occupation list.

Top-down data

2315 Primary and nursery education teaching professionals

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£19.93		
Percentage of employees with NVQ3+	97.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 9 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	3.4	2.5	2.5	V2 Annual percentage change in employment estimates	-0.7	4.7	2.4
P2 Annual percentage change of mean hourly pay for all employees	3.6	5.6	5.6	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	0.50	0.76	0.71	V4 Absolute change in proportion working for employer under 1 year	0.01	0.01	0.01
I1 Absolute change in median vacancy duration	-1.9	-7.1	1.1	E1 SSVs as a percentage of all vacancies	15	15	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.49	0.69	0.55	E2 SSVs as a percentage of hard-to-fill vacancies	68	68	*
V1 Annual percentage change in unemployment by sought occupation	-24.8	16.8	57.9	E3 SSVs as a percentage of total employment	0.16	0.16	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	4	4	4	Percentage of workforce trained in past 13 weeks	55	55	54

Stakeholder evidence:

We received evidence from DCSF.

6.24 This occupation is not currently on the shortage occupation list. Our analysis of the top-down data indicates that this occupation is skilled. Primary and nursery education teaching professionals passed on 4 out of 9 shortage indicators, an

above average proportion, but below our top-down benchmark for strong evidence of shortage. The mean and median pay have increased but only the former indicates shortage. Nevertheless, the evidence presented to us by DCSF

Box 6.6: Special needs education teaching professionals

Occupation(s) and SOC code(s): Special needs education teaching professionals – 2316

Only the following job title within this occupation is included on our recommended shortage occupation list:

All teaching posts in special schools.

Top-down data

2316 Special needs education teaching professionals

Skilled		Skilled in top-down analysis					
SOC skill level classification	4	Median hourly pay for all employees		£21.47			
Percentage of employees with NVQ3+	93.7						
Shortage		Excluding National Employers Skills Survey-based data, occupation passes 1 out of 9 valid indicators					
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	3.1	-2.4	-2.4	V2 Annual percentage change in employment estimates	-4.8	-17.7	-9.7
P2 Annual percentage change of mean hourly pay for all employees	1.4	-0.8	-0.8	V3 Annual percentage change of median total paid hours	0.1	-0.1	-0.1
P3 Return to occupation, given NQF3, with age and region controls	0.59	0.60	0.65	V4 Absolute change in proportion working for employer under 1 year	0.00	-0.04	-0.01
I1 Absolute change in median vacancy duration	18.7	2.6	-10.5	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.28	0.44	0.32	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-26.0	5.5	41.9	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	2	4	6	Percentage of workforce trained in past 13 weeks	59	59	54

Stakeholder evidence:

We received evidence from DCSF.

stated that there is no national shortage of primary and nursery teachers. As such, we do not include this occupation on our recommended shortage list.

- 6.25 DCSF argues that all teaching posts in special schools should become shortage occupations. We believe that in SOC the nearest match for these specific job titles is SOC 2316, special needs education teaching professionals.

6.6 Special needs education teaching professionals

- 6.26 This occupation is skilled according to our top-down analysis. Special needs education teaching professionals are not on the current shortage list. We received evidence that teachers in special schools obtain Qualified Teacher Status in the same way as other teachers and may then obtain specialist qualifications. DCSF said that, in 2009, the number of regular teachers in special schools was 14,900, approximately 600 higher than in 2001.
- 6.27 Special needs education teaching professionals only passed on 1 out of 9 shortage indicators, which does not point to shortage. The change in the proportion of new hires is the sole indicator of shortage. Mean and median pay in this occupation have fallen, the ratio of vacancies to unemployment is low and the median vacancy duration has fallen. We are mindful that not all teachers in this occupation will be in special schools, so we also paid close attention to the bottom-up evidence.
- 6.28 In terms of shortage, we received evidence that the number of special school vacancies, at 1.4 per cent, is higher than the rate for all teachers, which is 0.6 per cent. There is also anecdotal evidence to suggest that shortages of suitably qualified teachers

in special schools are leading to the recruitment of overseas trained teachers, particularly from Australia, Canada and South Africa.

“There are also historical, and continuing, higher vacancy rates for teachers in special schools than in other maintained schools despite a mandatory allowance for all special school classroom teachers ...”

DCSF response to MAC call for evidence

- 6.29 We received evidence that the higher vacancy rate in special schools can be attributed to reasons such as the numbers of teachers with post-Qualified Teacher Status skills and qualifications to teach more high-need/low-incidence special educational needs (SEN) not being that high. We were told that for many it is seen as a less attractive and rewarding career option, even with the SEN allowances.
- 6.30 DCSF told us that the age profile of teachers in special schools is markedly different from that seen in all maintained schools. We were told that in special schools, nearly 46 per cent of teachers are aged 50 and over, compared with 28 per cent of teachers in maintained schools. DCSF said this means that nearly half of teachers in special schools are now nearing retirement, and there are reported difficulties in replacing them.
- 6.31 In terms of sensible, we received evidence that there is a mandatory allowance for all special school classroom teachers. We also saw evidence of training opportunities, media campaigns and promotional work to increase the workforce.
- 6.32 We have received sufficient evidence to justify including all teaching posts in special schools on our recommended shortage list.

6.7 Town planners

Box 6.7: Town planners

Occupation(s) and SOC code(s): Town planners – 2432

This occupation is not included on our recommended shortage occupation list.

Top-down data

2432 Town planners

Skilled	Skilled in top-down analysis						
SOC skill level classification	4			Median hourly pay for all employees	£17.76		
Percentage of employees with NVQ3+	90.7						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 7 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	-0.1	-5.7	-5.7	V2 Annual percentage change in employment estimates	-4.6	6.5	7.7
P2 Annual percentage change of mean hourly pay for all employees	-1.0	2.0	2.0	V3 Annual percentage change of median total paid hours	0.0	0.0	0.0
P3 Return to occupation, given NQF3, with age and region controls	1.40	*	*	V4 Absolute change in proportion working for employer under 1 year	0.00	0.06	0.03
I1 Absolute change in median vacancy duration	0.4	-6.7	*	E1 SSVs as a percentage of all vacancies	77	77	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.58	0.41	0.17	E2 SSVs as a percentage of hard-to-fill vacancies	79	79	*
V1 Annual percentage change in unemployment by sought occupation	-10.4	119.7	402.3	E3 SSVs as a percentage of total employment	1.01	1.01	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	6	3	2	Percentage of workforce trained in past 13 weeks	42	43	40

Stakeholder evidence:

We received evidence from the Department for Communities and Local Government (CLG) and Asset Skills.

- 6.33 This occupation is not currently on the shortage occupation list. The Government asked us to consider it in our spring 2009 review. However, the Department for Communities and Local Government (CLG) subsequently asked us to defer our consideration until this review.
- 6.34 CLG informed us that, while the shortage of local government planning officers with the appropriate skills remains an issue, they were not in a position to submit evidence. They said that this is because relevant research will not be published until December 2009 at the earliest.
- 6.35 Analysis of the top-down data for this occupation found that it only passed on 1 out of 7 valid shortage indicators. JCP unemployment has increased by 402 per cent (albeit from a small base of 45 claimants in April 2008).
- 6.36 Asset Skills, the Sector Skills Council responsible for planning, told us that they were not able to generate the evidence needed to provide a strong enough argument for town planners to be added to the shortage list. They also told us that the current economic climate has severely affected town planners and related occupations. They said that the impact of this has been a fall in vacancies, and any shortage had been temporarily plugged.
- 6.37 In light of the above, we do not include this occupation on our recommended shortage list. We will consider this occupation again in autumn 2010.

6.8 Dancers and choreographers

- 6.38 We first reviewed SOC 3414, dancers and choreographers, in our autumn 2008 report. At that time we included skilled ballet dancers on our recommended shortage list as a subset of this occupation. In our spring 2009 report, on the basis of further evidence received, we extended this subset to include contemporary dancers.
- 6.39 We previously confirmed that this occupation is skilled. We also received evidence that classical ballet dancers are selected on the basis of appropriate classical ballet training, artistic excellence, experience of repertoire, innate ability and aesthetics, rather than academic standards.

Box 6.8: Dancers and choreographers

Occupation(s) and SOC code(s): Dancers and choreographers – 3414

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Skilled ballet dancers and (not reviewed in this report) skilled contemporary dancers.

Top-down data

3414 Dancers and choreographers

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	*		
Percentage of employees with NVQ3+	36.0						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 4 out of 8 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	*	*	*	V2 Annual percentage change in employment estimates	62.0	30.1	27.6
P2 Annual percentage change of mean hourly pay for all employees	10.3	-5.5	-5.5	V3 Annual percentage change of median total paid hours	5.1	1.8	1.8
P3 Return to occupation, given NQF3, with age and region controls	*	*	1.29	V4 Absolute change in proportion working for employer under 1 year	0.13	-0.24	0.06
I1 Absolute change in median vacancy duration	0.3	-78.2	-39.9	E1 SSVs as a percentage of all vacancies	0	0	*
I2 Live unfilled vacancies/unemployment by sought occupation	1.01	0.87	0.46	E2 SSVs as a percentage of hard-to-fill vacancies	0	0	*
V1 Annual percentage change in unemployment by sought occupation	-14.2	4.8	57.5	E3 SSVs as a percentage of total employment	0.00	0.00	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	31	20	16	Percentage of workforce trained in past 13 weeks	41	19	18

Stakeholder evidence:

We received evidence from the National Campaign for the Arts (NCA), the Royal Ballet, the Society of London Theatre and the Theatrical Management Association.

“We cannot compromise on our artistic standards. A failure to attract talent of sufficient calibre would impact directly on the quality of our work and damage our international reputation.”

Royal Ballet response to MAC call for evidence

“There is insufficient talent coming through from the Royal Ballet School, and many of those who come through that route are not British anyway.”

Royal Ballet response to MAC call for evidence

- 6.40 The House of Commons Home Affairs Committee’s report *Managing Migration: The Points Based System* (2009) states: “we consider the use of formal qualifications as a proxy for professional experience and training to be inadequate, and we reiterate our position that the Government must recalibrate the allocation of points to recognise professional experience and training. However, we welcome the inclusion of ‘skilled ballet dancers’ ... on the latest UK shortage occupation list as an interim measure.” We discuss the Home Affairs Committee’s report in more detail in Chapter 10.
- 6.41 Dancers and choreographers passed on 4 out of 8 shortage indicators, which suggests that the occupation may be in shortage. Employment in the occupation has increased by over 25 per cent and the number of JSA claimants has increased, although not to the same extent as many other occupations. JCP data also show that the vacancy-to-unemployment ratio is sufficiently high for that indicator to show shortage. We saw that hours in the occupation are increasing, as is the proportion of the workforce that are new hires.
- 6.42 We received evidence that the shortage of highly skilled ballet dancers is a worldwide issue and that, while the UK is a leader in relation to world-class dance and choreography, its ballet schools and conservatoires do not supply enough world-class performers.
- 6.43 The NCA said that, in the case of male ballet dancers, there is a serious shortage at every level. We were also told that, in the case of female ballet dancers, it is difficult to find dancers at the level of first soloist or above. We saw evidence that some companies have found that there is a serious shortage of skilled and professionally trained classical ballet dancers at every level, regardless of gender.
- 6.44 We were presented with evidence that companies habitually recruit internationally. We were told that it is often the case in auditions that only one or two applicants may be suitable.
- 6.45 The NCA presented evidence that a key factor in the talent search is height, particularly for male dancers. In addition, we received evidence that there is a constant search for talent to supply a sector with a brisk turnover.
- 6.46 We also received evidence that, although demand exceeds supply, increasing salary will not increase the pool of skilled labour. We were told that raising the salary levels would not change this and employees argue that ‘it is not an option’ to hire dancers who do not meet the required standards.
- 6.47 It was also asserted that a company’s artistic standards are paramount. If candidates of a suitable standard are not available the posts remain unfilled. We were also told that current and future changes in economic and labour market conditions are unlikely to have a significant

- impact on the status of ballet dancers as a shortage occupation.
- 6.48 In terms of sensible, we saw evidence that ballet companies work very closely with the UK classical ballet schools to ensure that their students are trained towards the high artistic standards that are required. We also received evidence of outreach programmes aimed at attracting young people to vocational training in ballet.
- 6.49 The NCA also presented evidence to suggest that, without ballet dancers being given shortage occupation status, many dancers would not gain the number of points required under other routes.
- 6.50 In conclusion, we believe that we have received sufficient evidence to suggest that there continues to be a shortage of skilled ballet dancers. We therefore recommend that those who meet the standard required by internationally recognised UK ballet companies (e.g. Birmingham Royal Ballet, English National Ballet, Northern Ballet Theatre, The Royal Ballet and the Scottish Ballet) remain on the shortage occupation list.
- 6.51 The NCA told us that there is no formal definition for what an internationally recognised UK ballet company is. However, we were told that such a company would be one that: has performed at or has been invited to perform at venues of the calibre such as the Royal Opera House, Sadler's Wells or the Barbican, either in the UK or overseas; attracts dancers and/or choreographers and other artists from other countries; is endorsed as being internationally recognised by a UK industry body such as the Arts Councils (of England, Scotland and/or Wales) and may have been nominated for or has won one of the following awards: a Critics' Circle National Dance Award, a Laurence Olivier Award or a South Bank Show Award, or a similar award given in another country.

6.9 Ship and hovercraft officers

Box 6.9: Ship and hovercraft officers

Occupation(s) and SOC code(s): Ship and hovercraft officers – 3513

This occupation is not included on our recommended shortage occupation list.

