

# Skills for Jobs

The National Strategic Skills Audit for  
Wales 2011 – Volume 1: Key Findings

June 2011



# Acknowledgements

Many people have contributed to the production of the Skills Audit. Colleagues from Welsh Government (formerly Welsh Assembly Government) provided valuable feedback on the Audit documents at the various draft stages. Particular thanks go to Susan Edwards, Joanne Corke, John Morris, Edward Sherriff and Barbara Atton. At the UK Commission for Employment and Skills Richard Garrett, Mike Campbell, Lesley Giles, Mark Spilsbury and Paul Drake all played important roles in the project team. The Audit draws on a number of distinct inputs and particular thanks are due to John Reynolds, Colin Fletcher and Nick Jackson at the St Andrews Management Institute (SAMI) for their contribution to the foresight element of the report. Thanks also go to the Sector Skills Councils that produced Welsh sector skills assessment reports to feed into the Audit, as well as to Sally Walters at the Alliance of Sector Skills Councils.

# Foreword

Wales, along with the rest of the UK, has recently emerged from the longest recession on record. The Welsh Assembly Government responded to the recession's challenges by publishing an holistic economic renewal strategy in Summer 2010, focused on creating the right environment for businesses to succeed and contribute to recovery.

Skills form a key part of the strategy. Having the right skills available is crucial if businesses are to pursue ambitious strategies that lead to higher productivity and profitability and individuals are to enter and progress in employment.

The high-level remit of the UK Commission for Employment and Skills (UKCES) is to raise UK skills to help drive enterprise, jobs and growth. Within this remit we seek to provide outstanding labour market intelligence which helps businesses and people make the best choices for them. With this in mind Welsh ministers requested that the UK Commission include Wales within its ongoing work on strategic skills, leading to the production of this Audit.

This report is the first National Strategic Skills Audit for Wales. The Audit seeks to add value by drawing new and existing evidence together into a comprehensive and accessible form and by maximising the value of the UK Commission's extensive programme of research and labour market intelligence.

The production of this document is only the first step in an ongoing process of improving Wales' evidence base on jobs and skills. A number of key sources of updated and enhanced data will become available in the coming months, including refreshed survey evidence on employers' skills needs and updated workforce projections for Wales. These will be incorporated into the next iteration of the Audit and we will seek to strengthen the evidence base in Wales and hence the insights we can draw from the analysis.

The analysis contained in the Audit is intended to be used to inform key decisions on jobs and skills by individuals and their advisers, employers, education and training providers, as well as policy-makers. To maximise impact and understanding, we are publishing this short document, summarising the key findings and messages, alongside a full evidence report. But this is only the beginning of the process: following publication, it is important that work continues to actively share, translate and debate the findings widely amongst different players and action is taken to build on these initial foundations to improve the quality of labour market intelligence produced, disseminated and deployed in Wales.

The more well-informed that individuals and organisations are, the more effective their decisions about jobs and investment in skills are likely to be. This National Strategic Skills Audit has a valuable role to play in helping to make sure that the right skills are developed to meet the demand for future jobs, to raise productivity and to achieve economic success.

**Sir Adrian Webb**

**Chair of the Wales Employment and Skills Board and UKCES Commissioner**

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# 1 The purpose of the report

This publication provides an overview of the key findings of the first National Strategic Skills Audit for Wales 2011: *Skills for Jobs*. The Audit aims to contribute to a better-informed market for skills in Wales, by providing intelligence which helps businesses and people make the best choices for them.

With appropriate interpretation for each of the following audiences, the Audit should help:

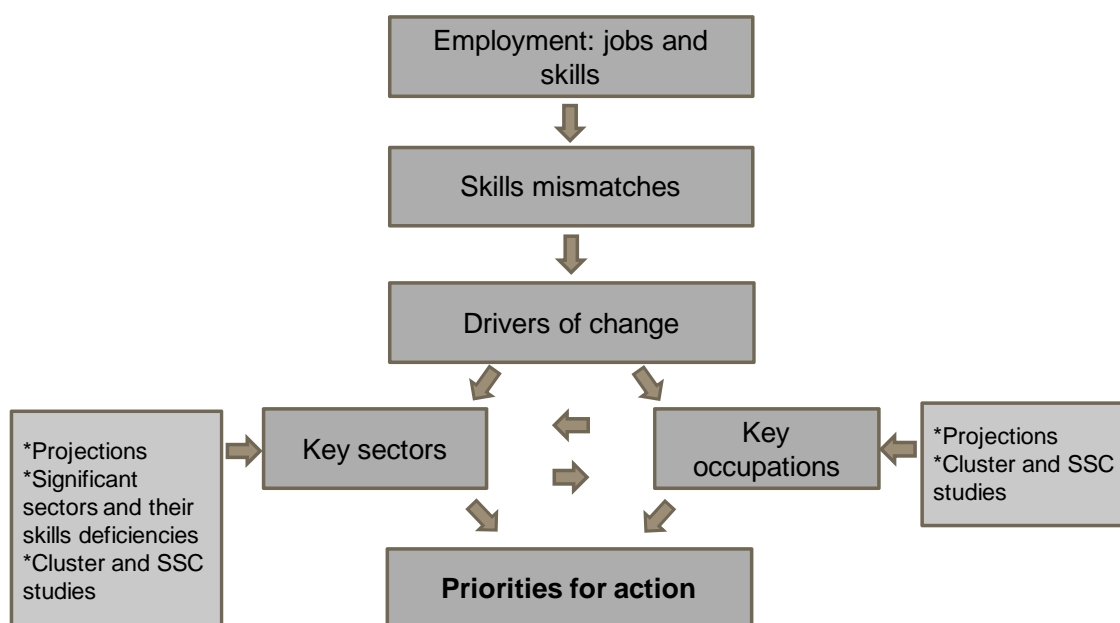
- Individuals to make appropriate, well-informed choices about future learning and career opportunities
- Careers advisers to support individuals in making these choices
- Education and training providers to assess provision and to shape skill strategies that reflect the needs of the labour market
- Employers to work collectively to raise demand, support strategic decision-making within businesses and promote the implementation of a system that reflects need
- Policy-makers to consider policy priorities and resource allocation in the context of a strategic overview of jobs and skills in Wales.

The coverage of the Audit is as follows:

- It describes the key characteristics of employment and skills in Wales
- It provides an assessment of the extent to which Wales' current skill needs are being met, using a framework for assessing the extent and nature of 'mismatch' between the skills we need and the skills available
- It assesses the likely emerging, future skills needs which will arise from the evolution of the economy and labour market, giving particular attention to key sectors and occupations
- It sets out key skills priorities for Wales using a risk-based assessment.

Figure 1, below, shows the overall approach and the inputs used.

**Figure 1: The National Strategic Skills Audit in outline**



The Audit is strategic in the sense that it takes a longer term perspective, providing a systematic overview of skills needs and mismatches, and setting out a sense of direction and priorities.

