Skills shortages in skilled construction and metal trade occupations

By **Yolanda Ruiz,** Labour Market Division, Office for National Statistics

Key points

- More than half of workers in construction and metal trades hold vocational qualifications at intermediate level.
- Vacancies for these trades are highly related to skills shortages in the potential labour supply and are becoming increasingly difficult to fill.
- Earnings for these occupations increased in 2003 at a higher rate than average.
- In the past three years the duration of unemployment in these groups has decreased by more than average.
- Usual hours of paid overtime have been at least two hours higher for these groups than average.
- There is no clear evidence of whether skills shortages in these occupations may be long-term and linked to structural changes in the economy, or short-term and linked to economic business cycles.

Using data from various sources, this article discusses the issue of skills shortages in key building trades.

Introduction

RECENT REPORTS by national training organisations and in the media have expressed concern about skill shortages within the UK labour market in certain craft-based occupations such as plumbers, electricians and building workers. Although it might seem reasonable to assume that the skill deficiencies are most likely to be found in the highest skilled groups, the shortages are actually most acute in specific occupations requiring certain vocational skills, especially in the construction and metal trades.

From the standpoint of the economy, it is not surprising that these groups have generated so much attention: construction and building trades provide the essential infrastructure required by all other sectors in the economy, while metal and electrical trades play an important part in driving forward technological change and development in the UK economy. The public also has an interest in these occupations because of their necessity to domestic projects, and is naturally concerned about any increase in the number of tradesmen who cannot fulfil the required standards.

The first part of this article describes the main characteristics of these occupational groups. The second part describes the benefits and shortcomings of the current and future use of qualifications to measure the vocational skills that those groups represent. The rest of the article analyses whether there is enough evidence to suggest that there are shortages in such skills. The article brings together analysis from the demand and supply sides of the economy, building on the more general and segmented literature on the topic. The term 'skills shortage' is used by different authors to refer to different dimensions of the term 'skill' (see *Box 1*). Some studies tackle skills shortages by analysing the unfilled demand for some occupational groups, while others concentrate on the supply side of the market by analysing evidence of the stock or lack of relevant skills in the current and potential workforce. The emphasis in this article is on the shortage of individuals with the required skills in the potential workforce, because this definition relates better to mismatches between labour supply and demand.

From the demand side, the article looks at recent data on vacancies and earnings; from the supply side it looks at the employment situation of the people in those occupations and the amount of hours worked. All these issues can, however, be seen from both a demand and a supply perspective, so the emphasis is always made on the investigation of possible mismatches.

Skilled trade occupations

For the purposes of official statistics, occupations are classified using the Standard Occupational Classification (SOC) 2000 (see *Box 2*). The occupational group that is mostly associated with vocational occupations at intermediate level is skilled trades occupations. This group is also particularly characterised by having the highest proportion of self-employed men, and one of the lowest proportions of non-UK nationals. Interestingly, it also happens to have been, throughout the past ten years, one of the most stable groups in numbers, male/female ratios and distribution by qualification level, despite the definitional changes as a result of the introduction of SOC2000.

Table 1 shows that the skilled trades occupations group involves very different trades. This article focuses on skilled metal and electrical trades and skilled construction and building trades, since these subgroups embrace the occupations of greatest interest. These groups have the highest proportions of men, and the most constant trend in the average age of workers.

Measurement of skills

Qualifications are usually used as a proxy for skills. They are easier to use and possibly more objective than a fully developed complex measure of the stock of skills of each individual. It is generally recognised that this method has its limitations, but the general tendency among young people to place a higher emphasis on qualifications may make this measure increasingly more accurate. National Vocational Qualifications (NVQs) were introduced in 1989 as an attempt to promote and measure competencies in a wide sense, including experience-based learning at work.

Evidence from several studies (Lind Frogner (2002), Skills Task Force (1999), ILO (May 2003)) shows that while the proportion of workers holding qualifications has indeed increased substantially over the years, especially among the young, this has been largely due to academic qualifications. Vocational qualifications in general have increased only slightly.

However, according to Labour Force Survey (LFS) data, the skilled trade subgroups under discussion here are the only groups in which half the population hold NVQ3 or equivalent as their highest qualification. This level of qualification is generally seen as representing the intermediate skills level. An increase in the numbers of trade apprentices may have contributed to this. This may indicate that while the general tendency to become qualified is not shared by all vocational occupations, it seems to apply to the

Box 1 What are 'skills shortages'?

The term 'skill' can be defined in various ways.