Top-down data

3513 Ship and hovercraft officers

Skilled	Skilled in top-down analysis						
SOC skill level classification	3			Median hourly pay for all employees	*		
Percentage of employees with NVQ3+	49.26*						
Shortage	Excluding National Employers Skills Survey-based data, occupation passes 1 out of 7 valid indicators						
Indicators	Sept 08	Mar 09	Sept 09	Indicators (continued)	Sept 08	Mar 09	Sept 09
P1 Annual percentage change of median hourly pay for all employees	0.0	*	*	V2 Annual percentage change in employment estimates	11.4	9.7	-2.0
P2 Annual percentage change of mean hourly pay for all employees	7.7	10.0	10.0	V3 Annual percentage change of median total paid hours	0.6	-3.5	-3.5
P3 Return to occupation, given NQF3, with age and region controls	0.68	1.21	1.22	V4 Absolute change in proportion working for employer under 1 year	-0.01	0.02	-0.02
I1 Absolute change in median vacancy duration	*	*	*	E1 SSVs as a percentage of all vacancies	100	100	*
I2 Live unfilled vacancies/unemployment by sought occupation	0.25	0.09	0.05	E2 SSVs as a percentage of hard-to-fill vacancies	100	100	*
V1 Annual percentage change in unemployment by sought occupation	-28.6	6.5	95.9	E3 SSVs as a percentage of total employment	0.20	0.20	*
Sensible indicators	Sept 08	Mar 09	Sept 09		Sept 08	Mar 09	Sept 09
Percentage of workforce born non-EEA	3	6	9	Percentage of workforce trained in past 13 weeks	44	29	33

Stakeholder evidence:

We received evidence from the Chamber of Shipping, Nautilus International and a shipping company who did not wish to be identified. We also spoke to two ferry operators.

6.52 Our top-down analysis indicates that this occupation is skilled. However, it passed just 1 out of 7 available indicators for shortage. This is down from 6 out of 11 when we last looked at this occupation in autumn 2008 and included it on our

recommended list. The annual percentage increase in mean hourly pay remains above our threshold, while the claimant count has nearly doubled in the year to April 2009.

- 6.53 On the whole, this occupation does not pass a sufficient number of top-down shortage indicators to be regarded as being in shortage. Therefore, strong bottom-up evidence of labour shortage is required to justify retaining this occupation on our recommended list.
- 6.54 We looked closely at the bottom-up evidence. We received evidence from, and met with, both Nautilus, which is the relevant trade union, and the Chamber of Shipping, which is the trade association for the UK shipping industry.
- 6.55 In relation to officers for hovercrafts, we understand there is only one hovercraft service in operation within the UK. We also spoke to two ferry operators and neither had problems recruiting ship's officers.
- 6.56 The Chamber of Shipping states in its annual review for 2008–09 that *"It remains to be seen how recent dramatic changes in the world economy and demand for shipping will be reflected in the different shipping sectors in the medium term, though it is clear that the level of activity in most can be expected to decline."*
- 6.57 Both Nautilus and the Chamber of Shipping told us that UK-trained officers are in demand across the world. However, they differed in their view of whether or not there is a shortage of officers for work in the UK: Nautilus said that there was no shortage and the Chamber said that there was a shortage.
- 6.58 When we met with the Chamber of Shipping they told us that annual training capacity had steadily risen from a low of approximately 400 in 1992 to around 900 now. This had in part been driven by requirements associated with the tonnage tax introduced in 2000. By entering a vessel into tonnage tax an operator pays a certain amount of tax per tonnage regardless of profit or loss. This gives those companies who choose to enter vessels into the scheme a more stable and consistent financial liability than would otherwise be the case if they were simply subjected to the large variances that can occur in the value of tonnage. However, by entering into the tonnage tax scheme a company also commits to a mandatory new officer training requirement. This has, at least in part, driven the increase in training.
- 6.59 However, the Chamber says that this increase in training has not alleviated shortages because officers are attracted, in part at least, to work outside the UK. When an officer works more than 183 days in a year outside the UK they qualify for lower tax liability. We received corroborating anecdotal evidence from one shipping company.
- 6.60 The Chamber also told us that further increases in training positions may be constrained by insufficient numbers of training staff and training positions on ships: trainees have to spend part of their training period at sea and there are restrictions on the number of trainees a ship can carry.
- 6.61 On the other hand, Nautilus told us that the shortages that currently exist are for UK officers working outside the UK and, therefore, outside the UK immigration system. They also said that many UK officers prefer to work closer to home, and enjoy shorter tours of duty and the increased time at home that this provides.
- 6.62 Nautilus suggested to us that if the Committee were to leave ship and hovercraft officers on the shortage occupation list, this may allow companies to access a cheaper labour supply and this will ultimately be damaging to employment and training in the maritime sector.

“We believe that classifying ship and hovercraft officers as a shortage occupation in the UK is not only inaccurate, but also potentially highly damaging to employment and training within the maritime sector.”

Nautilus International response to MAC call for evidence

6.63 The Chamber of Shipping said that ships are required to carry a minimum crew level and if the need for a crew member cannot be met, the ship is prevented from going to sea. Therefore, removal of the occupation from the shortage occupation list would mean that companies would need to use the RLMT route to fill positions. This would add a delay while employers complied with the RLMT’s advertising requirements and, therefore, ships could be left in dock unable to sail. One shipping company told us that they have had to ask officers who are on leave to cut their leave short and to work extra weeks to cover these situations. However,

we feel that sufficient flexibility should be available to avoid this situation in all but the most extreme cases.

6.64 In conclusion, our top-down analysis has shown a trend away from the previous shortage and now shows little sign of shortage. In the main, the bottom-up evidence we received was anecdotal. We do not wish to put the UK shipping industry at a disadvantage; equally, however, we do not wish to damage the clear revival in officer training or risk unnecessary unemployment of suitably qualified UK staff. As a result we recommend that ship and hovercraft officers are removed from the shortage occupation list. Our decision is a finely balanced one and we encourage Nautilus and the Chamber of Shipping to continue discussions and work towards identifying a mutually agreeable proposal for a way forward. We will look at this occupation again for our autumn 2010 review when we will be reviewing all skilled occupations.

6.10 Butchers, meat cutters

Box 6.12: Butchers, meat cutters

Occupation(s) and SOC code(s): Butchers, meat cutters – 5431

Only the following job titles within this occupation are included on our recommended shortage occupation list:

Skilled meat boners and skilled meat trimmers (skilled is where the salary is at least £9.00 per hour).

Top-down data:

The top-down data relating to this SOC code are not relevant as we are only dealing here with the skilled subset of an occupation that, as a whole, does not meet our skill criteria.

Stakeholder evidence:

We received joint evidence from the British Meat Processors Association (BMPA) and the Northern Ireland Meat Exporters Association. We also met with both organisations. We received evidence from Dunbia (Sawley) and we received a letter of support from the Northern Ireland Minister of Enterprise, Trade and Investment. In addition we visited Anglo Beef Processors’ meat processing plant in Lurgan, Northern Ireland.

- 6.65 In our autumn 2008 report we stated that, although we had received some evidence in relation to these job titles, the evidence was insufficient to consider them for the shortage occupation list at that time. We agreed to review them this time around.
- 6.66 The BMPA told us that at least 70 per cent of the primary meat processing industry in the UK was concentrated in Northern Ireland, Wales and Northern England.
- 6.67 This occupation is not skilled in our top-down analysis, but the SOC code covers a wide range of jobs, and therefore, the top-down data are of limited relevance to the specific jobs we examined: meat boners and meat trimmers. Instead, we have concentrated on the bottom-up evidence. In addition, in order to assess the level of skill required to carry out these jobs, we visited Anglo Beef Processors' meat processing plant in Lurgan, Northern Ireland.
- 6.68 Dunbia (Sawley), a meat processing plant in Lancashire, told us that on-the-job training takes around two years for someone to go from no knife skills to someone who can work as a meat trimmer or boner. However, they also said that different workers will reach different levels of ability and, therefore, there is some degree of innate ability involved. Clearly, from the point of view of the employers, the higher skilled individuals are more efficient. From what we saw, and what we heard from stakeholders, we conclude that these jobs are skilled.
- 6.69 We were told that since 2007 there has been an increasing problem in finding the right numbers of boners and trimmers skilled to the required level to fulfil the requirements of the UK industry. We understand that, prior to 2007, there had been sufficient numbers within the UK, Ireland and the rest of the EU. However, workers have seemingly been drawn into other industries and away from the UK. In many cases immigrants who came from Eastern Europe have been attracted by improving prospects in their own country.
- 6.70 In Migration Advisory Committee (2009a) we found that immigration from the A8 member states had been an important factor in filling labour market gaps in the food processing sector as a whole. However, Worker Registration Scheme data appeared to show a slight decline in the number of applications from A8 nationals to the sector between 2006 and 2007.
- 6.71 In addition, a scheme for A2 nationals to take up positions in the food processing sector was undersubscribed. During 2007, only 1,405 quota places were taken up out of a total of 3,500. Migration Advisory Committee (2008d) also highlighted that Eastern European workers were returning home. We recognised in that report that if these workers decreased by significant numbers it could pose problems for the sector.
- 6.72 The industry recognises that a reliance on non-EEA labour is not good for the industry, but argues that in the short term they would fill a need and would help to train up lower-skilled workers.

"... we are aware that any long-term reliance on non-EU labour is a significant threat to our industry and we are therefore launching a programme of work ... to raise awareness of the meat industry as a professional industry with good prospects for new entrants. We are hoping that this programme will deliver results within 2–3 years and will mean that the current shortage of skilled staff is very much a temporary issue."

BMPA response to MAC call for evidence

- 6.73 Dunbia (Sawley) told us they had a number of vacancies on their site which they had constant problems in filling. Vacancy durations have increased to such a degree that they are only running two production lines instead of the three they have available. Average overtime on their site has increased from 2.33 hours a week to 8.37 hours a week, although it is not clear over what time period. Other sites in the same group are apparently suffering from the same problems.
- 6.74 Dunbia (Sawley) said that the company was investing significantly in developing local employees to fill vacancies, but that this was a lengthy process. Dunbia has created a Butchery Academy based in Northern Ireland with the capacity to train eight trainees at a time. All these positions are currently taken, but it will take 12–18 months before they become skilled boners or trimmers. Any non-EEA workers brought in now to fill vacancies would be used to help mentor local workers to improve their skills.
- 6.75 We also received a letter from the Minister of Enterprise, Trade and Investment in Northern Ireland supporting the argument for meat boners and trimmers to be on the shortage occupation list.
- 6.76 We recognise that substituting for less skilled workers could affect the efficiency and, therefore, productivity of meat processing plants and possibly the potential for future growth. We also recognise the efforts the sector is making to plan for a better skilled resident workforce.
- 6.77 In the short term, therefore, we recommend that the job titles skilled meat boner and skilled meat trimmer be added to the UK shortage occupation list. In order to define skill we recommend that a pay threshold is used.
- 6.78 We collected evidence from employers on the pay of skilled meat boners and trimmers. This has led us to believe that £9.00 per hour should be the minimum pay for both skilled boners and trimmers. This is above the 70th percentile for the relevant occupation in the Annual Survey of Hours and Earnings (ASHE). The relatively low proportions with qualifications in this occupation – 8 per cent qualified to NQF level 3 or above and 41 per cent qualified to level 2 or above – illustrates that most jobs in the occupation are less skilled and justifies setting a salary threshold for skill towards the top end of the distribution. We therefore recommend a minimum pay threshold of £9.00 per hour for skilled meat boners and trimmers.

“Employment of immigrant workers in these skill shortage positions will allow us to develop and grow our business beyond the levels that currently exist.”

Dunbia (Sawley) response to MAC call for evidence

“Since the old work permits arrangement ceased, what has happened [is that] the industry has ‘managed’ using less skilled labour. The consequence of this is loss in productivity and efficiency and unless addressed [this] could lead to withdrawal of investment by processors in the UK.”

BMPA response to MAC call for evidence

6.11 Chefs

Box 6.11: Chefs

Occupation(s) and SOC code(s): Chefs, cooks – 5434

Only the following job title within this occupation is included on our recommended shortage occupation list: Skilled chef – skilled is where salary is at least £8.45 per hour after deductions for accommodation, meals etc, and where the worker has at least three years' relevant experience.

Top-down data:

The top-down data relating to this SOC code are not relevant as we are only dealing here with the skilled subset of an occupation that, as a whole, does not meet our skill criteria.

Stakeholder evidence:

We received evidence from the Department for Culture, Media and Sport (DCMS), BIS, People 1st, the British Hospitality Association, the Chinese Immigration Concerns Committee, e2e Linkers Ltd, Chinese Catering Solutions, The Monitoring Group, Visalogic, Goldstar Chefs, The Academy of Oriental Cuisine, The Birmingham Chamber of Commerce and Industry, Christine Lee & Co (Solicitors) Limited, Matchworkers International and a joint submission from the Bangladesh Caterers Association UK, the Confederation of Chinese Associations and the London Chinatown Chinese Association. We also met with representatives from some of these organisations and others, including Fernandes Vaz Solicitors and the Guild of Bangladeshi Restaurateurs. We also met with officials from the Embassy of the People's Republic of China. The Committee were also represented at an ethnic chef summit jointly organised by Government and the industry.

- 6.79 In our autumn 2008 report we recommended that skilled chefs be included on the UK shortage occupation list. The Government accepted this recommendation, but asked that we take another look at the occupation for this review.
- 6.80 In autumn 2008 we found that, on aggregate, the occupation of chef is not skilled, as it did not pass any of our three skill indicators. However, we examined the occupation in autumn 2008, using the bottom-up evidence we received, and determined that a proportion of the jobs within the occupation were skilled.
- 6.81 According to the evidence we received for autumn 2008, the fraction of skilled chefs within the SOC occupation 5434 is around one-third of the total. We therefore adopted the 70th percentile of the pay range for this occupation as the skilled benchmark, taken from the ASHE of 2007. This gave us a figure of £8.05, rounded to £8.10, for our autumn 2008 recommendations.
- 6.82 We did not review the occupation for our spring 2009 report, but we recommended that the pay be up-rated in line with growth in earnings. The corresponding ASHE figure for 2008 was £8.15. We up-rated this by 3.5 per cent to reflect earnings growth between 2008 and 2009, yielding a rounded figure of £8.45. Our intention is to review the pay benchmark again in our spring 2010 review using the most recent ASHE data (available November 2009).