This overview of key findings, the full evidence report and the associated studies that went into preparing the Audit are available online at: [www.ukces.org.uk](http://www.ukces.org.uk)

### **Evidence limitations**

It should be noted that this first Audit is very much a preliminary stage in the strategic skills programme for Wales and a first, major, step in developing outstanding labour market intelligence for the country. In particular, the analysis is limited by a lack of current employer survey data on skills deficits, with the most recent data source, the Future Skills Wales survey of 2005, being six years old. We have sought to address this through the use of extrapolated estimates of skills deficits (see section 4, below, for details).

In addition, much of the evidence we have of skills deficits in “emerging” sectors (including some of the sectors identified by government as priorities for Wales) is at a UK level.

The existence of these data limitations means that we must be suitably cautious in the conclusions we draw. This is reflected in the framework we use to assess skills priorities, which includes a criterion relating to “degree of certainty”. In the section on future research priorities located at the end of this document we set out the actions we intend to take to improve the evidence base in preparation for the next iteration of the Audit.

## **2 Key messages**

Before turning to the evidence on skills in Wales and the specific skill priorities highlighted by the Audit, we highlight a number of key general messages that should fundamentally shape our thinking about jobs and skills.

### **High quality intelligence is crucial to inform better decisions**

As previously noted, the purpose of this Audit is to provide insight and foresight to support a better-informed market for skills in Wales. It is clear that **better informed participants in the market are likely to make better informed choices, leading to better outcomes for everyone.**

### **Skills for jobs matter**

In order to maximise real opportunity for individuals, drive economic performance, and generate business success, **we need to ensure that all of the players in the labour market focus on “economically valuable” skills when making choices about skills investment.** The supply of skills must be in alignment with demand if we are to avoid the kinds of structural mismatches in the labour market that are examined by the Audit.

### **Greater attention needs to be given to the issue of skill demand**

The Audit draws attention to the variation in the nature and scale of different skills mismatches. Much of our attention has focused on deficiencies of labour supply in the form of skills shortages and gaps. This should not distract our attention from the fact that, in terms of scale, **the issue is primarily one of un-used/under-utilised skills, associated**

**with a deficiency of demand**, rather than one of skill needs that are currently unmet. **Responses are therefore required both on the demand and supply side.**

The unemployed may need to be re-skilled if they are to re-enter employment and take advantage of current and emerging opportunities; but there is little question that **the scale of unemployment reflects a deficiency of demand in the labour market and a need for job creation**. This highlights the importance of potential job creation sectors, including health and social care, hospitality and retail.

Under-utilisation of skills (“underemployment”) can best be tackled by encouraging and supporting more companies to move up the value chain, to become knowledge-intensive work organisations and to raise their demand for (higher-level) skills. An effective response, however, also requires that individuals pursue skills and qualifications that employers really do need which is dependent on the effective transmission of intelligence about opportunities in the labour market.

### **Skill utilisation is key to performance**

An appropriate supply of skills is not in itself sufficient if skills needs that are internal to organisations (skills gaps and underemployment) are to be addressed and firm performance raised. Attention needs to be turned to how skills are used in the workplace, through implementation of work organisation practices like high performance working (HPW).

### **Migrant workers raise key issues for policy-makers**

The presence of non-UK migrants in the Welsh workforce can mask latent mismatches between employer demand and the domestic supply of skills, and it can affect training investment as employers rely on skilled migrants as their preferred source of labour. Indigenous workers have a better chance of competing with migrants for jobs when they can take advantage of improved advice and guidance and when they then have ready access to education and training in the skills that employers require.

### **Action on skills needs to take account of differing needs within sectors**

A clear message from this Audit is that particular sectors have specific skills priorities. These differences need to be understood and acknowledged by all the key players in the labour market as part of their decision-making processes. On the other hand there is also clear evidence of the importance of “cross-cutting” skills needs, which are pervasive across sectors. Further detail on the most pressing sector-specific and “generic” skill needs are set out in the priorities for action section at the end of the report.

### **High level skills and jobs will be critical to the Welsh economy**

The Audit highlights the increasing importance of higher skills and jobs to the economy. Higher level occupations account for the largest share of employment and they are expected to be **the main source of future jobs growth**, contributing almost a half of projected job openings between 2007 and 2017. They are also critical to productivity in the Welsh economy. The most pressing high level skill needs are described in the section on priorities for action at the end of the report.

As noted above, there is also evidence of underemployment in the workforce, comprising formal “over-qualification” and “under-utilisation” of skills. There is evidence to suggest that “real overqualification” is particularly prevalent in lower-level jobs in the service sector. This suggests the need to improve the supply of relevant skills through better informed decisions



but also the need to raise awareness of and encourage employers to fully optimise their employees' skills.

### **Jobs requiring intermediate level skills will continue to be important**

There are also strategic skills issues at intermediate levels, particularly since Wales has a large concentration of employment at this level and intermediate occupations are projected to contribute more than one third of job openings between 2007 and 2017. The Audit highlights the growing importance of technicians, the importance of replacement demands with regard to intermediate jobs in more traditional areas (skilled trades, for example); and the persistence of skills shortages at this level, perhaps seeing only temporary moderation due to the recession. Moreover, skilled trades are expected to be a key part of the skills mix within emerging sectors with high productivity levels, including elements of advanced manufacturing.

### **Generic, employability and basic skills matter**

Much of our focus has been on technical and practical skills that are specific to sectors and occupations but we should not underplay the importance of generic / cross-cutting skillsets that are critical to employability and effectiveness in the workplace. Skills such as customer-handling, problem-solving and team-working are pervasive across the economy and current and future requirements in this area, in combination with technical skills demands, are critical to future competitiveness and productivity. High quality management skills are critical to the co-ordination of processes of strategic change, the effective application of technology within businesses and the optimal deployment of staff capabilities.

### **Low-skilled jobs are expected to persist**

It is expected that significant employment will remain in Wales in parts of the workforce that have traditionally demanded low skills. *Working Futures* projections suggest that around one in six of total job openings will come from lower level occupations between 2007 and 2017 and that such roles will account for a fifth of all jobs in 2017. Low-skilled jobs are expected to be an important focus for job creation in sectors such as retail, hospitality and social care. These jobs are likely to be particularly important for specific segments of the labour market, including those seeking to move out of unemployment and progress through the labour market and people looking to work part-time. The impact on productivity will be less marked than for higher level jobs. Nonetheless, in view of the current economic situation and the scale of the employment challenge facing Wales and the UK this agenda is likely to be high on the list of priorities for government.

## **3 Jobs and skills in Wales**

Turning now to the evidence base, first of all the Audit provides an overview of the characteristics of jobs and skills in Wales as a basis for building an understanding of skills requirements.

Before the recession, the UK enjoyed a prolonged period of economic growth, often out-performing many other EU and OECD countries. Wales shared in this growth although it has lagged behind the UK average in terms of the key indicator of gross value added per head. It is notable that, even following a period of pronounced recession, employment levels in Wales are more than 150,000 higher than they were 15 years ago.