- An earlier article defined it as the ability to perform a task to a predefined level of competence (see pp17-27, *Labour Market Trends*, January 2002).
- In the Standard Occupational Classification (SOC) (see *Box 2*), two aspects of the definition of skill are distinguished: skill **level** is defined in terms of complexity of the tasks and duties to be performed; skill **specialisation** is defined as the field of knowledge required for competent, thorough and efficient conduct of the tasks.
- Skill levels can be linked to the length of time deemed necessary for a person to become fully competent in the job, related in turn to the time taken to gain necessary formal qualifications or the required amount of work-based training. Within the SOC, four skill levels are defined (see Skills Task Force (December 1999) for more details):

1. equates with the competence associated with general education;
2. covers all of the knowledge provided with general education but with a longer period of work-related or work experience;
3. associated with a period of post-compulsory education but not to degree level. This level is usually referred to as the 'intermediate' level; and
4. normally requires a degree or equivalent period of relevant work experience.

- Skills are also often divided into transferable (can be used across large numbers of different occupations) and vocational (specific occupational or technical skills needed to work within an occupation).

'Skills shortages' are understood as a shortage of individuals with the required skills in the external labour market (potential workforce) – different to 'skill gaps' or deficiencies in the skills of an employer's current workforce that require internal training. Even though they relate to different problems some authors treat them indiscriminately as a general 'lack of skills'.

Box 2 Change from SOC90 to SOC2000

In June 2000 ONS published the Standard Occupational Classification (SOC2000), which is a revision of the classification introduced in 1990 (SOC90). Most of the revisions were made to incorporate new occupations which did not exist in 1990 or to tighten the definitions of others. Other changes were linked to the upgrading of certain skills in comparison with others. It utilises four levels of aggregation: 9 major, 25 submajor, 81 minor and 353 unit groups. These are represented numerically by one, two, three or four digits.

The major group structure is designed to bring together occupational categories which are similar in terms of the qualifications, training, skills and experience with which they are generally associated (see *Box 1*). The skill specialisation criterion distinguishes submajor groups of occupations within each skill level.

There is no exact correspondence between SOC90 and SOC2000 at any level, most of the major groups have been renamed and all have a different composition. Within major group 5, 'skilled trade occupations', many job titles were moved to group 8 (plant and machine operatives), and a new submajor group was created to place farmers from major group 1 and skilled farm workers from major group 9. Submajor groups 52 and 53 correspond in the SOC2000 to the groups discussed in this article: skilled metal and electrical trades and skilled construction and building trades respectively.

Presented in *Table 1* are the SOC2000 trades-associated occupational groups at two-digit level and their mapping into SOC90. The mapping shown is the best approximation to the equivalent groups between the two classifications. For more detail, and to see how the changes were dealt with in the LFS, see Beerten, Rainford and Jones (July 2001).

Table 1 Mapping of SOC2000 to SOC90 for skilled trades occupations

SOC 2000	SOC 90
51 Skilled agricultural trades	9a Other occupations in agriculture, forestry and fishing
52 Skilled metal and electrical trades	5b Skilled engineering trades
53 Skilled construction and building trades	5a Skilled construction trades
54 Textiles, printing and other skilled trades	5c Other skilled trades

Source: Office for National Statistics

skilled construction and metal trade subgroups.

Moreover, although under half of the people working in skilled trades are not qualified, LFS data show that in 2003 the proportion of workers in skilled metal and electrical trades and skilled construction and building trades that were aged 50 and over and had no qualifications was nearly twice that of those who were qualified in that age group, while the converse was true for 16 to 34-year-olds.

If more than half of workers in these occupational groups hold NVQ3 qualifications, and younger groups are more likely to obtain qualifications than those approaching retirement age, the use of qualifications and the NVQ system may become an increasingly good measure of the skills within these occupational groups. This provides a very useful link to study the mismatches between the demand and supply of such skills in the UK labour market.

Demand

Analysis from the demand side looks at the number and duration of vacancies for construction and metal trades occupations, and the change in their level of earnings, since these suppose a cost to the employers and it is in their power to increase or decrease them.

Vacancies

The data used here to study vacancies is mainly from the Employers Skill Survey (ESS) and Jobcentre Plus (see *technical note* for details on the information they provide), complemented with some results of analyses produced by National Training Organisations.

The ESS provides a more comprehensive picture of vacancies than the vacancy series produced by Jobcentre Plus and it identifies explicitly those vacancies related to skill shortages. It also provides a check on the extent to which vacancies reported to Jobcentres are representative of the whole economy. For July 1999 data, the ESS estimated that Jobcentre Plus covered less than half the vacancies for establishments with five or more employees, although this varied between occupations. For the skilled trades occupations group it covered 56 per cent of the vacancies. The ESS is, however, limited in showing trends over time because it is not a standard survey run every year, so the data are not immediately comparable at all levels between surveys.

Jobcentre Plus data, on the other hand, provide information on the duration of vacancies, and data are comparable between years, enabling time-series analysis. The data also provide information on self-employed vacancies that require jobholders to pay their own tax and National Insurance contributions.