- 6.83 As in autumn 2008, for this review we mainly received evidence in relation to ethnic cuisine. Here, we were told, chefs preparing food need to have specific knowledge and experience of the ingredients, often combined with knowledge of regions and cooking practices. We were told these skills cannot be taught to anyone without the relevant cultural background and understanding.
- 6.84 For this review, we received similar evidence in relation to skill and, therefore, we find no reason to alter our thinking. We therefore remain of the view that around 30 per cent of the chef workforce is skilled.
- 6.85 Turning to shortage, we received a large amount of, mainly anecdotal, evidence that shortages still exist. We were told that attempts had been made to recruit EEA workers, but that difficulties arose with the language spoken in ethnic cuisine kitchens, the lack of experience and knowledge to prepare food to the required standard, and a reluctance to work the often unsocial hours.
- 6.86 However, the REC and KPMG LLP *Report on Jobs* for September 2009 (REC/KPMG, 2009) shows that the recession has reduced demand in the hotel and catering sector as discussed in Chapter 2, although there are tentative signs that the decline in demand is levelling out.
- 6.87 e2e Linkers Ltd (a recruitment agency) stated that advertisements placed across the UK do not attract applicants with the relevant skill or experience. They told us of an advertising campaign during the summer of 2009: 24 advertisements were placed across the UK at head chef, curry chef and tandoori chef level. The advertisements also ran in JCP. Only six CVs were received and none were considered to be seriously eligible. The company, which is a recruitment agency, told us that its clients currently have 29 vacancies for skilled chefs.
- 6.88 People 1st, the Sector Skills Council for hospitality, leisure, travel and tourism, told us that, despite the economic downturn, there remains a shortage of skilled chefs within the UK. The problem is most acute for Asian and Oriental restaurants and some establishments offering fine dining in UK and European cuisine.

“Despite more people looking for jobs in the hospitality industry, a third of businesses still find it difficult to recruit skilled chefs and the shortage of skilled chefs has actually worsened. 50 per cent of all chef vacancies are deemed to be hard to fill by employers.”

DCMS response to MAC call for evidence

- 6.89 When looking at the Chinese restaurant sector, we were told that a very small percentage of employers had registered as a sponsor under Tier 2 of the PBS. It would seem that, for whatever reason, this particular segment of the industry is managing to find the skilled labour required without immediately resorting to the shortage occupation list.
- 6.90 However, some employers in this occupation are making use of the shortage route. According to UKBA data, 575 certificates of sponsorship have been issued by employers for chefs under the shortage occupation route since the start of the new PBS in November 2008, through to August 2009. As a proportion of the total number of certificates issued under Tier 2 for this occupation, the shortage occupation list route accounted for 82.5 per cent. This occupation was ranked second highest in terms of the number of certificates issued for occupations under the shortage occupation list route.

- 6.91 One question we frequently put to stakeholders was whether the recession had reduced demand for chefs and, therefore, alleviated any labour shortages. The recession appears to have had an impact on the catering sector with some establishments closing and some reduction of staffing levels. However, we were told that employers were shedding unskilled workers first and retaining their skilled staff. It was therefore having little impact on shortages of skilled chefs.
- 6.92 Indeed, People 1st told us that the occupation of chefs/cooks as a whole has been resilient to the downturn and has seen an increase in numbers since 2006/07. Nonetheless, the LFS shows that the occupation workforce fell by 1.3 per cent to 251,635 in the year to 2009 Q1.
- 6.93 People 1st told us that the proportion of establishments with hard-to-fill vacancies for chefs stands at almost one-third (32 per cent). Similarly, half (50 per cent) of all chef vacancies were deemed to be hard to fill by employers. However, this was taken from the 2007 National Employers Skills Survey (NESS) which is a little old now and which we have excluded from our top-down analysis for this review on that basis.
- 6.94 People 1st also told us that, according to JCP figures, the monthly average for chef/cook vacancies in Great Britain stood at 7,315 in 2008, very similar to 2007. However, when we look at monthly figures for April and May 2009 these stood lower at 6,389 and 6,873 respectively.
- 6.95 Research by People 1st in 2009 showed that 30 per cent of employers reported recruitment difficulties for chefs or cooks; 67 per cent said they had no recruitment difficulties. The main reasons for difficulties
- were a general lack of applicants and a lack of applicants with the right level of experience or skill. The vast majority (90 per cent) of respondents who offer Asian/Oriental cuisine said they had a need to recruit from outside the EEA (compared with 52 per cent of respondents who offer British- or European-style food).
- 6.96 We also heard that there was a large pool of illegal workers in the UK, particularly working in Chinese cuisine. The Chinese sector told us that there could be tens of thousands of illegal employees working in the catering sector, although we are not in a position to refute or corroborate these claims. This poses a difficulty for us. We hear the argument that if we were to remove chefs from the shortage occupation list we would be removing perhaps the only legal route available for employers (given that most workers would not pass the general Tier 2 route entry criteria due to lack of qualifications and low pay). That may give employers more reason to be attracted to undocumented or illegal workers. While we understand this point, it does not provide a rationale for including skilled chefs on the shortage occupation list. Rather, it suggests that continued enforcement effort is required so that employment of illegal workers is minimised. We are in no doubt that this sector should not be employing illegal workers.

“Removing shortage status now could have some unfortunate consequences: some restaurateurs may replace ethnic chefs who leave the business with illegal workers.”

British Hospitality Association response to MAC call for evidence

- 6.97 The UKBA told us that by far the largest proportion of fines against employers for employing illegal workers lies within the restaurant and takeaway sector. This suggests that illegal working is indeed prevalent in this business area.
- 6.98 In relation to fine dining we accept that, for these establishments, the level of skill may not be readily available within the resident labour market and that up-skilling would take some time. We also heard evidence that some fine dining restaurant chains are seeking to expand despite the recession.
- 6.99 We received evidence from Visalogic, who represent a number of fine dining restaurants. They sent us letters from their clients stating that shortages were a real problem. Many of them cited the negative impact that not being able to access skilled chefs from outside the EEA would have on their businesses. Visalogic suggested implementing additional criteria for experience to better target those skilled chefs most in need.

“MAC could consider placing a stricter qualifying criterion ... such as applicants should have minimum demonstrable experience, as the current criterion does not request this.”

Visalogic response to MAC call for evidence

- 6.100 We now turn to our ‘sensible’ hurdle. In our autumn 2008 report we stated that we saw some merit in the argument that the labour shortage should be left alone so

that pay would rise, followed by a rise in the relative prices being charged. In turn, consumers would adjust their spending and some establishments might close as a result. The sector would end up smaller, stronger and with somewhat higher relative prices and relative pay. We still see value in this argument.

- 6.101 However, in autumn 2008, we also said that we were concerned that the adjustment and dislocation of the ethnic cuisine sector might be too sudden and severe if left unchecked. We also stated that the sector needed to take steps towards up-skilling the resident labour market and move away from reliance on immigrants. In asking stakeholders for evidence in relation to our sensible criteria, this time we specifically asked for information on what progress has been made.
- 6.102 It seems that only modest efforts have been made on up-skilling. People 1st told us that they have been working to achieve an increased supply of skilled chefs from the resident labour force in the last five years by developing more robust qualifications. People 1st led the development of the Diploma in Professional Cookery (at NVQ levels 1, 2 and 3) qualifications in order to improve the supply of skilled chefs.
- 6.103 The qualifications were rolled out at levels 1 and 2, with level 3 becoming available from September 2009. People 1st is working with the Learning and Skills Council to ensure that this is adequately funded. However, People 1st told us that it would take time for colleges to adopt the new qualifications. The number of learners projected for 2009/10 at level 3 is under 200. To put this in perspective there are, on our definition, approximately 75,000 skilled chefs.

6.104 A number of industry representatives took part in an Ethnic Chef Summit on 2 April 2009. The summit was organised jointly by government and industry and was chaired by the then Secretary of State for Innovation, Universities and Skills and attended by the Minister for Culture, Creative Industries and Tourism.

6.105 The aim of the summit was to seek agreement on how the industry and government can work together to attract talent from the resident labour market into the Asian and Oriental sector. The resulting action plan outlines a strategic approach to moving the Asian and Oriental catering sector away from its reliance on non-EEA immigrant labour and towards a demand that can be met from within the resident labour market. A second summit will be held in the autumn.

6.106 DCMS told us that they are now working with the industry and other Departments to support the actions arising from the summit and initiatives that have subsequently been identified, all of which are to be taken forward in a joint action plan to develop more talent from the UK. DCMS, however, said that this work will take some time and that there is also an issue of identifying appropriate funding.

6.107 Flowing from this, People 1st is taking forward a number of initiatives. The London Chinatown National Standards Training Project is being introduced as a pilot in partnership with various organisations. Part of the aim is to promote Chinese cooking as a skilled profession and increase the take-up of nationally recognised qualifications.

6.108 Chinese Catering Solutions has established itself as a training provider to deliver NVQ Apprenticeships to up-skill existing staff. A number of staff are

working through assessor training and NVQ candidates have been identified. Chinese Catering Solutions is also working to engage a broader range of businesses in the up-skilling initiative. However, this appears to lack some support from within the Chinese catering community. Indeed we are concerned that, despite the apparent enthusiasm exhibited by some, the initiative will not lead to tangible results.

6.109 The National Skills Academy for Hospitality is working closely with People 1st. The Academy has launched three new junior chef academies in the North West and is looking at an ethnic chef element. The Bangladesh Caterers Association UK has said it will try to establish a London School of Curry, but it is likely that non-EEA skilled chefs will be required for many more years. There are a number of other smaller initiatives working towards similar goals.

“Whilst People 1st, industry and other organisations have reacted proactively to the MAC’s call to raise the quality of locally available chefs, solutions for the Asian and Oriental market in particular are embryonic and it is too early for these solutions to have had an impact.”

People 1st response to MAC call for evidence

6.110 People 1st told us that, as a result of the machinery of the skills system and difficulties in changing cultures that have been in existence for generations, ensuring that qualifications are available, and taken up, by those working or wishing to work in Asian and Oriental restaurants will take a number of years to achieve.

6.111 The House of Commons Home Affairs Committee’s report *Managing Migration: The Points Based System (2009)* states:

“More attention needs ... to be paid to alternative ways to fill these shortages, including through the active recruitment of UK and EEA nationals. In this endeavour two aspects will be important: first, the provision of specific training in international cuisine skills within training courses in the UK; and second, an undertaking by the industry to improve the basic rate of pay and conditions attracted by the low-skilled jobs.”

- 6.112 There is clearly a potential tension between the argument to up-skill the resident population, with which few seem to disagree, and the argument that chefs need to have immersed themselves in the home culture of the cuisine. For the fine dining end the level of skill required is such that up-skilling may be only a potential or certainly a longer-term solution. For those chefs at the lower end of the skilled range, we believe that up-skilling has particular merit and encourage the sector to continue and accelerate the progress made. We accept that this will also rely on the desire of younger people to become chefs.
- 6.113 There is a substantial gap in terms of labour market participation rates between men and women from particular ethnic backgrounds. Therefore, one pool of labour which could be better tapped into is the female segment of the Bangladeshi, Indian and Chinese communities in the UK. LFS data on working-age employment rates by country of birth indicate that under half of such working-age women are in employment, and for Bangladeshi women the equivalent figure is under a quarter.
- 6.114 Having carefully considered this occupation, we recommend that skilled chefs remain on the shortage occupation list, at least for the short term. Evidence received from the Government seems to support this decision. We welcome and recognise their efforts to up-skill the resident population and would not wish to undermine them at this early stage.
- 6.115 However, for our autumn 2010 review the sector will have to demonstrate thoroughly that it is sensible for skilled chefs to remain on the shortage occupation list, assuming there is still a shortage at that time. Our concerns regarding the sensible hurdle include the following:
- There is a lot of talk about up-skilling the native workforce, but it seems to be yielding little so far in terms of concrete results: the predicted flow of newly skilled ethnic chefs seems tiny relative to the total stock of skilled chefs. Greater effort is required, particularly concerning the untapped pool of female labour.
 - The argument concerning illegal working is disingenuous. It may be true that removing chefs from the shortage list would provide some further incentive to employ illegal workers, but this misses the point. Such illegal workers should not be employed in the first place.
 - There appears to be a belief among the ethnic hospitality stakeholders that the sector must always remain at its present size or grow, but never shrink. We do not share this view. It can equally be argued that use of immigrant workers depresses wages – consumers are in effect getting lower prices from the ‘subsidy’ provided by the lower wages. Less use of immigrant labour would raise pay and relative prices and result in a smaller, more robust ethnic restaurant sector. The ethnic restaurant sector will wish to reflect on the fact that immigration exists to help the sector, rather than the existence of the sector being a rationale for continued immigration.

- 6.116 Unless these arguments are seriously addressed the Committee is minded to remove skilled chefs from the shortage list in autumn 2010 on the basis that it will no longer be sensible to include them.
- 6.117 Much of the evidence we received in relation to skill focused on the need for experienced staff and, therefore, we see value in adding an additional experience criterion to help better define those workers who we believe fall into the skilled category. People 1st laid out for us the average length of experience required for chefs in different skilled specialities to become skilled. The majority of specialities required, as a very minimum, three years and for many it was considerably longer. We therefore believe that three years' relevant experience should be set as a minimum.
- 6.118 In conclusion, we believe that skilled chefs should remain on the shortage occupation list for the time being with the skill pay threshold of £8.45 per hour, and with the new requirement for three years' relevant experience.

6.12 Work riders

Box 6.12: Work riders

Occupation(s) and SOC code(s): Animal care occupations n.e.c. – 6139

Only the following job title within this occupation is included on our recommended shortage occupation list:

Work rider (should have at least three years' relevant paid experience (with work responsibilities covering those acquired in a level 3 NVQ in Horse Care and Management or Racehorse Care and Management) and the trainer should have submitted a registration form to the British Horseracing Authority (BHA) for the individual).