**Wales' economy and jobs are strongly regionally concentrated;** for example, the economic region of South East Wales alone contributes almost a half of all Wales' jobs.

There are also variations in economic structure and employment at regional level – both sectoral and occupational.

With regard to commuting patterns, **Wales has a net outflow of workers**. Around 47,000 people commute into Wales to work but 87,000 Welsh residents work outside Wales. Fluctuations in the level of inward and outward commuting flows, linked at least in part to changing economic circumstances, have the potential to open up skills mismatches in Welsh workplaces.

**The employed workforce is ageing**, in keeping with the wider UK trend. More than 40 per cent are now aged 45 or over, and the numbers of those over 64 in employment has grown by almost 60 per cent in four years, though the age composition of different sectors does differ. Four per cent of the employed workforce are of ethnic minority origin, and this has changed little in recent years. However, the proportion of employment accounted for by those born outside the UK has increased from around four per cent to six per cent since 2004.

**People also predominantly work full time**: more than seven out of 10 do so, though 'atypical' employment is also considerable, and has implications for skills development. More than one in four work part time, one in eight are self employed and one in 20 are on temporary contracts.

While most businesses are small, employing relatively few people, in fact **most people work for medium size and larger businesses** with 50 or more employees.

In terms of the 'sectoral' structure of employment, **the largest sectors are public administration, education and health**, which together account for more than one job in three. Distribution, hotels and restaurants account for around one job in five and banking, finance and insurance one in eight. Manufacturing accounts for one job in ten and construction one in 12.

Relative to the UK there is a higher proportion of employment in primary activities in Wales, including agriculture, and a lower proportion in service activities; although Wales has strong representation in some specific service activities. Manufacturing and construction are slightly "over-represented" in Wales.

Looking at the occupational structure of employment, **the higher skilled groups of managers/senior officials and associate professional/technical employ the largest numbers of people**. Together, they account for more than a quarter of all jobs.

**The distribution of employment by occupation and sector is strongly gendered**. For example men occupy the vast majority of skilled trades and operative employment while women dominate in administrative / secretarial and personal service occupations. This will be a particular issue where occupations with high levels of gender segregation have significant existing and / or future skills shortages.

Where have the new jobs in Wales come from in recent years? Table 1 shows the 10 fastest growing occupations between 2004 and 2009, ranked in terms of percentage growth, along with the predominant qualification level for each occupation.

**Table 1: The 10 fastest growing occupations in Wales 2004 to 2009**

Occupation	2004	2009	Change	% change	Predominant qualification level*
Information and communication technology professionals	7,000	11,800	4,800	69%	Level 4
Quality and customer care managers	3,600	5,800	2,200	60%	Level 3 and above
Health professionals	11,000	17,400	6,400	58%	Level 4
Childcare and related personal services	25,600	38,700	13,100	51%	Level 3 and above
Public service professionals (e.g. social workers)	7,600	11,300	3,600	48%	Level 4
IT service delivery occupations (e.g. IT operations technicians)	5,100	6,900	1,800	36%	Level 4
Customer service occupations	15,600	20,900	5,300	34%	Level 2 and below
Business and finance associate professionals (e.g. financial analysts and advisers)	13,200	17,700	4,500	34%	Level 4
Food preparation trades (e.g. chefs)	16,800	20,800	4,000	24%	Level 2 and below
Hairdressers and related occupations	8,200	10,000	1,800	22%	Level 2 and below

Note: Workplace basis. Includes main jobs and second jobs.

Data are taken from the Annual Population Survey and refer to occupations categorised at the 'three digit' level. A minimum cell size of 40 unweighted cases in 2004 has been applied. Categories that have seen year-on-year growth in fewer than three out of five years are excluded. Figures rounded to nearest 100.

\*i.e. more than 50 per cent of the people in this occupational group are qualified to this level (based on UK data).

Source: ONS (2010) Annual Population Survey

A wide range of occupations are included in the top 10. Prominent areas include ICT-related roles, at management and technician level, and personal service and hospitality roles, including occupations related to childcare, hairdressing and food preparation. Notably, **half of the 10 fastest growing occupations have a dominant qualification level of level 4 and above.**

By contrast, there are a number of occupations which have experienced significant decline over recent years in percentage terms, although in this analysis much of this is due to the impact of the recession in 2008-09. Operative occupations are prominent, including routine assembly, machine operative and process operative roles; together with low-level elementary storage and plant occupations, such as packers and labourers. In addition, several occupations in the administrative / secretarial group have seen declines in employment. Perhaps the most important point to note is that **nine out of 10 of the fastest declining occupations have a dominant qualification level of Level 2 and below.**

**Table 2: The 10 fastest declining occupations in Wales 2004 to 2009**

Occupation	2004	2009	Change	% change	Predominant qualification level*
Assemblers and routine operatives	27,600	15,300	-12,400	-45%	Level 2 and below
Process operatives	24,700	14,600	-10,200	-41%	Below Level 2
Elementary goods storage occupations	17,500	10,900	-6,700	-38%	Below Level 2
Plant and machine operatives	13,800	9,300	-4,600	-33%	Level 2 and below
Elementary process plant occupations (e.g. labourers, packers)	15,600	11,600	-4,000	-25%	Below Level 2
Managers and proprietors in other service industries (e.g. shopkeepers)	24,700	18,700	-6,000	-24%	Level 3 and above
Secretarial and related occupations	35,000	29,400	-5,600	-16%	Level 2 and below
Vehicle trades	13,600	11,500	-2,100	-15%	Level 2 and below
Administrative occupations: finance	33,000	28,900	-4,100	-13%	Level 2 and below
Sales assistants and retail cashiers	83,600	73,200	-10,300	-12%	Level 2 and below

Note: Workplace basis. Includes main jobs and second jobs.

Data are taken from the Annual Population Survey and refer to occupations categorised at the 'three digit' level. A minimum cell size of 40 unweighted cases in 2009 has been applied. Categories that have seen year-on-year decline in fewer than three out of five years are excluded. Figures rounded to nearest 100.

\*i.e. more than 50 per cent of the people in this occupational group are qualified to this level (based on UK data).

Source: ONS (2010) Annual Population Survey

The contraction in employment brought on by the recession has been more pronounced in Wales than at UK level, leading to a slightly higher rate of unemployment currently. Nonetheless, employment levels in Wales grew by 10,000 in quarter four 2010 and employment was 30,000 higher at the end of 2010 compared with a year earlier. It is notable that much of this growth was driven by part-time and temporary, rather than full-time, employment. **The recession has impacted most, in terms of employment, on lower skilled, routine jobs** but some higher level occupations have also contracted. In sectoral terms it has been **most severe on manufacturing and transport storage and communications jobs**.

The qualification profile of adults in Wales is broadly similar to that of the UK, although a higher proportion hold no formal qualifications and a slightly lower proportion are qualified at level four and above.