Vacancies by occupation

An earlier article, which used data from the 2001 ESS (see pp17-27, *Labour Market Trends*, January 2002), found that 56 per cent of all skill-shortage vacancies were in professional, associate professional, and skilled trades, although these occupations accounted for only 34 per cent of all jobs.

Similarly, analyses on the updated ESS2002 (DfES, 2003) contradict the assumption that vacancies are likely to be more prominent for the mostly highly qualified groups: the three most highly skilled occupational groups

Table 2 **Number of vacancies and skill-shortage vacancies ranked by intensity of skill-shortage vacancy; England; 2001**

	Vacancies		Skill-shortage vacancies			
	Number	Rank	Number	Rank	Intensity[a]	Rank
SOC2000 occupation						
Science and technology professionals	30,084	9	16,587	1	0.55	1
Science and technology associate professionals	24,502	14	12,352	3	0.50	2
Skilled construction and building trades	24,013	15	11,636	4	0.48	3
Business and public service professionals	20,957	16	9,708	6	0.46	4
Skilled metal and electrical trades	32,345	7	11,517	5	0.36	5
Leisure and other personal service occupations	24,615	13	6,134	15	0.25	6
Process, plant and machine operatives	29,597	10	7,046	11	0.24	7
Corporate managers	28,394	11	6,570	12	0.23	8
Health professionals	1,551	24	338	24	0.22	9
Managers and proprietors in agriculture and services	5,595	22	1,188	21	0.21	10
Textiles, printing and other skilled trades	18,609	17	3,753	16	0.20	11
Teaching and research professionals	16,530	18	3,327	17	0.20	12
Health and social welfare associate professionals	31,986	8	6,268	14	0.20	13
Caring personal service occupations	45,415	5	8,700	9	0.19	14
Transport and mobile machine drivers and operatives	39,764	6	7,600	10	0.19	15
Skilled agriculture trades	2,972	23	489	23	0.16	16
Business and public service associate professionals	57,094	4	9,078	7	0.16	17
Unclassified	460	26	70	25	0.15	18
Sales occupations	95,801	1	13,820	2	0.14	19
Culture, media and sports occupations	10,313	21	1,443	20	0.14	20
Secretarial related occupations	15,756	19	1,958	19	0.12	21
Administrative occupations	78,624	3	8,750	8	0.11	22
Elementary trades, plant and storage related occupations	24,705	12	2,151	18	0.09	23
Elementary administration and service occupations	84,514	2	6,309	13	0.07	24
Customer service occupations	13,512	20	753	22	0.06	25
Protective service occupations	1,165	25	11	26	0.01	26
All establishments	**758,871**		**157,556**		**0.21**	

Source: Department for Education and Skills

a Skill-shortage vacancies divided by vacancies.

(managers, professionals and associate professionals, typically with NVQ4/5) do not account for the largest proportions of the total number of vacancies. Each of the nine occupational groups accounts for a similar proportion to the total. Similarly, the survey shows that hard-to-fill vacancies are not concentrated in the three most highly skilled major occupational groups, since they account for less than 30 per cent of the total. Perhaps more indicative of the acuteness of the problem, the density of skill-shortage vacancies in these groups is above average, but the highest density of all is found in the skilled trades group where the typical qualification is NVQ3.

A report on key findings (DFES, 2004) on the latest published National Employers Skills Survey (NESS2003) corroborates these results, and states that skilled trade occupations ‘stand out as having the highest share of all recruitment problems’ by accounting for 15 per cent of all hard-to-fill vacancies and 18 per cent of all skill-shortage vacancies.

In reference to the specific subgroups of interest, skilled construction and building trades have above average ‘intensity’ of skill-shortage vacancies out of total vacancies. *Table 2* shows a ranking of all the subgroups according to the intensity of the skill-shortage vacancies out of total vacancies, and the groups that are the subject of this article show among the five highest. In skilled construction trades 48 per cent of the vacancies are due to skill-shortages, and 36 per cent in skilled metal trades, compared with an average of 21 per cent.

The analyses of ESS data also show that the majority of establishments reporting vacancies in skilled metal and construction trades are mainly concentrated in two sectors (manufacturing and construction respectively) rather than scattered equally among different sectors (see *Table 3*), especially for construction trades. This provides a crucial link between occupations and industry for these particular groups which is not shared by the majority of occupations. It allows us to complement information on these occupations with the recruitment

Table 3 **Proportions of establishments reporting vacancies in selected occupations by industry; England; 2001**

Per cent

	Skilled metal and electrical trades	Skilled construction and building trades
Industry		
Agriculture and fishing	0	1
Mining and quarrying	0	0
Manufacturing	44	7
Electricity, gas and water supply	0	0
Construction	15	79
Wholesale and retail	18	3
Hotels and restaurants	1	0
Transport and communications	5	0
Finance	0	0
Business services	13	8
Public administration	0	1
Education	1	0
Health and social care	1	1
Other services	2	1
Total	**100**	**100**

Source: Department for Education and Skills

difficulties experienced by the industrial sectors they so closely represent.