Top-down data:

The top-down data relating to this SOC code are not relevant as we are only dealing here with the skilled subset of an occupation that, as a whole, does not meet our skill criteria.

Stakeholder evidence:

We received evidence from the National Trainers Federation (NTF).

- 6.119 Work rider is not a job title within the SOC. Related job titles are groom attendant (racing stables), stable helper and stable boy/girl. These fall within the 6139 classification, which is unskilled in our top-down analysis. However, in autumn 2008 we based our assessment of the skill level for work riders on bottom-up evidence and continue to do so.
- 6.120 In autumn 2008 we concluded that work riders were skilled and that there were insufficient numbers trained or having the personal attributes required and, therefore, that it was sensible to allow employers to recruit non-EEA workers into skilled posts. In the last 12 months, little has changed.
- 6.121 In responding to our call for evidence, the NTF provided previously submitted evidence that has not changed, previously submitted evidence that has been updated, and new evidence.
- 6.122 We were told that the most important parts of a work rider's job are the ability to ride Thoroughbred horses at exercise and to inform the trainer about the

individual horse's health, fitness, aptitude and characteristics, so the trainer is able to make the right judgment about the appropriate racing programme for the horse to maximise its potential. They have to exercise the horses without causing injury or undue stress, to ensure they are in top physical condition prior to racing.

"In the handling and riding of Thoroughbred racehorses, unskilled and/or inexperienced staff may be a danger to themselves and others as well as putting at risk the welfare of the horses."

NTF response to MAC call for evidence

- 6.123 During the review of work riders for our autumn 2008 report, we visited two training yards and experienced at first hand the skills required to exercise Thoroughbred racehorses.
- 6.124 Previously, we also looked at work carried out by the UKBA on work riders. This led us to support the view that skilled work riders would have three years' relevant experience (with work responsibilities covering those acquired in a level 3 NVQ in Horse Care and Management or Racehorse Care and Management). We believe these are still reasonable criteria and, therefore, that there should be documented evidence of at least three years' relevant paid experience for this job to be skilled.
- 6.125 We also recommended that work riders were registered with the BHA. We understand this has caused some problems in that work riders cannot be so registered until they are actually working in the UK. We therefore amend our recommendation to require that the trainer has submitted a registration form (SER1) for the individual to the BHA.
- 6.126 Turning to shortage, we were told that the workforce is now expected to service an even greater number of fixtures held throughout the year. The NTF said that, in 2002, 1,233 fixtures were programmed and that in 2009 this had risen to 1,480. In addition, fixtures are increasingly placed at times that are convenient to customers (i.e. bookmakers, punters and racegoers). Therefore, working hours are often anti-social.
- 6.127 A BHA training-needs analysis in 2007 found that 65 per cent of respondents had difficulties in recruiting. The pool from which trainers recruit in the resident labour market is getting smaller due to changing career expectations, increased demand for further education, and a population which is becoming physically larger and heavier and, therefore, unsuitable for riding young Thoroughbreds.
- 6.128 The NTF presented evidence that, since 1972, the average weight of the UK population has risen by 5.9kg. Less than 9 per cent of the UK male population aged 18 or over weigh 57.2kg or below. The figure for the female population is still under 50 per cent. We heard that 57.2kg represents the optimal maximum required for exercise work on Thoroughbred racehorses. Veterinary advice is that the risk of injury to the horse rises as the weight of the rider rises.
- 6.129 The NTF also made the point that there is a limit to possibilities of expanding the female proportion of the workforce due to the job's physical demands (i.e. the strength required to ride and handle some horses).

“It can therefore be seen that one of the main reasons for the shortage of suitable work riders is the scarcity of people who meet the weight criteria but also that this trend is irreversible so the shortage is only going to become more acute in the future.”

NTF response to MAC call for evidence

6.130 The NTF also told us that the care and exercise of racehorses is a young person’s occupation due to the physical and psychological demands of handling young, fit animals, and also, as we have already discussed, the need for riders to be light in weight. The number of young people leaving school in Britain has fallen due to a number of factors, including lower birth rates and demand for further education. We were told that migrant workers recruited for British horseracing not only have innate ability, but also the required physical characteristics.

“The Resident Labour Market Test continually shows that advertised vacancies for work riders in trainers’ stables are not being met from within the UK or EEA.”

NTF response to MAC call for evidence

6.131 The industry has not undertaken detailed surveys of pay or hours worked since our review in 2008. However, a 5 per cent increase in basic minimum pay rates was agreed by the NTF and the National Association of Stable Staff in November 2008.

6.132 The NTF also provided information on the economic downturn in relation to the industry. Here we see that there has been a marginal effect, with the total number of registered stable employees at April being 7,397, down 127 from the figure of 7,524 in 2007.

6.133 In relation to sensible, we are aware that there are two racing schools at Doncaster and Newmarket and that the industry has its own awarding body for vocational qualifications (the British Horseracing Education and Standards Trust) and an industry-wide mandatory training programme. However, despite the efforts to recruit young people from the resident labour market, shortages still exist.

“... the opportunity to mechanise operations to reduce labour requirements is not only extremely limited with regard to general stable duties but in respect of work riding, it is completely out of the question.”

NTF response to MAC call for evidence

6.134 In 2005, the British Horseracing Board (now succeeded by the BHA) took overall responsibility for recruitment. Its aims are to raise the profile of the industry and increase the flow of applicants. Despite these efforts the industry finds it impossible to meet demand. NTF told us they thought around 24 per cent of registered work riders are of non-EEA origin.

6.135 We recommend that work riders who have at least three years’ paid experience in this job, at a level equivalent to NVQ level 3, remain on the shortage occupation list. We also recommend that it is a requirement that the trainer has submitted a registration form (SER1) for the individual to the BHA.

6.13 Sheep shearers

Box 6.13: Sheep shearers

Occupation(s) and SOC code(s): Fishing and agriculture-related occupations n.e.c. – 9119

Only the following job title within these occupations is included on our recommended shortage occupation list:

Sheep shearer (individual must hold the British Wool Marketing Board (BWMB) bronze medal (or equivalent) or above).

Top-down data:

The top-down data relating to this SOC code are not relevant as we are only dealing here with the skilled subset of an occupation that, as a whole, does not meet our skill criteria.

Stakeholder evidence:

We received evidence from the National Association of Agricultural Contractors (NAAC).

- 6.136 Sheep shearer is a job title within the SOC code 9119 for fishing and agriculture-related occupations n.e.c. (not elsewhere classified), which is unskilled in our top-down analysis. However, we do not regard this as highly relevant in the case of sheep shearers and have based our assessment of skill for this job on bottom-up evidence.
- 6.137 We reviewed this occupation for our autumn 2008 report and recommended it for inclusion on the shortage occupation list. Due to the nature of this occupation, we did not expect the situation to change significantly, and indeed it has not.
- 6.138 We received evidence from the NAAC who told us that the job is skilled to NVQ level 3. To obtain entry into the UK, sheep shearers are required to have at least the BWMB bronze medal (or equivalent) or higher. We understand the bronze award is rated as equivalent to a level 3 qualification. In addition, last time we also considered that the job met the skill criteria by virtue of the manual dexterity and experience required rather than solely through qualifications and training. We continue to be of this view.
- 6.139 In our autumn 2008 report, we also made it a requirement that to prove skill, the shearer must have worked at bronze award standard for at least three years. Although we did not review sheep shearers for our spring 2009 report, we later received evidence that the experience requirement was too restrictive and would have created problems for the 2009 shearing season. We therefore amended our recommendation in spring 2009 to remove the experience element.
- 6.140 For this report we again received evidence from the NAAC: shortages continue to exist because of the nature of the job. NAAC told us that despite the UK's BWMB training courses for UK shearers, there continues to be a world shortage of skilled shearers. While the BWMB carries out shearing courses, these tend to be taken up by farmers and smallholders wishing to shear their own, relatively small, flocks. This, says the NAAC, leaves insufficient shearers resident in the UK.

“... in the UK there are a limited number of skilled shearers who are able to shear to a high standard at speed. This resource is totally insufficient to meet the needs of the industry.”

NAAC response to MAC call for evidence

6.141 The NAAC told us that they seek professional shearers who are capable of operating at high speeds (up to 400 sheep a day) and to a high standard. Due to the seasonal nature of the job, many shearers operate internationally, moving between the UK, Australia, New Zealand and the USA. This allows them to fill work demands while retaining a high level of skill and experience. Therefore, these shearers are not migrating to the UK with the intention of staying for any great length of time.

“These shearers will only stay in the UK for the necessary shearing season.”

NAAC response to MAC call for evidence

6.142 Turning to sensible, the NAAC said that they used to advertise for UK shearers in the farming press on behalf of members, but it was rare to get any response. The BWMB course does not provide shearers in the numbers required and with the skill and experience of overseas shearers.

6.143 The NAAC said that around 500 overseas shearers come to the UK each year to carry out 20–25 per cent of UK shearing (approximately 5–6 million sheep). Shearing is an essential operation to protect sheep from fly strike and to stop animals overheating during hot summer months.

6.144 We are, therefore, sufficiently satisfied that failure to recruit skilled individuals from outside the EEA will have a serious

impact on the sheep shearing industry. We recommend this occupation for retention on the shortage occupation list.

6.14 Managers in construction and quantity surveyors

6.145 In our spring 2009 update of the shortage occupation list, we recommended the suspension from the shortage occupation list of the overall SOC code for managers in construction (SOC code 1122), and within this the job title project managers for property development and construction; and the occupation of quantity surveyors (SOC code 2433). We did so because we had been monitoring the labour market situations for those construction occupations included on the list in autumn 2008. We found that, in relation to the job title project managers for property development and construction, and the occupation of quantity surveyors, the JCP data indicated that the unemployment count had risen rapidly relative to other occupations and that vacancies had fallen. We took this to mean that the job title project managers for property development and construction, and the occupation of quantity surveyors, were no longer experiencing a shortage.

6.146 We consulted with the Royal Institution of Chartered Surveyors (RICS), which made the original submission for both occupations to be on the list. RICS agreed with our course of action.

6.147 We made a commitment to carry out a full review of this occupation in this report. In response to our call for evidence, RICS informed us that, because the industry is still suffering from falling workloads, they feel it would be prudent to defer the consideration of these occupations for inclusion on the shortage list until

- more visible signs of a recovery can be substantiated.
- 6.148 We also received evidence from ConstructionSkills that the number of unemployed construction workers has soared during the first half of 2009, while the number of vacancies in construction has dropped during the same period. This, they said, would suggest that labour and skills shortages are not a significant issue for the industry as a whole.
- 6.149 Our analysis of the top-down data corroborates the RICS and ConstructionSkills views. Both project managers in property development and construction and quantity surveyors only passed on 1 out of 9 valid shortage indicators: a very low number which strongly indicates that there are no shortages in these occupations.
- 6.150 RICS said that any lack of quantity surveyors or project managers in property development and construction would pose a threat to regeneration and development schemes, including the Government's targets for housing, improving the rail network and delivering the London 2012 Olympic and Paralympic Games on time and on budget. They told us that some leading house-building companies have indicated that they may resume house building in the second half of this year.
- 6.151 We do not recommend the reinstatement of project managers in property development and construction or quantity surveyors on the shortage occupation list. However, if RICS or other relevant stakeholders are able to provide us with the evidence to do so, we will attempt to consider these occupations again in our autumn 2010 review.

7.1 Introduction

7.1 In between our reviews of the shortage occupation list we did receive approaches from employers and organisations asking that we review other occupations in addition to those we announced would be reviewed. In the main these requests were not backed by strong evidence and, therefore, we did not undertake a review of the occupations. In the case of fishermen, however, we did receive evidence and met with representative organisations. However, for the reasons set out below, we decided not to review the occupation at this time. We also discuss briefly some issues around the definition of orchestral musicians on the shortage occupation list.

7.2 Fishermen

7.2 We met with the National Federation of Fishermen's Organisations and the Scottish Fishermen's Federation about shortages in the fishing industry. We also received a submission of evidence from Mackinnons Solicitors acting on behalf of the Scottish Fishermen's Federation. In addition we received an email of support from Fergus Ewing MSP.

7.3 Fishermen were not included on the list of occupations we previously announced we were going to review for this report, but we

were asked to include them in this review. However, after careful consideration, we have decided that we will not review them on this occasion, but will review them for our next report in spring 2010.

7.4 Because the assertions of shortage related specifically to the Scottish fishing industry, and because the relevant occupation (food, drink and tobacco process operatives – SOC code 8111) is unskilled, top-down data will not be relevant to this occupation. This means that a detailed examination of the bottom-up evidence would be required in order to carefully assess whether all, or some, fishermen are skilled; whether there is a shortage of skilled workers; and whether it would be sensible to address the shortage using immigrant labour from outside the European Economic Area (EEA). The issues surrounding the fishing industry are complex and we did not feel we had the time available to give the occupation as detailed a review as we would like. We believe it would not have been fair on the industry to have done so.

7.5 In addition, we understand that the industry is currently working with the UKBA to resolve issues around some non-EEA fishermen working on transit visas. As these discussions will have an impact on the substance of our review it makes sense that these discussions are concluded prior to conducting our review.

7.3 Musicians

7.6 Following the inclusion of orchestral musicians on our shortage occupation list in April 2009, we received representations from the Musicians' Union that, for the purposes of the shortage occupation list, we had defined orchestral musicians too broadly. We approached the Association of British Orchestras (ABO) who told us that they were content with our decision. As these initial discussions did not lead to an immediate consensus between the two bodies, we decided to leave orchestral musicians, as previously defined, on the shortage occupation list prior to a full review by spring 2010. We will liaise further with the union and the ABO on this matter.