## 4 Current skills mismatches

Imbalances and mismatches in the labour market can take a number of forms: employers may have difficulty in recruiting the people they need because they are not available in sufficient numbers with the skills they require, people may have the 'wrong' sorts of skills to be able to access job opportunities and people already in work may not be fully proficient in their jobs or may be over-qualified for them. These different types of mismatch all have implications for the key players in the labour market, including learners, education and training providers, employers and policy-makers.

In the following section we examine each of the components of potential mismatch in turn.

It should be noted that in assessing the incidence and level of skills shortages and gaps in Wales we have extrapolated forward the results of the Future Skills Wales 2005 Sector Skills Survey, using National Employer Skills Survey (NESS) data for England. The NESS timeseries extends to 2009, and therefore covers some of the impact of the recession. This involves applying the percentage change, by broad industry, in the level and incidence of

skills shortages observed in England between 2005 and 2009 onto the 2005 baseline for Wales. Full details of the approach used are set out in the evidence report.

#### 4.1 Skill shortages

Skill shortages are vacancies that are hard-to-fill because of a lack of skills, work experience or qualifications in the candidates applying for a role. **The number of skill shortage vacancies (SSVs) in Wales is relatively small.** Using our extrapolations of skills deficits (see above) we estimate that there are currently **around 2,000 across the whole Welsh economy.** This low figure partly reflects the impact of the recession but even prior to the downturn, in 2005, the figure was estimated to be only 5,000, equivalent to 14 per cent of total vacancies (Young and Morrell, 2006).

We estimate that skill shortages currently affect only two per cent of establishments in Wales, down from four per cent in 2005 and that smaller organisations, with fewer than 25 staff, account for the majority of shortages.

Relative to overall levels of employment shortages are believed to be most prevalent in “other” services and finance / business services but also in hospitality. Since 2005 the level of shortages is believed to have fallen most sharply in construction, transport / communication and production.

We believe that associate professional and skilled trades are the occupations which account for the greatest shares of skill shortages. Machine operative shortages are believed to have experienced a steep decline since 2005, along with skilled trades and sales / customer service roles.

#### 4.2 Unemployment and skills

There are around 120,000 unemployed people in Wales, which represents a significant stock of unused skills in the labour market. **Unemployed people tend to be less well-qualified than people in employment and more likely to have past work experience that is focused on lower-skilled jobs.** This represents a significant mismatch between the skills of the former and those most required by employers. The mismatch is most marked among claimants of Jobseekers’ Allowance and people who have been unemployed for a longer period. Nonetheless, a significant minority of unemployed people do possess both higher level qualifications and occupational experience more associated with current labour market requirements. For example, using the ILO definition of unemployment, one in ten of the unemployed have a degree, and more than one third have a qualification at level 3 or above.

#### 4.3 Skill gaps

Skill gaps occur when employees are not “fully proficient” in their job and do not have the skills required to undertake effectively the full range of duties expected. It is important for education and training providers to be aware of skill gaps so that they can understand development needs in the economy.

Skill gaps are more numerous than shortages and, based on our model, are estimated to affect more than 80,000 workers in Wales, around eight per cent of the employed workforce. Their incidence has also increased in recent years, with 20 per cent of establishments reporting at least one gap in 2005, rising to 28 per cent in 2010 (Cutts *et al*, 2011). Skills gaps are pervasive across sectors and occupations but we estimate that they have the highest density, in sectoral terms, in hospitality, finance / business services and “other” services.

We estimate that in occupational terms, **sales / customer service and machine operative roles currently contribute the largest numbers of skill gaps**, as in 2005. The evidence suggests, however, that the most rapid increases in skills gaps between 2005 and 2009 are likely to have been in the higher level roles of managers and professionals. We believe that the highest density of gaps, relative to overall employment levels, is in sales / customer service, machine operative and skilled trades roles.

With regard to the types of skills that are deficient within workplaces, past evidence indicates that almost **a half of gaps can be attributed to a lack of technical/practical skills**. However, in Wales reported deficiencies of some cross-cutting skills, including **problem solving, customer handling, and communication skills**, are at least as prevalent.

#### 4.4 Underemployment

A comparison (by Felstead *et al*, 2007) of the qualification profile of workers in Wales with the qualification profile of jobs, in terms of the level of formal qualification needed to acquire them, suggests that the supply of qualifications exceeds demand at all qualification levels, except at the 'no qualifications' level; i.e. there is a considerable excess of jobs for people with no qualifications. **The excess of supply over demand is greatest at levels two and three.**

This same research suggests that almost **one fifth of employees in Wales are "real-overqualified"**, i.e. **over-qualified in a formal sense but also not utilising their skills fully**. It is believed that this type of mismatch is highest among lower-level service occupations, such as elementary administration occupations, customer service occupations and sales occupations.

Such 'under-utilisation' of skills implies a need for a sustained effort by employers, policy makers and providers to focus on making better use of the skills available in the workplace. It also points to a need to ensure that action is taken to raise further the demand for higher skill levels. Perhaps most importantly it points to the need for individuals to be better informed and encouraged to pursue skills and qualifications that employers really do need.

#### 4.5 Migration

Another potential measure of imbalance between the skills available and the skills needed is migration. To a degree, migrant labour market participation provides a barometer of mismatches between the skills required by the labour market, and those available in the domestic labour force. The response by the UK government to migration is crucial to addressing these mismatches.

**The proportion of people in employment in Wales who were born outside the UK has risen from four per cent in 2004 to six per cent in 2009 but is markedly lower than the UK average of 13 per cent.** Whilst more than 60 per cent of this group were born outside the European Economic Area (EEA), the growth in numbers is accounted for largely by migration within the EEA, with a sharp rise in the numbers coming from the EU accession countries, particularly Poland.