Sectoral recruitment difficulties

In this respect, according to the ESS reports, construction and metal-working sectors seem to be characterised by having the relevant skills on their existing workforce but companies struggle to find them in the external market.

Reports by the Construction Industry Training Board (CITB) (2001, 2002) corroborate these results by stressing that, in the construction industry, difficulties in recruitment were high in 2002, affecting 79 per cent of participating employers – slightly above what they had been in 2001. Recruitment in the open market was reported to be still relatively rare, with the majority of staff being trained internally to acquire the relevant skills or being sourced from other companies.

The CITB reports also highlight a shortage of skilled younger workers to replace older workers, in comparison with other sectors where employment increased quickly in the 1980s and 1990s (as in many service sectors). The issue of an ageing workforce may get worse as a result of recent regulations that require workers regularly to resubmit themselves for accreditation. Moreover, there are currently some initiatives by the Confederation of Construction Clients to move incrementally to only employing fully qualified, registered workers. These would complement other initiatives such as the Quality Mark Scheme, which is aimed at protecting smaller one-off clients (for example, householders) from disreputable builders and is being piloted in some parts of the country.

National Electrotechnical Training (NET) reports (2002) also show concern about recruitment problems in the electrotechnical sector, particularly of able young people, as current recruitment levels are insufficient to replace those who are due to retire in the next few years. NET is also promoting initiatives in this sector towards universal qualification, such as the requirement that every apprentice undertakes the NET NVQ3, possibly to discourage unqualifed tradesmen from entering the open market.

All these initiatives aimed at increasing the number of fully qualified workers in both sectors indicate that in the coming years skill shortages will be more directly measurable in terms of qualifications. However, they also may lead to a higher number of skill-related vacancies unless there is an expansion of the potential labour force, for example by employers encouraging a more diverse workforce. (In these occupations, as already shown, there is a very low proportion of women and people from ethnic minority groups.)

Structural versus cyclical shortages

Precisely because of the linkage of construction and metal trades occupations with specific industrial sectors, and the importance of those sectors in the wider economy, the shortages seen above may, at least in part, reflect cyclical patterns.[1] The CITB reports explain that, during the late 1980s, the Construction Confederation's quarterly survey showed that four out of five construction employers had difficulty recruiting skilled workers until the early 1990s when this fell to almost zero with the recession. There was a steep increase in recruitment difficulties in the next few years, followed by a similar decrease in the mid-1990s as the economy slowed down. In 1996, the recruitment problems reappeared as the economy got better, and they have remained until today.

Data from Jobcentre Plus show an increase in the in-flow of notified vacancies for skilled metal and construction trades in June 2003 (compared with the in-flow in June 2002) that was higher than in other occupations. The in-flow was 6.4 per cent higher than in the previous year for metal trades and 7.5 per cent higher for construction occupations, compared with an increase of 0.9 per cent for the remaining average (the average of all occupation subgroups excluding electrical and metal trades and construction trades). This could be indicative of current skill shortages, although comparison with previous years to check whether it could be a

Table 4 **Average gross weekly pay[a] for people in full-time employment holding NVQ3 as highest qualification; United Kingdom; spring quarters 2001 to 2003**

	Skilled metal and electrical trades		Skilled construction and building trades		All other occupation groups	
	Average weekly pay (£)	Annual increase (%)	Average weekly pay (£)	Annual increase (%)	Average weekly pay (£)	Annual increase (%)
2001	389		359		393	
2002	410	5.4	372	3.6	394	0.3
2003	426	3.9	395	6.2	401	1.8

Source: **Labour Force Survey**

a Excluding overtime.

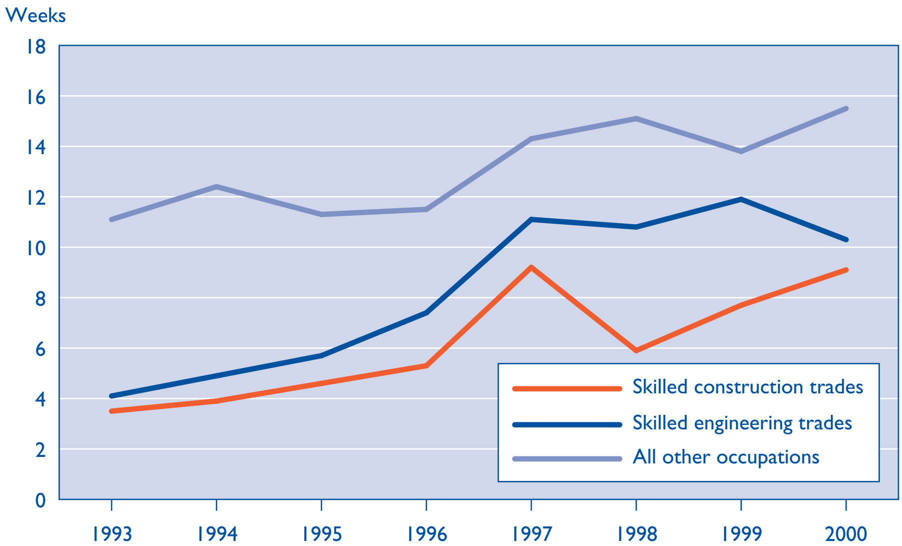
more structural problem is difficult due to the discontinuities of the data.