Chapter 8: Results

8.1 Introduction

8.1 Here we draw together the reviews of individual occupations covered in Chapters 4–7 to provide the recommended shortage occupation list for the UK under Tier 2 of the Point Based System (PBS).

8.2 The UK shortage occupation list

8.2 Before providing the full recommended shortage occupation list we outline the key changes compared with the current list. First, we recommend that the following **additions** be made to the shortage occupation list along with the relevant 4-digit Standard Occupational Classification (SOC) code:

- project managers within the electricity transmission and distribution industries (1121);
- site managers, station managers, shift/group leaders within the electricity transmission and distribution industry (1123);
- mechanical engineers in the electricity transmission and distribution and the electricity generation industries (2122);
- electrical engineers in the oil and gas industry and power system engineers, control engineers, protection engineers, project control engineers, control and instrumentation engineers, assistant engineers, electrical engineers within the electricity transmission and distribution industry (2123);
- design engineers within the electricity transmission and distribution industry (2126);
- plant process engineers within the electricity generation industry (2127);
- planning/development engineers and quality, health, safety and environment engineers within the electricity transmission and distribution industry (2128);
- project engineers and proposals engineers within the electricity transmission and distribution industry (2129);
- higher-level speciality trainee posts in paediatrics (ST4 level) (2211);
- non-consultant, non-training, medical staff posts in general internal medicine (acute) (2211);
- pre-registration pharmacists working in the NHS and hospitals (2213);
- all teaching posts in special schools (2316);
- commissioning engineers (3113);
- production controllers in the electricity generation industry (3119);
- licensed and military certifying engineers/inspector technicians and airframe fitters (5223);
- site supervisors within the electricity transmission and distribution industries (5249); and
- skilled meat boners and meat trimmers (5431).

- 8.3 Second, we recommend that the following **amendments** be made to the shortage occupation list:
- Simplified list of relevant job titles under the physicists, geologists and meteorologists occupation (2113).
 - Previously we listed a number of nurse specialities in connection with operating theatre work. We now describe the same group of jobs as ‘specialist nurses working in operating theatres’ (3211).
 - Previously we included nurses working in critical care units with a level 2 or level 3 classification). We amend this to nurses working in neonatal intensive care units only (3211).
 - Previously we included overhead linesworkers. We amend this to overhead linesworkers within the electricity transmission and distribution industries only (5243).
 - We introduce a three-year experience requirement for skilled chefs (5434).
 - We have made a slight change in the licencing arrangement for work riders (6139).
 - We amend the skill definition of ballet dancers (3414).
- 8.4 Third, we recommend that the following occupations and job titles are **removed** from the shortage occupation list:
- most civil engineers, leaving only those job titles listed in Table 8.1 (2121);
 - consultants in chemical pathology (2211);
 - consultants in child and adolescent psychiatry (2211);
 - consultants in clinical neurophysiology (2211);
 - consultants in clinical pharmacology and therapeutics (2211);
 - consultants in dermatology (2211);
 - consultants in immunology (2211);
 - consultants in intensive care medicine (2211);
 - consultants in paediatrics (2211);
 - consultants in plastic surgery (2211);
 - consultants in renal medicine (2211);
 - clinical psychologists (2212);
 - consultants in orthodontics (2215);
 - Health Professions Council (HPC) registered ophthalmic and vision scientists (2112);
 - aircraft component manufacturing engineers (3113); and
 - ship and hovercraft officers (3513).
- 8.5 We also confirm the recommended removal of project managers in property development and construction and quantity surveyors.
- 8.6 Incomplete data mean that it is difficult to produce a precise figure, but based on the Labour Force Survey and bottom-up evidence, we estimate that jobs and occupations on our revised list employ fewer than 500,000 people in the UK, accounting for less than 2 per cent of total employment in the UK. This estimate relates to the number of people (immigrants and non-immigrants) currently working in these occupations and job titles. It does not indicate potential flows of immigrants into job titles and occupations on the list, nor the number of vacancies currently available. The figure of under 500,000 compares with over 1 million on the original shortage occupation list produced for the old work permit system by the UKBA; 700,000 on our original recommended lists in autumn 2008; and 530,000 on our recommended lists in spring 2009.
- 8.7 Our updated recommended shortage occupation list for the UK is set out in Table 8.1. The Government will announce in due course whether it accepts our recommendations.

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Production, works and maintenance managers (1121)	ONLY the following job title within this occupation: project manager within the electricity transmission and distribution industry	Review autumn 2010
Managers in mining and energy (1123)	ONLY the following job titles within this occupation: site manager, station manager, shift/group leader within the electricity transmission and distribution and the electricity generation industries	Review autumn 2010
Civil engineers (2121)	ONLY the following job titles within this occupation: geotechnical engineer, geotechnical design engineer, geotechnical specialist, reservoir panel engineer, rock mechanics engineer, soil mechanics engineer, geomechanics engineer, tunnelling engineer, petroleum engineer, geoenvironmental engineer, contaminated land engineer, drilling engineer, completions engineer, fluids engineer, reservoir engineer, status resource engineer, offshore and subsea engineer, control and instrument engineer, process safety engineer, planning drilling engineer, subsurface engineer, project civil engineer in the electricity generation industry and contaminated land engineer	Review autumn 2010
Mechanical engineers (2122)	ONLY the following job title within this occupation: mechanical engineer in the electricity transmission and distribution and the electricity generation industries	Review autumn 2010
Biological scientists and biochemists (2112);	ONLY the following job titles within this occupation: cardiac physiologist, clinical neurophysiologist, clinical vascular scientist, respiratory physiologist and sleep physiologist	Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (*continued*)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Physicists, geologists and meteorologists (2113)	ONLY the following job titles within this occupation: engineering geologist, hydrogeologist, geophysicist, geoscientist, geophysical specialist, engineering geophysicist, and engineering geomorphologist, nuclear medicine scientist and radiotherapy physicist. Also staff working in diagnostic radiology (including magnetic resonance imaging)	Review autumn 2010
Electrical engineers (2123)	ONLY the following job titles within this occupation: electrical engineer in the oil and gas industry and power system engineer, control engineer, protection engineer, project control engineer, control and instrumentation engineer, assistant engineer, electrical engineer within the electricity transmission and distribution industry	Review autumn 2010
Chemical engineers (2125)	ALL jobs within this occupation	Review autumn 2010
Design and development engineers (2126)	ONLY the following job title within this occupation: design engineer within the electricity transmission and distribution industry	Review autumn 2010
Production and process engineers (2127)	ONLY the following job title within this occupation: plant process engineer within the electricity generation industry	Review autumn 2010
Planning and quality control engineers (2128)	ONLY the following job titles within this occupation: planning/development engineer and quality, health, safety and environment engineer within the electricity transmission and distribution industry	Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (continued)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Engineering professionals n.e.c. (2129)	ONLY the following job titles within this occupation: project engineer, proposals engineer within the electricity transmission and distribution industry	Review autumn 2010
Medical practitioners (2211)	<p>ONLY the following job titles within this occupation: consultants within the following specialities: audiological medicine, genitourinary medicine, haematology, medical microbiology and virology, neurology, nuclear medicine, obstetrics and gynaecology, occupational medicine, paediatric surgery</p> <p>Consultants within the following specialities of psychiatry: forensic psychiatry, general psychiatry, learning disabilities psychiatry and old-age psychiatry</p> <p>Also non-consultant, non-training, medical staff posts in the following specialities: anaesthetics, paediatrics and general medicine specialities delivering acute care services (intensive care medicine, general internal medicine (acute), emergency medicine, general surgery, obstetrics and gynaecology, and trauma and orthopaedic surgery)</p> <p>Also ST4 level trainees in paediatrics</p>	Review autumn 2010
Pharmacists/ pharmacologists (2213)	ONLY the following job titles within this occupation: registered pharmacist working in the NHS or hospitals (including pre-registration pharmacist working in the NHS or hospitals)	Review autumn 2010
Dental practitioners (2215)	ONLY the following job title within this occupation: consultant in paediatric dentistry	Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (*continued*)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Veterinarians (2216)	ONLY the following job title within this occupation: veterinary surgeon	Must be registered as a member of the Royal College of Veterinary Surgeons (RCVS) to work in the UK Review autumn 2010
Secondary education teaching professionals (2314)	ONLY the following job title within this occupation: secondary education teacher within the subjects of maths or science	Review autumn 2010
Special needs education teaching professionals (2316)	ONLY the following job title within this occupation: all teaching posts in special schools	Review autumn 2010
Social workers (2442)	ONLY the following job title within this occupation: social worker working in children's and family services	Review autumn 2010
Nurses (3211)	ONLY the following job titles within this occupation: specialist nurse working in operating theatres, operating department practitioner and specialist nurse working in neonatal intensive care units	Review autumn 2010
Engineering technicians (3113)	ONLY the following job title within this occupation: commissioning engineer	Review autumn 2010
Science and engineering technicians n.e.c. (3119)	ONLY the following job title within this occupation: production controller in the electricity generation industry	Review autumn 2010
Medical radiographers (3214)	ONLY the following job titles within this occupation: HPC registered diagnostic radiographer, HPC registered therapeutic radiographer and sonographer	Review autumn 2010
Medical and dental technicians (3218)	ONLY the following job titles within this occupation: nuclear medicine technologist and radiotherapy technologist	Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (continued)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Speech and language therapists (3223)	ONLY the following job title within this occupation: speech and language therapist (Agenda for Change bands 7+ or their independent sector equivalents)	Review autumn 2010
Therapists n.e.c. (3229)	ONLY the following job title within this occupation: HPC registered orthoptist	Review autumn 2010
Dancers and choreographers (3414)	ONLY the following job titles within this occupation: skilled classical ballet dancer and skilled contemporary dancer	For this job to be skilled, classical ballet dancers must meet the standard required by internationally recognised UK ballet companies (e.g. Birmingham Royal Ballet, English National Ballet, Northern Ballet Theatre, The Royal Ballet and The Scottish Ballet). For operational purposes the type of factors to be taken into account may include whether the company has performed at or has been invited to perform at venues of the calibre such as the Royal Opera House, Sadler's Wells or the Barbican, either in the UK or overseas; attracts dancers and/or choreographers and other artists from other countries; and is endorsed as being internationally recognised by a UK industry body such as the Arts Councils (of England, Scotland and/or Wales)

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (*continued*)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Dancers and choreographers (3414) (<i>continued</i>)		<p>Skilled contemporary dancers must meet the standard required by internationally recognised UK contemporary dance companies (e.g. Shobana Jeyasingh Dance Company, Scottish Dance Theatre and Rambert Dance Company). For operational purposes the type of factors to be taken into account may include whether the company has performed at or has been invited to perform at venues of the calibre of Sadler's Wells, either in the UK or overseas; attracts dancers and/or choreographers and other artists from all over the world; and is endorsed as being internationally recognised by a UK industry body such as the Arts Councils (of Scotland, Wales and/or England)</p> <p>Review autumn 2010</p>
Musicians (3415)	ONLY the following job title within this occupation: skilled orchestral musician	<p>For this job, the skilled orchestral musician must meet the standard required by internationally recognised companies (e.g. London Symphony Orchestra, London Philharmonic Orchestra, Philharmonia Orchestra and Royal Philharmonic Orchestra)</p> <p>Review spring 2010</p>

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (continued)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Photographers and audio-visual equipment operators (3434)	ONLY the following job titles within this occupation: roles within visual effects and 2D/3D computer animation for film, television or video games: animation supervisor, animator, computer graphics supervisor, technical director, CG supervisor, modeller, rigging supervisor, rigger, matte painter, texture artist, compositing artist, producer, production manager, editor, R&D tools, R&D software, software engineer, system engineer	Review autumn 2010
Welding trades (5215)	ONLY the following job title within this occupation: high integrity pipe welder	Three or more years' documented evidence of related on-the-job experience Review autumn 2010
Metal working production and maintenance fitters (5223)	ONLY the following job title within this occupation: licensed and military certifying engineer/inspector technician and airframe fitter	Review autumn 2010
Line repairers and cable jointers (5243)	ONLY the following job title within this occupation: overhead linesworker within the electricity transmission and distribution industry	Review autumn 2010
Electrical/electronics engineers n.e.c. (5249)	ONLY the following job title within this occupation: site supervisor within the electricity transmission and distribution industry	Review autumn 2010
Butchers, meat cutters (5431)	ONLY the following job titles within this occupation: skilled meat boner and skilled meat trimmer	'Skilled' requires that the individual is earning at least £9.00 per hour Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (continued)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Chefs, cooks (5434)	ONLY the following job title within this occupation: skilled chef	‘Skilled’ requires that the individual is earning at least £8.45 per hour after deductions for accommodation, meals etc. Also three years’ relevant experience is required Review autumn 2010
Care assistants and home carers (6115)	ONLY the following job title within this occupation: skilled senior care worker	‘Skilled’ requires that the individual is earning at least £7.80 per hour after deductions for accommodation, meals etc, and has a relevant NQF level 2 qualification, two years’ relevant experience and will have supervisory responsibilities OR there is a requirement for a senior care worker to be qualified at NQF level 3 or above (currently only the case in Scotland and Wales) Review autumn 2010

Table 8.1: Recommended UK shortage occupation list for Tier 2 of the Points Based System, September 2009 (continued)

Related occupation title and SOC code (see notes 1 and 2)	Job titles included on the shortage occupation list	Other information: skill levels and review timescales (see note 3)
Animal care occupations n.e.c. (6139)	ONLY the following job title within this occupation: skilled work rider	Must be documentary evidence that individual has at least three years' relevant paid experience (with work responsibilities covering those acquired in a level 3 NVQ in Horse Care and Management or Racehorse Care and Management) and the trainer should have submitted a registration form (SER1) to the British Horseracing Authority for the individual Review autumn 2010
Fishing and agriculture-related occupations n.e.c. (9119)	ONLY the following job title within this occupation: skilled sheep shearer	Individual must hold British Wool Marketing Board bronze medal (or equivalent) or above Review autumn 2010

Notes:

(1) n.e.c. stands for 'not elsewhere classified'.