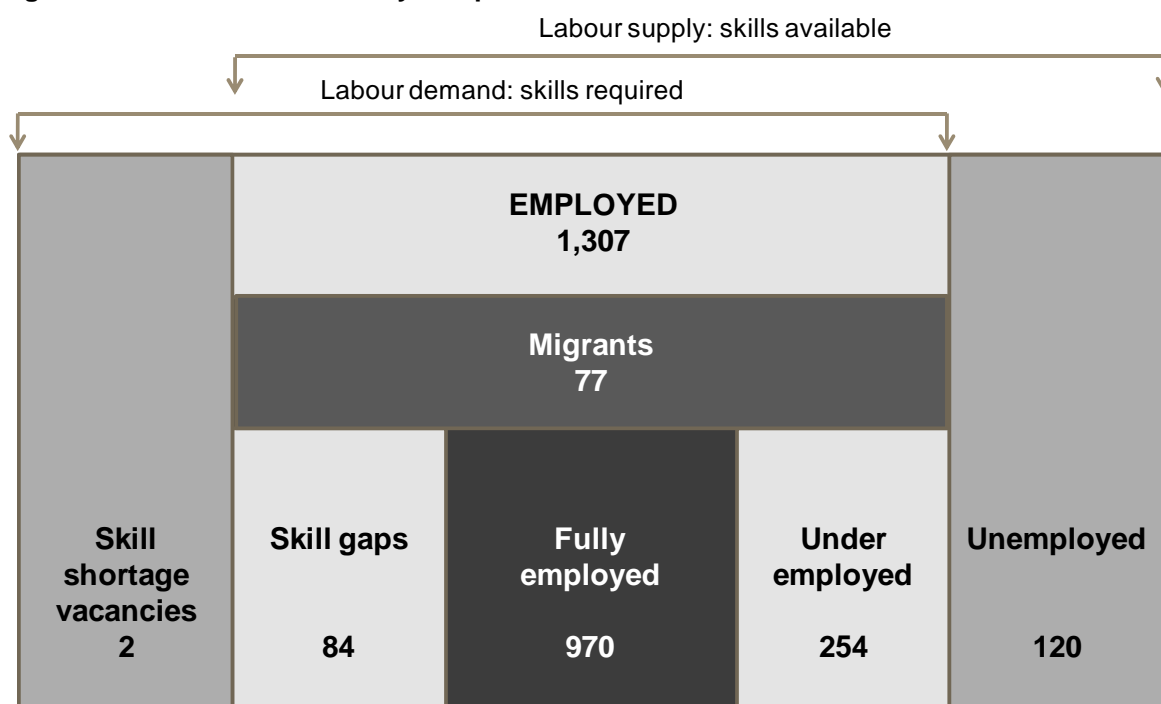
Workers born outside the UK are most numerous in elementary administration and service occupations (which includes cleaning roles and personal service roles such as kitchen staff and waiters / waitresses); operative roles; caring personal service occupations (includes workers in health care and childcare); and health professionals / health associate professional roles.

In sectoral terms service activities account for a large proportion of migrant workers. Key sectors include health and social care, hotels and catering, retail, education, business services and public administration.

#### 4.6 The scale and importance of the different dimensions of mismatch

If we combine together the five dimensions of mismatch we have discussed, we can gain an understanding of their relative scale and importance (see figure, below).

**Figure 2: Skills mismatches: key components**



In quantitative terms the largest issue is that of under-used and unused skills, in the form of unemployment and under-employment, rather than one of excess skills demand in the form of shortages and gaps. Nevertheless, both are important in the context of the Welsh labour market.

## 5 The drivers of change

Looking to the future, the Audit considers how skills supply and demand is likely to change as labour markets respond to trends and developments in the coming years.

The Audit undertakes an analysis of drivers of likely future change to indicate the nature and direction of major types of change, and provide a broad analysis of how they may influence skills demand and supply. Figure 3 provides an outline of the framework used for the analysis.

This part of the Audit is based primarily on extensive work undertaken through a Welsh "futures" study specially commissioned as part of the National Strategic Skills Audit research (SAMI, 2010). The study reviewed 100 or so drivers originally identified at UK level and then assessed their potential impact and likelihoods of occurring within a Welsh context using a process of horizon scanning, expert interviews and a stakeholder workshop.

**Figure 3: The drivers of change**



This largely qualitative analysis can be placed alongside our technical labour market forecasting to add value to our understanding of future skill needs and assist in identifying and specifying skill priorities.

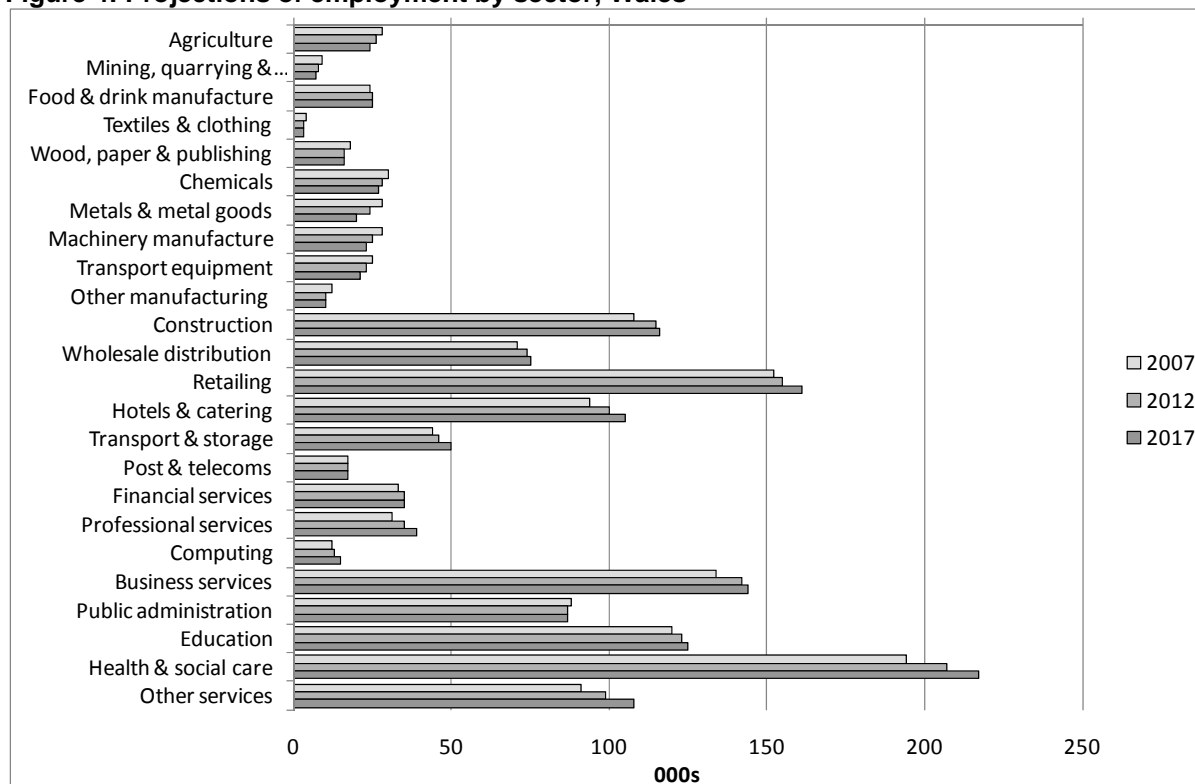
The detail of the results of the drivers analysis is contained in the Evidence Report, Volume 2 of the Audit.

## 6 Key sectors – current and emerging

Which sectors are most significant for Wales in terms of their economic contribution, both now and in the future? Which are likely to perform best in terms of job creation? Also, which sectors are most constrained by skills deficits? The Audit seeks to answer these questions.

First of all the following chart shows the projected pattern of future employment growth by sector.



**Figure 4: Projections of employment by sector; Wales**

Source: Working Futures 2007-17 using CE/IER estimates, CE projections C81F9A (revision 900), 25WA.xls, (Table 3.4a)

Employment is expected to grow in 13 of the 24 industries contained in our analysis and is expected to contract in the remaining 11.