For previous years, though, it is possible to analyse the mean duration in weeks of the stock of vacancies (only available up to 2000). It shows that the average duration of vacancies for skilled metal trades has been consistently about one week above average (two since 1998), indicating relatively permanent recruitment difficulties for those occupations. However, for skilled construction trades duration is one week below average, so the recruitment difficulties could be of a more temporary nature, according to the cyclical nature of the work.

Data on self-employed vacancies is particularly relevant in the analysis of construction and metal trades because, as mentioned above, they are generally characterised by a high proportion of self-employed workers. The proportion of total notified vacancies for this type of vacancy is very low on average (excluding the groups under analysis, below 2 per cent). For skilled metal trades, the proportion is only slightly higher than average, and has been getting closer to it. For skilled construction trades, the proportion has been historically much higher. The CITB reports explain that the majority of construction projects are carried out by teams drawn from specialist subcontractors that move between sites for different projects, so that self-employment is now widespread across all stages of construction.

Even though the proportion of self-employed vacancies out of total vacancies is relatively higher for the construction trades, it started decreasing after reaching a peak in 1995 (over 20 per cent) until 1998 (when it was just over 6 per cent), and it has started increasing

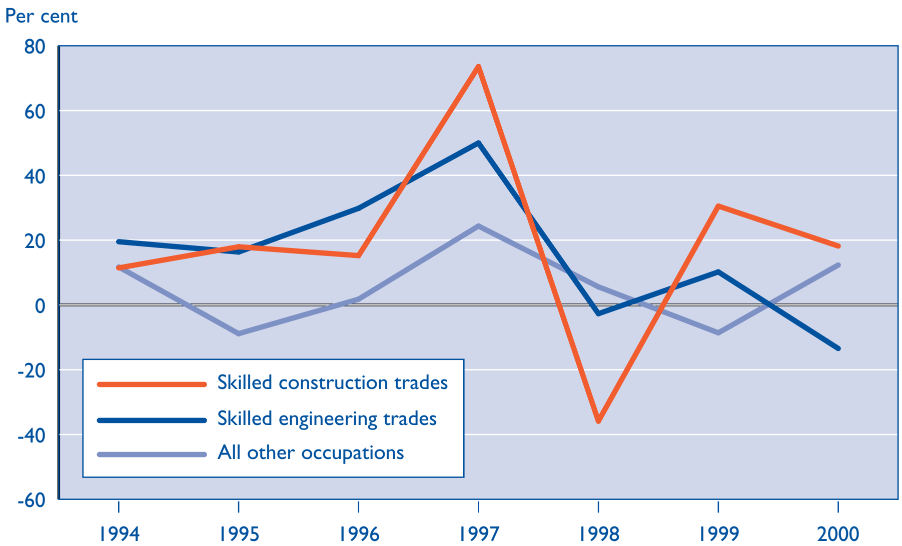
Figure 1 **Average duration of self-employed unfilled vacancies; Great Britain; 1993 to 2000[a]**



Source: **Jobcentre Plus administrative system**

a Data are for April of each year.
Note: occupations are coded according to the Standard Occupational Classification 2000.

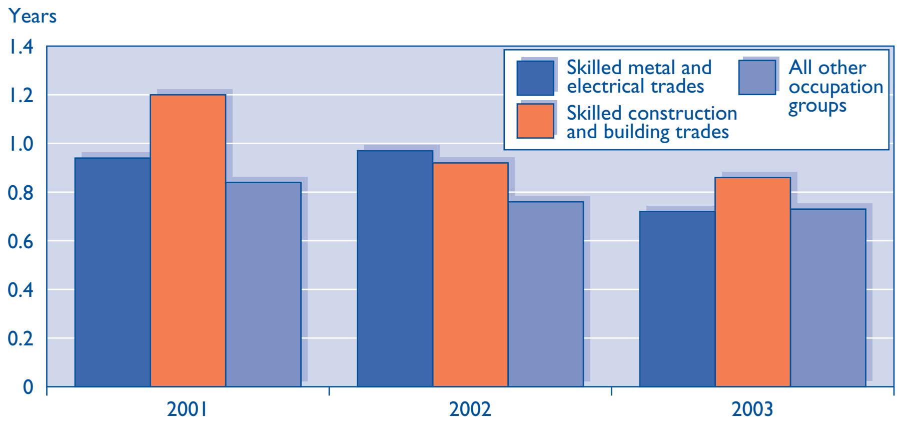
Figure 2 **Increase in average duration of self-employed unfilled vacancies; Great Britain; 1994 to 2000**



Source: **Jobcentre Plus administrative system**

a Data are for April of each year.
Note: occupations are coded according to the Standard Occupational Classification 2000.