(2) For official job descriptions relating to 4-digit occupations in SOC2000, see www.statistics.gov.uk/methods_quality/ns_sec/downloads/SOC2000_Vol1_V5.pdf.

(3) Timings are indicative. We may review any occupation at any time.

Chapter 9: **Scotland**

9.1 Introduction

9.1 In addition to producing a shortage occupation list to cover the whole of the UK, the Government also asks that we produce a separate list covering Scotland. The Government identified the need for Scotland to have a separate list to address the specific changing demographic profile and projected decline in the population within that country at the time when the MAC was set up. This chapter provides an overview of Scotland's economy, followed by a detailed discussion of the occupations for which we have received evidence. Section 9.4 presents the updated recommended shortage occupation list for Scotland.

9.2 The Scottish economy and labour market

Macro-economy and demography

9.2 The Scottish economy entered recession in the third quarter of 2008, with gross domestic product (GDP) contracting by 5.2 per cent to the first quarter of 2009. In contrast, the UK economy entered recession one quarter earlier.

9.3 The Scottish Independent Treasury Economic Model (ITEM) Club (2009) expects contraction of Scotland's GDP of 3.1 per cent in 2009 (compared with contraction of 4.4 per cent for the UK as a whole), followed by stagnation in 2010 and growth of 1.7 per cent in 2011.

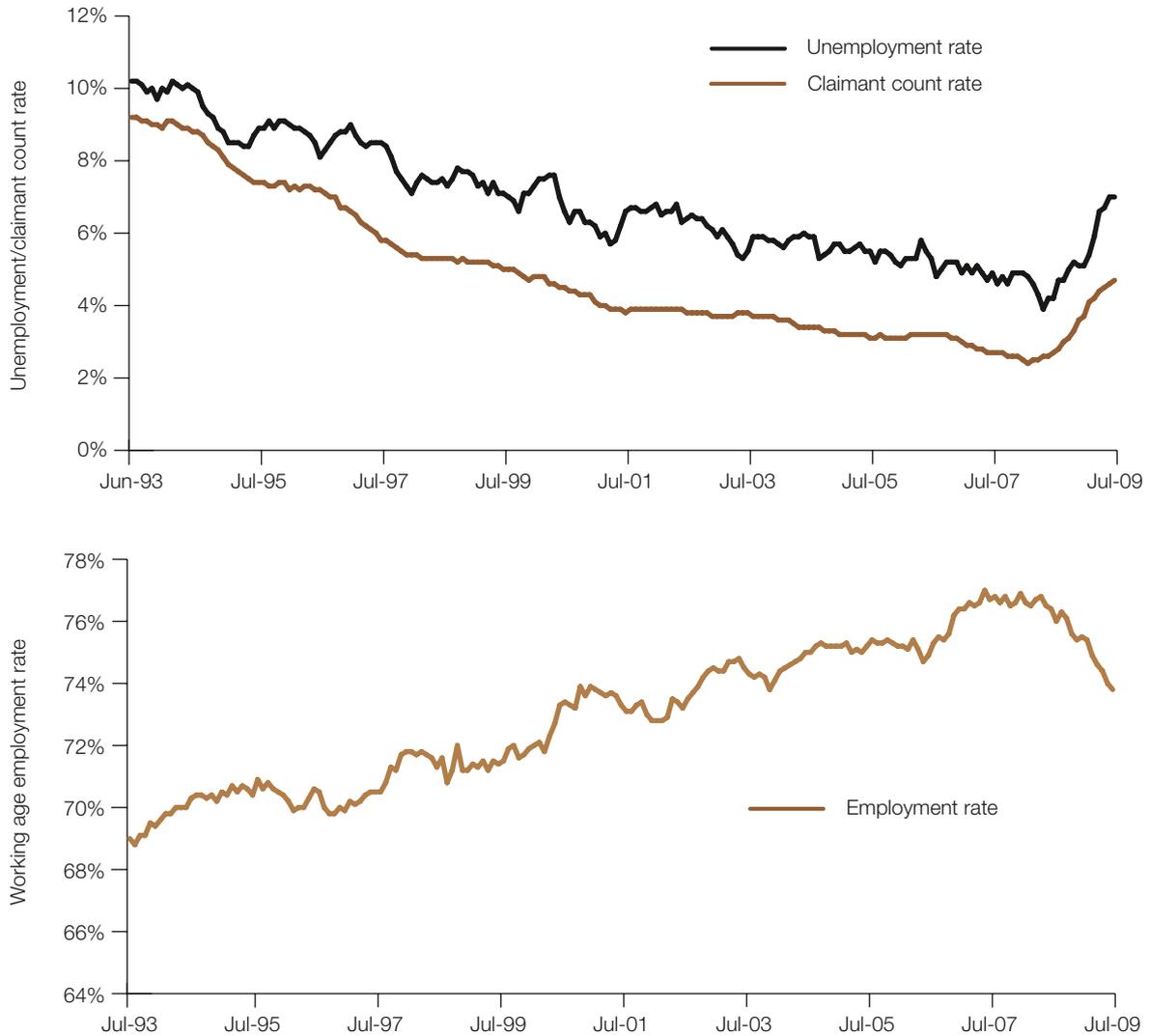
9.4 The mid-year estimate of the Scottish population for 2008 was 5.17 million – up 2.2 per cent on 5 years ago. The population is expected to grow by 1.5 per cent over the next 5 years, compared with 3.6 per cent for the UK as a whole (Government Actuary's Department (GAD), 2009).

9.5 In 2008, 62.6 per cent of the total population (or 3.24 million) were of working age in Scotland – up 2.6 percentage points on 5 years ago – compared with 62.0 per cent for the UK as a whole. The working age population is expected to grow by 1.4 percentage points over the next 5 years, compared with 3.9 percentage points for the UK as a whole (GAD, 2009).

Labour market

9.6 Figure 9.1 shows that the working age employment rate in Scotland was 73.8 per cent in the three months to July 2009 (compared with 72.5 per cent for the UK as a whole), down from a high of 77.0 per cent in the three months to June 2007. The unemployment rate was 7.0 per cent in the three months to July 2009 (compared with 7.9 per cent for the UK as a whole), up from a low of 3.9 per cent in the three months to May 2008. Finally, the claimant count rate was 4.7 per cent in July 2009 (compared with 5.0 per cent for the UK as a whole), almost double the recent low of 2.4 per cent in February 2008.

Figure 9.1: Unemployment rate and working age employment rate, Scotland, May–Jul 1993 to May–Jul 2009. Claimant count rate, Scotland, Jul 1993 to Jul 2009



Note: seasonally adjusted. The employment and unemployment rates are those calculated in the three months to the date shown. The employment rate is calculated from the Labour Force Survey (LFS) and is given by the number of working age individuals who did at least one hour's paid work in the week prior to their LFS interview, or has a job that they are temporarily away from, as a proportion of the working age population. The claimant count consists of all people between the ages of 18 and State Pension age claiming Jobseeker's Allowance at Jobcentre Plus local offices. They must declare that they are out of work, capable of, available for and actively seeking working during the week in which their claim is made. The claimant count rate is the number of resident claimants expressed as a percentage of the sum of claimants and workforce jobs (mid-year estimates are used). The definition of unemployment is internationally agreed and recommended by the International Labour Organisation, where every individual aged 16 or over is classified as either in employment, unemployed or economically inactive. Individuals are defined as unemployed if they are without a job, want a job, have actively sought work in the last four weeks and are available to start work in the next two weeks; or are out of work, have found a job and are waiting to start it in the next two weeks. The unemployment rate is calculated from the LFS and is given by the proportion of the economically active population (those who are in employment or unemployment) who are unemployed. The July 2009 claimant count figure is provisional.
 Source: Office for National Statistics, 2009d

- 9.7 In 2008, Futureskills Scotland carried out the biennial skills survey of Scottish employers, comprising around 6,300 employers. The survey is around one-tenth the size of the National Employer Skills Survey (the UK equivalent), and so reliable results cannot be obtained at a more disaggregated occupational level than at 1 digit on the Standard Occupation Classification (SOC).
- 9.8 Although the effects of the economic downturn were not yet at their most severe at the time of fieldwork, the results of the analysis on the challenges facing businesses in the coming year indicate that the recession has played a part in setting the economic context for employers' responses. The most frequently cited challenge for the next 12 months was 'cash flow', while the second most frequently cited challenge was the 'downturn in the economic climate'. However, 'attracting appropriately skilled staff' was cited by a similar proportion of employers as in previous waves of the survey.
- 9.9 Table 9.1 shows the number of employees and vacancy rates by major occupation group as calculated from the Futureskills Scotland Scottish Employer Survey (2008). The highest proportion of vacancies, hard-to-fill vacancies and skill shortage vacancies were all in associate professional and technical occupations, while the lowest rates were all in managerial and senior official occupations.

Table 9.1: Vacancy employee rates by occupation

	Number of employees (000s)	Vacancies as a percentage of employment	Hard-to-fill vacancies as a percentage of employment	Skill shortage vacancies as a percentage of employment
Managers and senior officials	264	1.5	0.9	0.2
Professional occupations	366	2.0	1.1	0.4
Associate professional and technical occupations	207	6.5	3.6	2.4
Administrative and secretarial occupations	310	2.9	1.0	0.7
Skilled trades occupations	205	3.6	2.2	0.8
Personal service occupations	173	3.9	1.5	0.7
Sales and customer service occupations	260	2.8	1.4	0.7
Process, plant and machine operatives	189	2.5	1.8	0.4
Elementary occupations	241	3.5	1.3	0.5
Total	2,217	3.1	1.6	0.7

Note: employee estimates do not include self-employed.
Source: Futureskills Scotland Scottish Employer Survey (2008)

9.10 In summary, Scotland's economy is experiencing recession. Like the UK as a whole, GDP and the employment rate have fallen and the unemployment rate has risen. Also, as with the UK, we can expect unemployment to continue rising for a period after GDP starts to rise. There is some survey evidence of skill shortage, but this accounts for a small proportion of total vacancies and total employment.

9.3 Engagement by the MAC with Scotland

9.11 In May 2009 we visited employers in Scotland and held a forum which was attended by over 40 stakeholders. We explained the Committee's methodology for recommending occupations for the UK and Scotland-only shortage occupation lists. We encouraged employers and organisations to submit evidence to us where they believed there were skilled labour shortages that could be sensibly filled by immigration from outside the European Economic Area (EEA).

9.12 At the same time as our stakeholder forum in Scotland we visited stakeholders to see things 'on site' for ourselves. We went to see the Edinburgh BioQuarter and a firm in Livingston designing and manufacturing seat covers for cars and commercial airliners.

9.13 We included many Scotland-based employers and organisations when we sought evidence in relation to the occupations we reviewed for this report.

9.4 Discussion of occupations

Skilled fish filleters

9.14 We received no evidence showing shortage in relation to the skilled fish filleting-related jobs that we recommended for inclusion in autumn 2008. The company which

provided evidence on that occasion told us that they are not experiencing shortages and we therefore recommend that the following job titles are removed from the Scotland shortage occupation list: manual filleters of frozen fish, machine-trained operatives and quality controllers in the fish processing industry (within SOC code 8111: food, drink and tobacco process operatives).

Medical consultant posts

9.15 We received evidence from the Scottish Government suggesting that consultants in five speciality areas should be included on the Scotland shortage occupation list. These were: biochemistry, ear, nose and throat (ENT), ophthalmology, oral surgery and radiology.

9.16 In relation to biochemistry, we were provided with no specific information in relation to why the speciality was in shortage and we therefore do not recommend it for the shortage occupation list.

9.17 For consultants in ENT, ophthalmology and oral surgery we were provided with vacancy-level data, but vacancies appeared to be at low levels. For ENT they equated to around two full-time equivalent vacancies, while for ophthalmology and oral surgery they equated to around one full-time equivalent vacancy for each. Only in the case of consultant radiologists did we receive evidence that there were a significant number of vacancies (around 14 full-time equivalent out of a total of 256 full-time equivalent in the whole of Scotland), some of which, around seven full-time equivalent, had been long term (over six months), which signals that there is a shortage.

9.18 We accept that a particular speciality may have problems in recruiting to certain regions in Scotland, but in order to be

recommended for the Scotland shortage occupation list we need evidence that demonstrates the occupation is in shortage across the country as a whole. Very small numbers of vacancies do not demonstrate this.

- 9.19 Consultant radiologists fall under SOC 2211 and are skilled. It would be sensible to fill this important medical speciality using non-EEA labour in the short term.
- 9.20 We therefore recommend that consultant radiologists be included on the shortage occupation list for Scotland.

Registered nurses for care homes for the elderly

- 9.21 We received evidence from Scottish Care asserting that nurses for care homes for the elderly are in shortage in Scotland. Scottish Care is the representative body for independent care homes in Scotland. Scottish Care membership represents 90 per cent (690 care homes) of the independent sector in Scotland. Approximately 600 care homes have nursing capacity and the sector employs in excess of 3,000 nurses.
- 9.22 Scottish Care told us that 13.4 per cent of the workforce is either from elsewhere in the EU or outside the EU (split evenly between the two). Scottish Care suggested that this reflects both a general difficulty in recruitment within the indigenous population and the particular skill shortage around qualified nurses.
- 9.23 Scottish Care also told us that demographic changes are placing greater emphasis on care homes providing higher levels of care (such as the management of long-term conditions, rehabilitative and palliative care). A shift of balance of care away from acute hospitals to the care sector and
- tighter regulation of care services also place emphasis on the need for a larger skilled workforce. Scottish Care acknowledges that, in time, this need may be met by recruitment and training initiatives targeted at the Scottish workforce, but for the time being, they argue, there is a need for immigrants to fill shortages.
- 9.24 They also told us that the three largest providers of care homes with nursing in Scotland are currently reporting significant difficulty in recruitment of nurses. These providers have over 80 vacancies between them and there are delays in filling vacancies of up to 24 weeks, despite advertising through websites, the local press and professional journals.
- 9.25 Scottish Care also told us that the net result is that these shortages impact on service delivery and that there are increased costs associated with using agency staff. They were not able to conduct a full survey of their members in the time available and suggest that, although there may be some geographical variations, the general picture is that smaller providers are experiencing even greater recruitment difficulties.
- 9.26 We hear the argument put forward by Scottish Care, but do not recommend that nurses for care homes for the elderly are added to the Scotland shortage occupation list. As outlined elsewhere in this report, we also received evidence relating to nurses in care homes elsewhere in the UK, but this was not strong enough to include them on the UK shortage occupation list. The evidence for Scotland was no stronger than that received for the UK. However, we welcome further discussion with the sector and a further look at the evidence in time for our next review. In particular, we are interested in establishing the role played by agency staff in filling vacancies.