The major growth industries in terms of jobs are expected to be:

- **Health and social care**, with employment expected to rise by more than 20,000, around a quarter of total growth
- **Other services sector**, which is expected to see growth in employment of around 17,000, much of it coming from cultural, sporting and recreational activities
- **Hotels and catering**, with expected growth of 11,000
- **Business services**, projected to see a rise in employment of 10,000 over the period.

These growth industries already account for a large share of employment: close to 40 per cent. They represent a mix of relatively high and relatively low skill sectors. **Any current skill shortages within these sectors may be exacerbated by future expansion and/or restrictive policies (e.g. immigration or domestic policies) and have a limiting impact on growth.**

The Audit also contains an initial preliminary assessment to identify 'economically significant' sectors of the economy which are also constrained by skill deficiencies.

Sectors can be classified as economically significant, first of all, on the basis of their level and / or rate of growth in productivity, and, secondly, on the basis of the level and growth of employment in a sector.

Analysis from *Working Futures 2007-2017* shows that the three sectors with the highest levels of productivity are currently:

- **Mining and utilities**
- **Financial services**
- **Chemicals.**

The three sectors with the highest levels of employment currently are:

- **Health and social care**
- **Retail**
- **Business services.**

The Audit combines the productivity and employment measures into one overall measure of "economic significance" that takes account of levels and growth rates in productivity and employment, and constructs both a measure of "current" significance and one of "future" significance.

We also characterise sectors with skill deficiencies, and do this in terms of skill shortages, skill gaps and a measure of 'qualification/occupation' mismatch, for the current situation. Identifying skill deficiencies in the future is more problematic, and for this, we use the proxy of projected "replacement" demands.

The measures of economic significance and skill deficiencies are combined in a matrix format, one in respect of the current situation, the other focusing on the future (Figure 5 and Figure 6).

Figure 5: A sector priority matrix – current

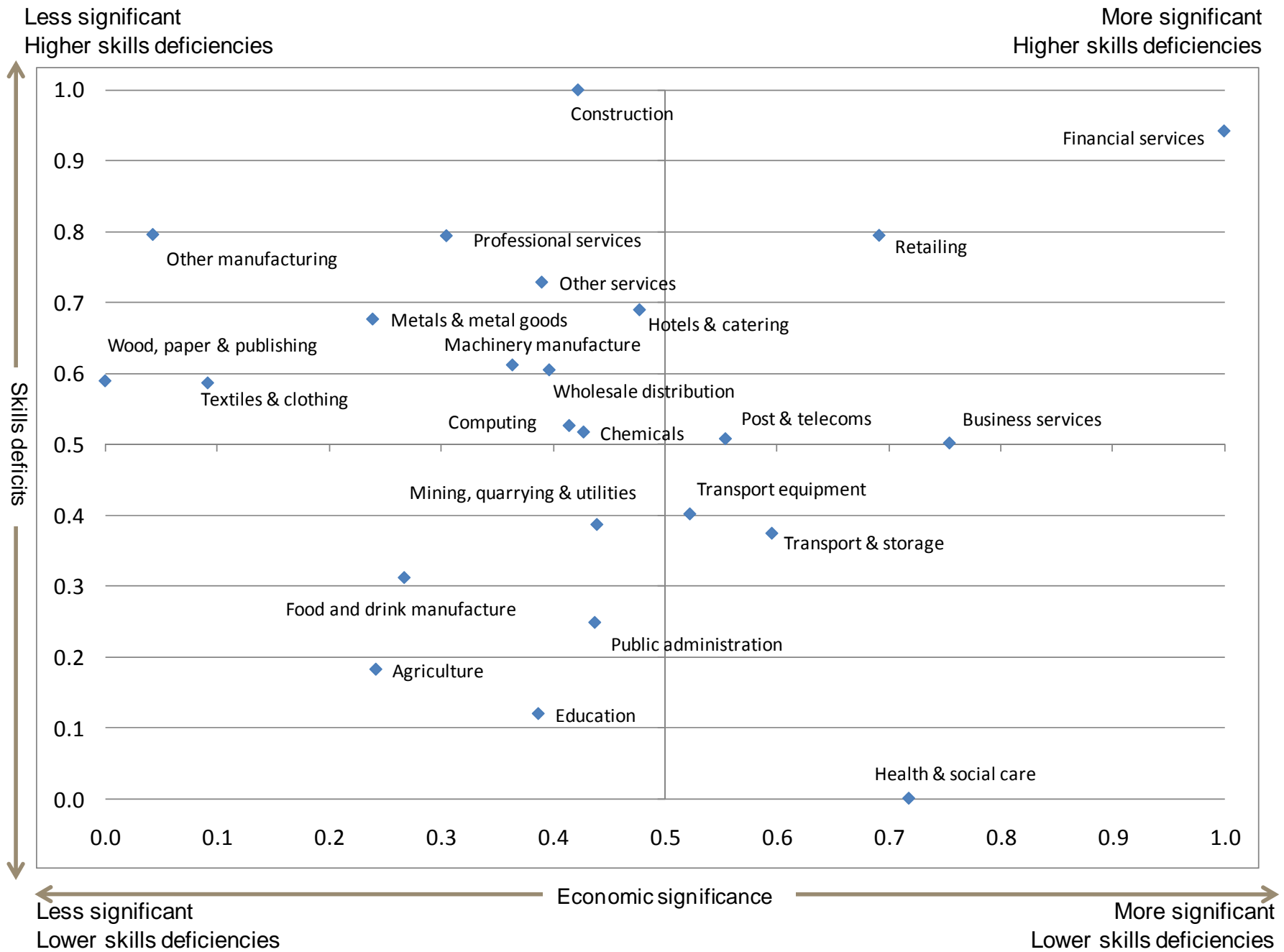
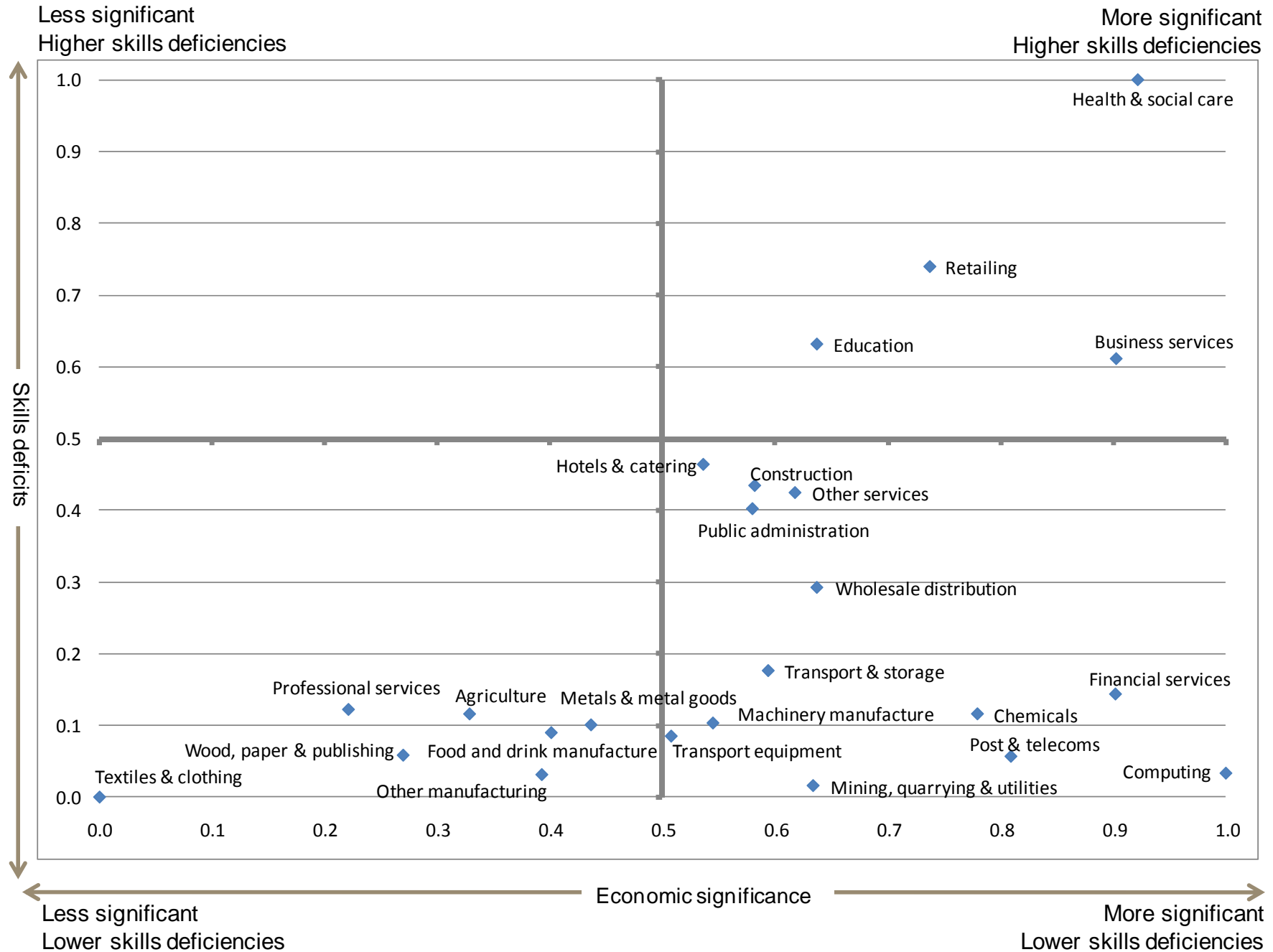