Figure 3 Average duration of unemployment; United Kingdom; spring quarters 2001 to 2003



Source: Labour Force Survey

Note: occupations are coded according to the Standard Occupational Classification 2000.

slightly again since. Part of the decrease after 1995 is linked to the fact that Inland Revenue tightened up the rules on who can be registered as self-employed, and that has reduced numbers. However, part of the decrease could also follow from the cyclical nature of the work available for these occupations, particularly those in the construction trades, in which the self-employed group would be the most quickly affected.

The mean duration of self-employed unfilled vacancies is substantially lower for both occupational groups than for the average (see *Figure 1*), but has been increasing at a rate generally above the average (see *Figure 2*) so the gap has been getting closer with time. This could indeed be indicative of increasing difficulty in companies to fill vacancies destined for the self-employed in these vocational groups. But it could also indicate that the self-employed might be becoming more specialised in domestic trade, possibly because they may lack the specific qualifications increasingly required in order to work in a company as self-employed. The increasing difficulties in filling the self-employed vacancies for these occupations may explain why the proportion of this type of vacancy is low in comparison with the high number of self-employed workers in these occupations.

Income

The recruitment difficulties and evidence of certain skills shortages discussed above may lead to an increase in the salaries or incomes for these occupations in comparison with other occupations with the same skill level, in order to attract more people and retain the current workforce. There are two main sources of earnings with an occupational breakdown in the UK: the LFS and the New Earnings Survey (NES) (see *technical note*). In order to ease comparison between the two sources, data are shown for full-timers only. For full-time employees, Wilkinson (1998) argues that the NES should be a more reliable source of data.

Considering the past five years, both the LFS and the NES show a very similar picture: gross weekly pay excluding overtime is higher for skilled metal than for skilled construction trades, but both are below the average of the rest of occupations.

In terms of rate of change of pay (which is more indicative of skills shortages), however, LFS data for 2003 show an increase in all groups, but pay in construction trades rose above the average, while for metal trades it rose below average. By contrast, NES data for that year show that earnings increased in both groups at a higher rate than the average (around 5 per cent compared with around 2 per cent).

Given the fact that the NES is considered the most reliable source of data for full-time employees, this may be indicative of current skill shortages within these occupational groups. Added to this, when only those employees in the LFS holding NVQ3 as their highest qualification are considered, gross weekly earnings in 2003 were increasing for skilled metal and electrical trades at a rate above 2 percentage points higher than the average, and for skilled construction and building trades at a rate above 4 percentage points higher (see *Table 4*).

However, none of the surveys described above cover the income of the self-employed, and there is in fact no reliable source of income by occupational group at the two-digit level on that.

Supply

Information from the demand side can be complemented by analyses from the supply side, by looking at the employment conditions of the current workforce in the occupations in question, including the self-employed, and the amount of hours they work. The resulting picture might encourage or discourage other potential workers, and determine the labour supply in the future.

Unemployment

It seems reasonable to believe that skills shortages in the occupational groups of interest here would lead to a better employment situation in these groups in comparison to other occupational groups at the same skill level.

A look at the past ten years of the unemployment rate by occupation (according to the last job) using LFS data shows that the percentage change for these two groups has been generally below the average. On occasions, however, it has been above the average due to the much greater ups and downs shown for those occupations, indicating a greater sensitivity to the economic cycles.

However, in the past three years the rate for skilled construction and building trades seems to have been substantially higher, and out of line with previous cyclical patterns. The problem is that unemployment figures are for the survey reference week only, and may not be very appropriate in the analysis of occupations where, as we have seen above, the work is increasingly being

Skills shortages in skilled construction and metal trade occupations

contracted out on a project basis and therefore the amount of 'frictional'[2] unemployment may be higher in the more recent years. The duration of unemployment may therefore be a better indicator. *Figure 3* shows that in the past three years the duration of unemployment in these groups has indeed decreased by more than for the average (by 23 per cent for skilled metal and electrical trades, and 28 per cent for skilled construction and building trades compared with 13 per cent for the rest). *Figure 4* shows that this is due to a more pronounced increase within these groups of the proportion of unemployed for less than three months at the expense of those unemployed for more than three months.