Leather interior specialists for the transportation industry

- 9.27 When we went to Scotland in May 2009 we visited Transcal, a Scotland-based company that designs and manufactures leather interiors and accessories for the transportation industry, and saw at first hand their operations. We also received evidence from them. They presented evidence in relation to the following job titles: pattern designer and templater (SOC 5493), sewing seamstress (SOC 5414), installation and trimming supervisor (SOC 2126) and quality production co-ordinator (SOC 3115).
- 9.28 During our visit to their factory in Livingston we saw evidence that these posts were skilled as they include design elements as well as production, and also require supervision and training of other workers in the process. Transcal's business is unique to Scotland and they have to source a small number of skilled employees from Singapore where there is well-established leather-working expertise. In addition, part of the manufacturing process is based in Singapore so the relevant workers need to have fluency in both English and Chinese, giving these occupations a very specific skill set.
- 9.29 Transcal told us they have advertised these jobs in the UK without success; however, the evidence they presented to

us on shortage was not specific enough to be compelling. Transcal also told us they have been bringing in their own employees from the Singapore side of their business. These workers have been entering via the intra-company transfer route of Tier 2 of the Points Based System. At the time when we met them there was a possibility that the intra-company transfer route would be closed on our advice (see Chapter 1 of this report and Migration Advisory Committee (2009d)), but this, it has now been confirmed, will not be the case. Therefore we find that, based on the evidence received, it is not sensible to include them on the shortage occupation list as there seems to be a viable alternative that is currently fulfilling their needs.

The Scottish shortage occupation list

- 9.30 Table 9.2 shows the recommended shortage occupation list for Scotland.

9.5 Next steps

- 9.31 We will continue to work closely with stakeholders in Scotland for future reviews of the shortage occupation lists. We were represented at the recent National Conversation Event on Immigration hosted jointly by the Scottish Government and the David Hume Institute, and look forward to working with stakeholders to progress this work.

Table 9.2: Recommended shortage occupation list for Scotland for Tier 2 of the Points Based System, September 2009

Related occupation title and SOC code	Job titles included on the shortage occupation list	Other information: skill levels and review timescales
Medical practitioners (2211)	ONLY the following job title within this occupation: consultant radiologist	Review autumn 2010

10.1 Introduction

- 10.1 This chapter discusses how we plan to develop our methodology for assessing skilled shortages that may sensibly be filled by migration. When we set out the methodology for our first recommended shortage occupation lists in autumn 2008, we noted that we would review the approach, and outlined some areas for future research and evaluation. This chapter discusses progress on these, as well as the implications of recent reviews of the Points Based System (PBS).
- 10.2 First we look at the some wider reviews of the PBS, including our own on Tier 2 and dependants. Then we discuss research that we have commissioned and other factors that have come to light under the headings of skilled, shortage and sensible. Finally we outline the next steps in the development of our methodology.

10.2 Shortage occupation list in the context of the Points Based System

- 10.3 Since our previous report on the shortage occupation lists, there have been two significant reviews of the PBS: our own review of Tier 2 and dependants of PBS immigrants (Migration Advisory Committee, 2009d) and a review of the whole PBS by the House of Commons Home Affairs Committee (Home Affairs Committee, 2009). On 7 September 2009, the Home Secretary announced

the Government's intention to accept the recommendations we made in our report on Tier 2 and dependants. The report of the Home Affairs Committee covers a number of issues relevant to our methodology for compiling the recommended shortage occupation lists.

- 10.4 We also convened an international conference on 7 September 2009 where we discussed, among other issues, the policy and operation of shortage occupation lists.
- 10.5 We discuss each of the above reviews and the international conference in turn.

Tier 2 and dependants

- 10.6 We published our report to the Government on Tier 2 and dependants on 19 August 2009. In making our recommendations, a primary concern was that the PBS should automatically adjust to changing economic circumstances, rather than requiring amendment in response to changing economic circumstances. This will help to mitigate the risk of undercutting and/or displacement of UK workers during a downturn, but without jeopardising an economic recovery. The Government announced on 7 September 2009 that it would be accepting our recommendations on Tier 2 in full.
- 10.7 We recommended that all of the routes currently in operation under Tier 2, including the shortage occupation route, remained in place. The overwhelming

weight of evidence we received on Tier 2 related to the intra-company transfer and Resident Labour Market Test (RLMT) routes. Our recommendations for these routes, particularly increasing the earnings criteria, will affect the types of workers who can be brought in through these routes. It is possible that this will result in new occupations being put forward for consideration for inclusion on the shortage lists.

- 10.8 We did receive some evidence specifically on the shortage occupation route. The Department for Work and Pensions proposed that an RLMT be applied to the shortage occupation route. Our view is that the methodology for drawing up the shortage occupation list, and indeed the rationale for having a shortage list, is that for the occupations on the list, the resident labour market has already been tested. We therefore believe that no additional test should be required, due to the additional and necessary burden it would place on employers.
- 10.9 We are receptive to the fact that skills needs may result from the demands of strategic growth industries. The Department for Business, Innovation and Skills gave the example of 'low carbon industrial strategies'. We noted that if sufficient robust evidence is provided, the shortage methodology is flexible enough to accommodate such evidence.
- 10.10 Finally, we examined the way in which the requirement for employers to pay the going rate for jobs was assessed. This requirement applies across all routes within Tier 2 and is also an area of concern when we consider the issue of whether it is sensible to fill shortages with immigrant labour. We found some inconsistency in the methodology used to calculate going rates and we

recommended that where industry codes of practice are used, these are also corroborated using data from the Annual Survey of Hours and Earnings.

Home Affairs Committee report

- 10.11 On 1 August 2009, the House of Commons Home Affairs Committee published their inquiry into the Government's implementation of the PBS.
- 10.12 The report argued that the ability of the PBS to respond flexibly to the economic climate is important in ensuring that employers seek to recruit from the UK labour market in the first instance. However, certain skills shortages will persist despite the recession and there must be avenues for employers to fill these from outside the European Economic Area (EEA) to ensure that the UK's global competitiveness is not harmed.
- 10.13 The Home Affairs Committee paid particular attention to shortages and to our methodology for the shortage occupation list. They identified three broad categories of shortage:
- shortages of highly specialist skills which are not available in the resident labour market;
 - shortages due to unattractive wages or conditions; and
 - shortages due to insufficient investment in skills.
- 10.14 As the report recognises, the latter two categories cut across both shortage and sensible criteria within our framework. They also align, to an extent, with our thinking set out in our spring 2009 report, and restated in Chapter 3 of this report, on various categories of skill shortage: long-term structural; short-term cyclical; those reflecting the UK's position at the

peak of certain global labour markets; and those reflecting constraints on public expenditure. The Home Affairs Committee report also draws an additional distinction between long-term structural shortages and short-term cyclical shortages as discussed below.

- 10.15 The Home Affairs Committee raised two significant questions with respect to the shortage occupation list. The first is whether the methodology allows the list to respond quickly enough to changing economic circumstances, capturing shortages that emerge quickly. We share this concern, particularly in the context of lags in labour market data. Semta, the Sector Skills Council for engineering, has also expressed concern about the ‘sampling frequency’ of indicators of shortage. We therefore pay close attention to bottom-up evidence from stakeholders and remain willing to be responsive where there is strong evidence of rapidly emerging shortages. As the Home Affairs Committee report notes, we set out a process of six-monthly reviews. Except under exceptional circumstances, we believe that six-monthly reviews achieve the right balance between responsiveness and providing certainty to stakeholders about when we review occupations, including allowing time for evidence to be prepared and considered.
- 10.16 A second question raised by the Home Affairs Committee is whether short-term or cyclical and long-term structural shortages can all be addressed by the shortage occupation list. Specifically, the Home Affairs Committee proposes that long-term and structural shortages should be addressed by adapting the points criteria, rather than by including them on the list. Different types of shortage have become apparent when reviewing occupations and we have commissioned research

to better conceptualise skills shortages. However, we do believe that the skilled, shortage and sensible framework applies equally to short-term or cyclical shortages as well as to structural and long-term shortages, regardless of how they are accommodated in the immigration system. We will consider the Home Affairs Committee’s points further when we review our methodology.

10.3 The MAC international conference

- 10.17 On 7 September 2009 we hosted an international conference which brought together colleagues and experts from the UK and abroad to discuss the policies and practices used to regulate immigrant labour. Although the conference was not solely focused on the UK or on shortage occupation lists, the discussions highlighted some issues pertinent to our thinking.
- 10.18 One issue of interest was whether shortage lists should be focused on current shortages, or emerging areas of shortage. Although the approach varies from country to country, similar issues were noted, including data lags and responsiveness in responding to current shortages. Issues in assessing potential future shortages included the difficulty in ‘picking winners’ (predicting those industries which will or should grow) and how such an approach integrates with broader industrial policy.
- 10.19 Numerous challenges to the implementation immigration policy were raised. For example, differences in the industrial structure across regions can contribute to different regional labour demands, particularly in larger countries. Despite this, it may still remain difficult to attract immigrants to fill shortages

in particular regions or localities. It was recognised that there are no effective tools available to policy makers in designing immigration policies that encourage immigration in specific regions only.

- 10.20 The nature of shortages in lower skill occupations, and whether it is sensible to fill such shortages through immigration, were also discussed.
- 10.21 We are grateful to participants for their time and valuable contributions. The sharing of information about different countries, policies and experiences proved to be particularly useful for us, and will inform our ongoing work.

10.4 Our research programme

- 10.22 Here we discuss the development of our methodology and the research we have commissioned to support it under the headings of skilled, shortage and sensible. Final reports, where applicable, will be published on our website: www.ukba.homeoffice.gov.uk/aboutus/workingwithus/indbodies/mac

Skilled

- 10.23 The methodology for identifying skilled occupations is not updated in the same way as that for shortage because we do not anticipate the skill level of an occupation to change very much over time. But, as we noted when we first published the analysis, it is not set in stone. We consider bottom-up evidence on skilled occupations, and also refinements to the top-down methodology.
- 10.24 To support the development of our methodology for identifying skilled occupations, we are jointly commissioning, with the UK Commission for Employment and Skills, a theoretical review of approaches to defining and

measuring skill at the occupational and job title level. This review aims to evaluate our approach to defining skill, and how we assess occupations against that definition.

- 10.25 We are still in the commissioning phase, so there are no interim results to report at present. We anticipate being able to include any suggested refinements of the methodology used in the autumn 2010 review.
- 10.26 The Standard Occupation Classification (SOC) is in the process of being revised and SOC2010 will be adopted by the Office for National Statistics (ONS) in its major surveys in early 2011. We are working with the SOC revision team in the ONS and next year we will report on how the revised classification will affect our skilled and shortage indicators.

Shortage

- 10.27 We have commissioned a number of projects to support development and refinement of our methodology for identifying shortages:
- Frontier Economics is conducting a technical review of our methodology for identifying skilled shortages, including the refinement to the indicators.
 - WM Enterprise is undertaking a theoretical review of skills shortages and skill needs, building on York Consulting (2008). The findings of this project will inform our thinking on how and to what extent a revised methodology may take into account future skill needs.
 - The Economist Intelligence Unit is reviewing available labour market data for the EEA to identify whether and how the methodology might account for potential labour shortage and potential labour supply at the EEA level.

- We are working with the Learning and Skills Council and IFF Research to ensure that data are available from the 2009 National Employers Skills Survey at SOC 4-digit level in time for the spring 2010 review of the shortage occupation list.

10.28 In addition to planned research to develop our indicators and conceptual approach, the recession has led us to reflect on a number of aspects of our shortage methodology. We have built consideration of the economic cycle and impact of the recession in to our research projects on shortage, particularly the technical review where the recession has raised some issues for investigation. Semta, for example, notes that the method for calculating thresholds is relative to the distribution of each indicator and that this method may not therefore reflect the overall loosening of the labour market during the recession.

10.29 As outlined in Chapter 3, one change we made in response to the recession in our last review of the shortage occupation lists (MAC, 2009b) was to the threshold applied to our unemployment indicator. Unemployment has increased on average across the economy which means the median for the unemployment indicator is positive. We do not consider increasing unemployment to signify a shortage, and therefore do not consider the indicator to show a shortage where unemployment in an occupation is increasing.

Sensible

10.30 To better understand some of the issues that we identified under the heading of sensible and how they manifest themselves in reality, we are undertaking the following work:

- SQW Consulting is conducting a survey, and a small number of case studies, of employers focusing on use of migrant labour. This research project will examine how incentives and/or firm behaviour relate to the various criteria we identified under sensible in MAC (2008d).
- We are commissioning some case studies of how production regimes in agriculture and food processing influence use of immigrant labour, and whether and how that might change in the future. This will provide information about the feasibility of changing production regimes as an alternative to immigration for sectors where anecdotal evidence suggests this is plausible.
- We are performing in-house analysis to examine sectoral use of immigrant labour over time, and to unpick some of the determinants of use of immigrant labour. We have made some progress on the latter project, estimating changes in use of immigrant labour between 2002 and 2008 for occupations and sectors at the 2 and 3-digit occupational levels respectively.