Figure 6: A sector priority matrix – future



Looking at the current situation first, the sectors with the highest relative economic significance while also being constrained by the highest level of skill deficits (i.e. those in the top right quadrant) are:

- **Financial services**
- **Retail**
- **Post and telecoms**
- **Business services.**

It is instructive to compare the results with those for the UK, as presented in the Skills Audit for England (UKCES, 2010). This shows that retail features within the top right quadrant as in Wales; whilst financial services, post and telecoms and business services all lie within the bottom right quadrant, indicating high economic significance but a relatively lesser susceptibility to skills deficits than in Wales.

Looking to the future in Wales, the following sectors display both high economic significance and are expected to have the highest replacement demand for jobs:

- **Health and social care**
- **Retail**
- **Education**
- **Business services.**

A comparison with the UK shows largely similar results to Wales. Health and social care, retail, education and business services all feature in the top right quadrant as in Wales.

**This assessment of key sectors offers insights into the sectors that merit attention in terms of action on skills.**

In *Economic Renewal: a new direction* (Welsh Assembly Government, 2010) Welsh Assembly Government sets out a targeted approach to addressing economic priorities through a focus on six priority sectors. These sectors are the creative industries; ICT; energy and environment; advanced materials and manufacturing; life sciences; and financial and professional services. Since these sectors represent a policy priority in Wales and have been identified as key “emerging” sectors of the economy, the Audit undertakes an assessment of them, based on provisional statistical analysis provided by Welsh Assembly Government, UK “cluster” reports produced on behalf of the UK Commission and Sector Skills Assessments for Wales produced by the Sector Skills Councils. The six sectors are discussed below together with other key sectors of the Welsh economy.

## 6.1 ICT / digital economy

The digital economy covers the provision of technology infrastructure as well as content activities, such as interactive media. However, looking beyond these “core areas”, the wider use of digital technologies to support business activities in non-IT sectors is perhaps even more important.

According to e-skills UK (e-skills UK, 2010), 39,000 people in Wales work in the IT & Telecoms workforce, which is made up of 16,000 people in the IT & Telecoms industry (broadly equivalent to the technology component of the above definition) and 23,000 IT professionals working in non-IT sectors. e-skills UK’s forecasts suggest a rate of growth well in excess of that expected for the wider Welsh economy .

13% of Wales firms are experiencing gaps in the skills of their IT & Telecoms professionals, according to e-skills UK. The changing nature of skills in Wales is predicted to continue to be primarily in high value roles such as **project management, systems architecture,**

**business process, change management, security, risk management, analytics and web / internet development, with an increasing need for customer and business-oriented skills as well as sophisticated technical competencies.** In the immediate term (1-3 years) employers report a priority need for IT & Telecoms professionals to have **high level security and data protection skills** to enable them to develop, integrate and maintain security solutions across many different systems and applications.

Turning to the wider economy, evidence from e-Skills UK indicates that **the incidence of IT user skill gaps in Wales is significantly higher than the UK average**, with growing development needs for IT user skills at "advanced" or higher level and at lower levels for workers who do not currently use digital technology at work.

Skillset's sector skills assessment of the creative media sector (Skillset, 2011) highlights skill needs in the following areas:

- Multi-platform skills for digital content: the creative and technical skills to produce content for distribution across all potential platforms, to work in cross-functional creative / technical teams and the ability to understand and exploit technological advances
- Management and leadership, especially project management for multi-platform development
- Intellectual property and monetisation of multi-platform content to take full advantage of emerging markets and to deal with the problems of illegal downloading and copyright infringement.

## 6.2 Energy and environment

This sector covers a range of activities including low carbon energy, energy efficiency, energy storage and infrastructure, pollution control, environmental management and research and consultancy. It is estimated to have employment of around 32,000 in Wales; moreover the number of employees working in the sector is estimated to have grown by more than a third between 2005 and 2009 (Welsh Assembly Government, 2011).

The available evidence on skills needs mainly relates to the low carbon energy sector. Wind and nuclear are expected to be the most important sectors in driving growth between now and 2020, given the ambitious plans for installing new capacity and this is likely to lead to the creation of relatively large numbers of jobs in construction and installation (PwC, 2010a).

**The growth of the low carbon sector is likely to produce a general demand, albeit relatively small, for the supply of engineering, science and specialist professionals.**

The low carbon sector will therefore need to compete for science, technology, engineering, and mathematics (STEM) graduates with the economy as a whole.