Figure 4 Proportions of people unemployed by duration of unemployment; United Kingdom; spring quarters 2001 to 2003

Source: Labour Force Survey

Hours worked

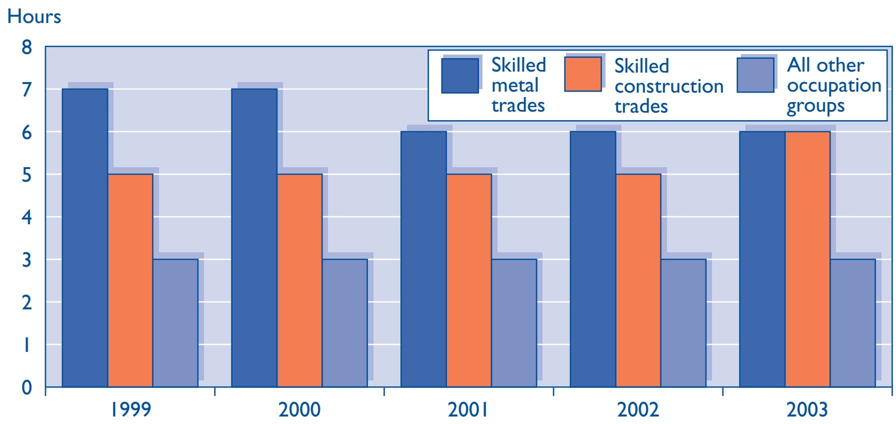
Another possible effect of skill shortages is to increase the workload of existing workers. An analysis of the basic (that is, excluding overtime) usual hours worked using LFS data shows that skilled construction and metal workers have generally had a much higher than average usual hours worked in the past ten years. This could partly be because the self-employed tend to state a higher number of hours worked than employees. It is, however, likely that because of the nature of their work the number indeed tends to be higher. On one hand, the work is generally project-based and may require workers to stay away from home while the projects last, so it is in their interests to work longer hours. On the other hand, the cyclical nature of the sectors in which these occupations predominate may lead to workers working higher hours when the economy is booming and less hours when there is lack of work, without necessarily changing their job. This would make sense, because some of the skills acquired in those professions are too specialised to be easily transferable. In this respect, 2003 LFS data shows that the average time with the current employer is in fact higher than for the average occupation.

In terms of the average of usual hours of paid overtime, which may be more indicative of temporary skills shortages, *Figure 5* shows that for the past five years it has indeed been quite a lot higher for these vocational groups (5-6 hours for construction workers and 6-7 hours for metal workers) than for the average (3 hours).

Conclusion

Analyses on the supply side seem to corroborate the results from the demand side that there are some skills shortages in the labour market for occupations embraced by the skilled construction and metal skilled trades. There is, however, mixed evidence on whether such shortages are of a temporary nature and related to the cyclical nature of the sectors that they so closely represent, or whether they are indicative of a general

Figure 5 **Average usual weekly paid overtime hours worked; United Kingdom; spring quarters 1999 to 2003**



Source: **Labour Force Survey**

structural shortage of suitable workers to replace the current workforce, which may get worse as workers retire.

Further information

For further information, contact:
James McNair,
Room B3/03,
Office for National Statistics,
1 Drummond Gate,
London SW1V 2QQ,
e-mail james.mcnair@ons.gov.uk,
tel. 020 7533 6142.

References

Arrowsmith J., 'Jobcentre Plus notified vacancy series', *Labour Market Trends*, July 2003.

Beerten R., Rainford L. and Jones A., 'Changing to Standard Occupational Classification (SOC)2000 – dual coding on the Labour Force Survey', *Labour Market Trends*, July 2001.

CITB, *Construction Workforce Development Planning Brief 2001-2005* (2001).

CITB, *Employers Skill Needs Survey* (autumn 2002).

DfES, *An Assessment of Skill Needs in Construction and Related Industries* (2000).

DfES, *Employers Skill Survey. New Analyses and Lessons Learned* (March 2003).

DfES, *National Employers Skills Survey 2003: Key findings* (2004).

International Labour Office, 'Learning and training for work in the knowledge society', International Labour Conference, Report IV, Geneva (June 2003).

Lind Frogner, M., 'Skills Shortages', *Labour Market Trends*, January 2002.

National Electrotechnical Training, 'Skills and Labour Market Survey for the Electrotechnical Sector', February 2002.

National Electrotechnical Training, 'Framework Document for the Electrotechnical Modern Apprenticeship through Skillseekers', February 1999.

National Institute of Economic and Social Research and Institute for Employment Research, 'Employers Skill Survey. New Analyses and Lessons Learned' (March 2003).

Skills Task Force, 'Intermediate Level Skills – How are they changing?', Research Paper 4 (September 1999).

Skills Task Force, 'SOC 2000. Redefining Skill. Revision of the Standard Occupational Classification', Research Paper 19, December 1999.

Wilkinson, D., 'Towards reconciliation of NES and LFS earnings data', *Labour Market Trends*, May 1998.