Additional research projects

10.31 We are also contributing to the development of a survey of immigrants co-ordinated by the UKBA. This may go some way to addressing some of the significant gaps in the data relating to immigrants in the UK, particularly in relation to economic migrants using the PBS to enter the UK.

10.5 Next steps

- 10.32 Since we published our first recommended shortage occupation lists in autumn 2008, we have initiated a programme of research and examined a number of wider immigration issues at the request of the Government. We have also been informed by wider developments in the literature and policy debates.
- 10.33 Some of the research projects discussed above are coming to fruition. We will give further consideration to the report of the Home Affairs Committee and the outcomes of our international conference alongside these projects. We intend to publish a methodological paper in advance of, or alongside, our spring 2010 shortage occupations review to discuss the findings of these projects and potential developments to our approach to identifying shortage occupations. We anticipate that developments to the methodology will be implemented for the autumn 2010 review, allowing time for consultation.
- 10.34 We will continue to review the shortage occupation list in accordance with the general process and timetable of six-monthly reviews we have set out.³ We value feedback on our methodology and continue to welcome comments at any time.

³ www.ukba.homeoffice.gov.uk/aboutus/workingwithus/indbodies/mac/the-mac-review-process

Chapter 11: **Conclusions and next steps**

11.1 Updating and reviewing the lists: next steps

- 11.1 We plan to carry out our third partial review in spring 2010 and a complete review of all skilled occupations in the entire UK labour market in time for our autumn 2010 report.
- 11.2 Job titles and occupations we will review in the next six months include the following:
- musicians; and
 - fishermen.
- 11.3 In addition, we may recommend the inclusion or removal of any occupation from the lists at any time if we believe there is a robust case for doing this. We will maintain a list of occupations that we are actively reviewing and publish it on our website: www.ukba.homeoffice.gov.uk/mac.

11.2 Stakeholder input

- 11.4 We are grateful to the stakeholders that have contributed to the evidence base for this partial review. We acknowledge that some stakeholders have made a particular effort to improve the quality of the evidence that they submitted to us according to our desired format.

- 11.5 Stakeholder input is essential to inform our advice to the Government. We will continue to hold periodic meetings of our Stakeholder Panel and Forum, to visit employers and other stakeholders, and hold other events.
- 11.6 We issue formal calls for evidence for each review that we carry out every six months. A call for evidence will run from October 2009 to January 2010 for our next partial review. Our contact details are provided on the inside front cover of this report. Future written evidence submitted should meet our criteria set out below.
- 11.7 If you are submitting evidence, please could you:
- provide details of your name, address, contact details and (where applicable) the organisations you are representing; and
 - provide full and specific evidence to support any claims, but also an easily digestible summary.
- 11.8 If you are submitting evidence that a job title or occupation should be considered for inclusion on (or non-inclusion on or removal from) the shortage occupations list for the UK or Scotland, please could you also:

- specify which specific occupations⁴ and job titles,⁵ according to the Standard Occupational Classification 2000 (SOC2000) at the 4-digit level, your evidence relates to. If you believe that the area of skilled shortage does not neatly map onto the SOC2000, please also state what you believe the closest match within the SOC2000 to be; and
- set out explicitly how the occupation or the job title satisfies each of our criteria in relation to skilled, shortage and sensible as described in detail in our autumn 2008 report.

11.9 We have produced a more detailed guide for stakeholders on how to submit evidence to us in relation to our recommended shortage occupation lists, and this can be found on our website.

11.3 Requests for occupation reviews

11.10 A case can be put to the MAC at any time during the year that it should review an occupation. The MAC will announce in its next report an intention to review the occupation if:

- the submission provides good evidence but has been received too late to be considered for the forthcoming review; or
- the submission provides partial evidence that needs to be corroborated and further investigated.

11.11 In exceptional circumstances, where the submission provides good and relevant evidence, it has been received in time and there is a case for an urgent review, the occupation may be fully reviewed immediately in time for the next report.

11.12 In some cases, such as where the MAC has recently reviewed an occupation, or where previous analysis has shown the occupation is not skilled, the MAC may decline a request to review an occupation.

11.4 Current and future research

11.13 We are currently commissioning research projects, as outlined in Chapter 10, to improve our current understanding and methodology used under the three Ss: skilled, shortage, sensible. We will draw on the findings and results of these projects as they progress, although a complete review of our top-down methodology to identify shortage in skilled occupations will not take place until our planned complete review in autumn 2010. Some of our projects are being taken forward jointly with the UK Commission for Employment and Skills.

11.14 We will publish details of emerging findings from our research programme, and implications for our methodology from autumn 2010 onwards, alongside our spring 2010 report, or in a paper on our website before that date.

⁴ For a list and description of occupations at the 1 to 4-digit level, see Office for National Statistics (ONS) (2000a): www.ons.gov.uk/about-statistics/classifications/current/SOC2000/dissemination/soc2000-volume-1.pdf

⁵ For a complete list of job titles, see ONS (2000b): www.ons.gov.uk/about-statistics/classifications/current/SOC2000/dissemination/soc2000-volume-2.pdf

11.5 Monitoring and evaluation

- 11.15 The Government may, in the future, ask us to review any aspect of the Points Based system (PBS).
- 11.16 We will also use the most up-to-date labour market data available to assess the impact that the shortage occupation lists are having on migration flows, and we think it is crucial that high-quality PBS management information is made available for this and other purposes. It is our intention to keep using up-to-date data to identify changing needs in the UK labour market so that the shortage occupation lists are responsive to changing economic circumstances.

11.6 Other MAC work

- 11.17 The Government has asked us to provide advice on the following issue: what further changes to the criteria for Tier 1 of the PBS should there be in 2010/11, given the changing economic circumstances? We are currently working to report by the end of October 2009.

Annex A: Consultation

A.1 List of organisations that submitted evidence

Aim Aviation (Henshalls) Limited
Apex Care Homes Ltd
Asset Skills
Association of Directors of Adult Social Services
Bangladesh Caterers Association UK
Barking and Dagenham Local Authority
Birmingham Chamber of Commerce
BP International Limited
British Hospitality Association
British Meat Processors Association
Chamber of Shipping
Chinese Catering Solutions
Chinese Immigration Concerns Committee
Christine Lee & Co (Solicitors) Limited
CLAAS UK Ltd
Company Chemists' Association Limited
ConstructionSkills
Department for Business, Innovation and Skills
Department for Children, Schools and Families
Department for Communities and Local Government
Department for Culture, Media and Sport
Doosan Babcock Energy Ltd
Dunbia (Sawley)
e2e Linkers Ltd
EDF Trading Ltd
Energy & Utility Skills
Engineering Construction Industry Training Board
English Community Care Association
Fergus Ewing MSP
General Medical Council
Ground Forum
Independent Healthcare Advisory Services
Institution of Chemical Engineers
Lantra
Marshall Aerospace/Aeropeople, KLM UK, Monarch Aircraft Engineering Airbase Interiors Ltd and Bombardier Aerospace (combined response)
Matchworkers International
Minister of Enterprise, Trade and Investment, Northern Ireland
National Association of Agricultural Contractors
National Campaign for the Arts
National Care Association
National Federation of Fishermen's Organisations
National Trainers Federation
Nautilus International
NHS Grampian
Oxfordshire Local Authority
People 1st
REACH Disability Care
Recruitment and Employment Confederation
RIG Radiography Recruit
Rolls-Royce plc
Royal College of Nursing
Royal College of Veterinary Surgeons
Royal Institution of Chartered Surveyors
Royal Opera House
Royal Pharmaceutical Society of Great Britain
School of Pharmacy and Life Sciences
Scottish Care
Scottish Fishermen's Federation
Scottish Government
Semta
Skillfast-UK
Skills for Care and Development
Skills for Justice
Society of London Theatre
Suffolk County Council
Theatrical Management Association
Transcal Ltd

TWI Ltd
 UKAEA
 Visalogic
 Voluntary Sector Social Services Workforce Unit
 Welsh Assembly Government
 Westinghouse UK

A.2 List of organisations met with

Aim Aviation (Henshalls) Limited
 Bangladesh Caterers Association UK
 Bombardier Aerospace
 British Hospitality Association
 Chamber of Shipping
 Chinese Catering Solutions
 Chinese Immigration Concerns Committee
 Christine Lee & Co (Solicitors) Limited
 Claas UK Ltd
 Department for Children, Schools and Families
 Department for Transport
 Department of Health
 EEF
 Embassy of the People's Republic of China
 Energy & Utility Skills
 Engineering Construction Industry Training Board
 Engineering Council UK
 e-skills UK
 Goldstar Chefs
 GoSkills
 Guild of Bangladeshi Restaurateurs
 Ground Forum
 Fernandes Vaz Solicitors
 IMI Automotive Skills
 Inflight Engineering Services
 Institution of Chemical Engineers
 Institution of Civil Engineers
 Institution of Highways and Transportation
 International Registration of Pharmacists
 KLM UK
 Lantra
 Marshall Aerospace/Aeropeople
 National Federation of Fishermen's Organisations
 Nautilus International
 NHS Employers
 NHS Workforce Review Team
 Oil & Gas UK

People 1st
 Recruitment and Employment Confederation
 Rolls-Royce
 Royal College of Nursing
 Royal Institution of Chartered Surveyors
 Royal Pharmaceutical Society of Great Britain
 Scottish Council for Development and Industry
 Scottish Fishermen's Federation
 Scottish Government
 Semta
 Skills for Health
 Skills for Logistics
 Society of British Aerospace Companies
 Transcal Ltd
 Universities UK
 Visalogic

A.3 List of Stakeholder Forum attendees (spring/summer 2009)

Scotland

Alliance of Sector Skills Councils
 Contract Scotland
 Convention of Scottish Local Authorities
 David Hulme Institute
 Di Maggio's
 Federation of Small Businesses
 Financial Services Skills Council
 First Permit Limited
 Futureskills Scotland
 Harlequin Leisure Group
 Hilton
 Laing O'Rourke Scotland Ltd
 Lantra
 Mother India
 National Australia Group
 Nuffield Health
 Oil & Gas UK
 Overseas Nurses Network
 People 1st
 Registered Nursing Home Association
 Scotland Office
 Scottish Care
 Scottish Chambers of Commerce
 Scottish Council of Independent Schools

Scottish Enterprise
Scottish Executive
Scottish and Southern Energy
Scottish Tourism Forum
Skills Development Scotland
TalentScotland
Transcal Ltd
UK Border Agency
Unison
University of Edinburgh
Windows Catering Company (Four) Ltd

Northern Ireland

ABP Lurgan
Anglo Beef Processors
Ango-North Irish Fish Producers Organisation Ltd
Bombardier Aerospace
Business in the Community
Carman Leather Ltd
Dunbia
Foyle Food Group
Gangmasters Licensing Authority
Gems NI
Invest Northern Ireland
Irish Congress of Trade Unions
Lantra
Linden Foods
Northern Ireland Council for Ethnic Minorities
Northern Ireland Fish Producers Organisation Ltd
Northern Ireland Food and Drink Association
Northern Ireland Meat Exporters Association
Office of the First Minister and Deputy First Minister
Queen's University
S.T.E.P. NI
University of Ulster

Wales

Airbus
Bronglais General Hospital
Caerphilly County Borough Council
Cardiff and Vale NHS trust
Cardiff University
Care Council for Wales
Care Forum Wales
Cogent
Community Cohesion Unit, Welsh Assembly
Cwm Taf NHS Trust
e2e Linkers Ltd
Matchworkers International
Panasonic
Periconsultancy
SRK Consulting
Trades Union Congress
UK Border Agency
University of Glamorgan
Uwch Swyddog Ymchwil
Valleys Race Equality Council
Velindre NHS Trust
Wales Strategic Migration Partnership
Welsh Assembly Government
Welsh Local Government Association

Abbreviations

A2	The two European countries, Romania and Bulgaria, that joined the European Union on 1 January 2007	MAC	Migration Advisory Committee
A8	The eight eastern European countries that joined the European Union in 2004	NAAC	National Association of Agricultural Contractors
ABO	Association of British Orchestras	NESS	National Employers Skills Survey
ADHD	Attention deficit hyperactivity disorder	NHS	National Health Service
ASHE	Annual Survey of Hours and Earnings	NHSE	National Health Service Employers
BHA	British Horseracing Authority	NICE	National Institute for Health and Clinical Excellence
BIS	The Department for Business, Innovation and Skills	NIESR	National Institute for Economic and Social Research
CBI	Confederation of British Industry	NMC	Nursing and Midwifery Council
CCA	Company Chemists' Association	NPA	National Pharmacy Association
CLG	Department for Communities and Local Government	NQF	National Qualifications Framework
COMPAS	Centre on Migration, Policy and Society	NTF	National Trainers Federation
DCSF	Department for Children, Schools and Families	NVQ	National Vocational Qualification
DH	Department of Health	ODP	Operating department practitioner
DSPD	Dangerous severe personality disorder	ONS	Office for National Statistics
EEA	European Economic Area	OSPAP	Overseas Pharmacists Assessment Programme
EU	European Union	PBS	Points Based System
GAD	Government Actuary's Department	RCVS	Royal College of Veterinary Surgeons
GDP	Gross Domestic Product	REC	Recruitment and Employment Confederation
HPC	Health Professions Council	RLMT	Resident Labour Market Test
IC	Information Centre	RPSGB	Royal Pharmaceutical Society of Great Britain
ILO	International Labour Organisation	SfH	Skills for Health
IMF	International Monetary Fund	SHA	Strategic Health Authority
IPEM	Institute of Physics and Engineering in Medicine	SOC	Standard Occupational Classification system
IPS	International Passenger Survey	UK	United Kingdom
ITEM	Independent Treasury Economic Model	UKBA	UK Border Agency
JCP	Jobcentre Plus	WEMSS	Women's Enhanced Medium Secure Services
JSA	Jobseeker's Allowance	WTD	Working Time Directive
LFS	Labour Force Survey	WRT	Workforce Review Team

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