Notes

1 Economies are seen to go through what is called a business cycle in terms of economic growth and decline. Thus business cycles are repeated movements, such as boom and slump, that occur through time. Cyclical unemployment represents those jobs lost through a decline or recession in the business cycle. By contrast, structural change refers to long-term or once-and-for-all changes. Structural unemployment refers to the occurrence of long-term unemployment caused by long-term shifts in the nature of production in the economy.

2 'Frictional' unemployment refers to those people unemployed because they are changing jobs, searching for jobs or taking a break before starting with a new employer. There is likely to be some frictional unemployment even when there is technically full employment.

Technical note

Employers Skill Survey vacancy data

In autumn 1999 the Department for Education and Skills (DfES) commissioned an Employers Skill Survey (ESS1999) to inform the National Skills Task Force about the skill deficiencies in the labour market. There was a second survey in 2001 (ESS2001), a smaller survey in 2002 (ESS2002) and a National Employers Skill Survey in 2003 (NESS2003) which was the largest of all.

They are establishment-level surveys covering England. ESS2001 consisted of a total of 27,031 telephone interviews across all sectors and all size bands, in contrast with the ESS1999, which did not include workplaces with fewer than five employees. NESS2003 involved 72,100 interviews.

The occupational dataset contains information on vacancies, hard-to-fill vacancies and skill-shortage vacancies. Skill-shortage vacancies are hard-to-fill vacancies owing to the low number of applicants with the required skills, lack of work experience or lack of qualifications the company demands.

Skill-shortage vacancies are presented as the total number of such vacancies for each occupation, in their density (ratio of skill-shortage vacancies to total employment), and in their intensity (proportion out of total vacancies – more indicative of the skill-related problem).

Jobcentre Plus vacancy data

Jobcentre vacancy statistics are obtained as a by-product of the administrative computer system of the former Employment Service (now part of Jobcentre Plus) and are published monthly. Vacancies are job openings notified by an employer to a Jobcentre. A notified vacancy is one that has been notified within a particular statistical month (in-flow). An unfilled vacancy is one that not been filled at the end of the month (stock). Self-employed vacancies require the jobholder to pay their own tax and National Insurance contributions. Since March 1999 data only cover Great Britain because of problems identified during the introduction of a new system of processing vacancies in Northern Ireland.

The change from SOC90 to SOC2000 made a specific impact on the vacancy statistics and the majority of the occupational classification of vacancies was suspended for two quarters (those ending October 2000 and January 2001), so comparisons with previous data are difficult.

The publication of Jobcentre vacancy statistics since May 2001 was deferred due to distortions in the data caused by the introduction of a new way of handling vacancies within Jobcentre Plus. Publication of some notified vacancy statistics (in-flows), on an unadjusted basis, was resumed from June 2002, although not as National Statistics. The figures from June 2002 onwards are not comparable with the original series (see Arrowsmith (2003) for more details).

The Vacancy Survey, a new series of National Statistics, does not provide a breakdown by occupation.

NES and LFS income data

The New Earnings Survey (NES) is the main source of earnings data in Great Britain (and UK when added to an equivalent Northern Ireland survey). It has sampled 1 per cent of employees (around 150,000) since April 1970, which allows for very disaggregated information on earnings to be produced. LFS questions on earnings were introduced for a fifth of the sample (around 9,000 employees) in the winter quarter of 1992/93, and the sample was doubled from 1997 to improve the accuracy of the data. The NES focus is on jobs, and the data are provided by employers from their payroll records. The LFS focuses primarily on individuals in employment and information is collected from individuals.

The NES provides a detailed breakdown of earnings into its main components: overtime, profit-related pay incentive payments, shift premium payments, and basic pay and all other payments. By contrast, a single gross earnings measure is available from the LFS. The main limitation of the NES is that it covers primarily pay-as-you-earn (PAYE) records, so there is significant underrepresentation of employees earning below the weekly PAYE threshold. NES earnings are consistently higher than from the LFS because of the systematic underreporting in the latter, but this is more acute for part-timers than for full-time employees (see Wilkinson (1998) for more detail).

Comparisons between NES and LFS data on full-time earnings should be more meaningful for the selected occupations under discussion here than for the average occupation. According to the spring 2003 LFS, there is a much higher proportion of full-timers (over 97 per cent and 96 per cent for groups 52 and 53 respectively, compared with over 72 per cent on average for the rest of occupations). This means that most workers in these groups are covered. Probably as a result of this, the proportion of workers with second jobs is actually lower for these occupational groups (2.1 per cent and 1.5 per cent compared with an average of 4.3 per cent). Therefore, for these groups it is reasonable to compare weekly earnings on main job from LFS data with NES data on jobs (which includes main job, second, third and so on). Also, LFS data in 2000 show that the proportion of workers for which income tax is not deducted is much lower in these occupations (1.5 per cent and 4.8 per cent, compared with a remaining average of 8.9 per cent).