The imperative to move towards more efficient means of **energy consumption** will also have widespread implications for skills within existing jobs as well as leading to the emergence of new job roles. For example, electricians may need to develop additional skills around installation of solar PV panels, whilst a new specialised role of solar PV panel fitter may emerge (UKCES, 2010).

## 6.3 Advanced materials and manufacturing

Businesses in this sector use a high level of design or scientific skills to produce innovative and technologically complex products and processes. *Economic Renewal* highlights the automotive, aerospace and electronics industries as particular strengths for Wales in this area.

It is estimated that there are around 43,000 employees in the advanced manufacturing sector in Wales, although this number fell by around five per cent between 2005 and 2009 (Welsh Assembly Government, 2011). Many elements within advanced manufacturing are expected to see a continuing decline in their employment levels but significant replacement demands will create future job openings.

Key points about skill needs in this sector are as follows:

- High-level technical skills are key and need to be addressed through an effective supply of STEM graduates, post-graduates and post-doctoral researchers, with an understanding of specific technologies or of the underlying sciences
- Skills development needs to support the multidisciplinary approach that is critical to exploiting the wide range of application areas for cutting-edge technologies
- Effective exploitation and commercialisation of emerging technologies requires capable and competent technical support staff
- Commercialisation of new technologies within short life-cycles demands skills in intellectual property (IP) management, new product and process development and implementation, production and manufacturing engineering, and marketing.

#### **6.4 Creative industries**

This diverse sector covers activities ranging from advertising to radio and TV to computer games but firms in the sector share a common focus on creativity for business success, communication and customer focus.

It is estimated that these industries employ more than 30,000 people and this area has seen good growth performance in recent years (Welsh Assembly Government, 2011).

Current skills issues include recruitment into the sector due to an over-supply of potential entrants but mismatch between their skills and those the sector needs. Looking across the various creative sub-sectors this particularly relates to sales and marketing skills, multi-skilling and using specific software packages. Lack of creative talent is also a key issue.

The skills needs associated with digital media have already been considered (see paragraph on the digital economy). In addition to these, there is a wide range of skills shortages and gaps, including in the following areas: broadcast engineering; archiving; sales and marketing; foreign language skills; fundraising skills; and creative skills, in areas such as story-writing and music composition.

The outlook for growth is uncertain. The sector has been hard hit by the recession and it is felt that developments in multi-platform and digital output will be important to future prospects (Skillset, 2010).

#### **6.5 Life sciences**

The life sciences sector covers pharmaceutical, medical technology and medical biotechnology activities and makes a major contribution to UK output. It is estimated to employ around 13,000 people in Wales (Welsh Assembly Government, 2011).

A range of skills are currently in short supply at UK level, including biological skills, such as biochemistry and clinical pharmacology; chemistry, in areas such as analytical chemistry, synthetic chemistry; and physics; and chemical engineering. In future the level of knowledge

and skills expected from graduates and postgraduates is also expected to be higher, wider and require a more inter-disciplinary approach (Hogarth *et al*, 2010).

The sector will also need a competent technical workforce for its manufacturing activities, including technicians, skilled trades and machine operatives.

The UK forecast for the sector is, at best, one of stable employment levels, although significant replacement demands are expected.

## **6.6 Professional and financial services**

Financial services include banking, insurance and asset management, while professional services comprise architectural and engineering services, housing and property, and legal services.

It is estimated that around 124,000 employees work in this area, making it the largest of the economic renewal sectors; although it is under-represented in Wales, accounting for 15 per cent of total employment compared with an UK average of 20 per cent.

As a result of the recession, forecasts of future financial services employment in the UK indicate muted growth at best. Globalisation will have a major impact, with the axis of financial trading potentially shifting to a number of Asian cities, while technology will allow businesses to disperse their activities, including back office functions, globally.

Regulation, globalisation and consumer demand will drive future skills needs. Demand is expected to grow for high level roles like actuaries, as well as IT and legal staff and sales and customer service roles. The introduction of the Retail Distribution Review in 2012 will impose a requirement to hold a level 4 qualification for investment advisors in the financial services sector.

The recession has also had negative consequences for professional services. Nonetheless a range of skills needs are expected in the future. For example, sustainable development expertise will be required in housing and property while the legal services sector will need to up-skill in response to a move to market-based Legal Aid procurement (Skills for Justice *et al*, 2009).

## **6.7 Retail**

Retail currently employs around 150,000 people in Wales and it is projected that there will be almost 70,000 job openings, mostly due to replacement demands, in the period from 2007 to 2017.

Growth in retail may be constrained by the impact of slow economic growth on consumer spending, a continuing switch toward online spending and the roll-out of labour-saving technology such as self check-out facilities (Skillsmart Retail, 2010).

The key skills challenges the sector is expected to face in the future are around:

- Improving customer service and product knowledge to meet increased customer expectations
- Enhanced web design skills, frontline administration, data analysis, logistics and distribution to support online retailing development



- A need to adapt human resource management practices to take account of a reduced availability of young people as potential recruits and the growing prominence of older people in the retail workforce.

## 6.8 Construction

Based on the results of our model, construction has a middle ranking position in terms of its economic significance to Wales, both currently and in the future. The sector currently employs over 100,000 people with projected replacement demands of more than 40,000 for 2007-2017.

Historically, the sector has been highly susceptible to skill shortages, particularly in respect of skilled trades roles. However, there has been a significant reduction in shortages since the recession.

ConstructionSkills' own forecasts of the future performance of the sector at UK level, based on its "core scenario", suggest that construction output will begin to recover towards the end of 2011 but that sector growth, at around 1.6 per cent per annum, will be below the average rate of GDP growth. Even this modest forecast is based on assumptions of continued strength in the infrastructure sector, a return of investor confidence in the commercial sector and a recovery in private sector housing demand (ConstructionSkills, 2010).

## 6.9 Hospitality

Employment in hospitality is projected to grow strongly in the period to 2017, according to the *Working Futures* data used in our model and replacement demands are projected to be significant at almost 50,000 for the period 2007 to 2017. Growth, however, will be heavily dependent on the outlook for consumer spending.

The key skills priorities facing the sector relate to chef skills, a need for enhanced customer service in the face of increasing customer expectations and a need for improved management skills linked to structured development pathways. There is also a requirement for enhanced support for those thinking about starting their own business in the sector (People 1st, 2010).

## 6.10 Health and social care

Health and social care is a labour-intensive sector that makes that largest contribution to employment of any examined in our model but has a low level of productivity relative to other sectors. This positioning is not expected to change markedly in the period to 2017.

The available evidence suggests that the sector currently has a moderate level of skills deficits, with caring personal service roles being the occupational group principally affected by gaps and shortages. Turning to our indicator of future skills needs, however, health and social care is expected to have the highest replacement demands of any sector in Wales, projected to be in the region of 75,000.

## 7 Key occupations

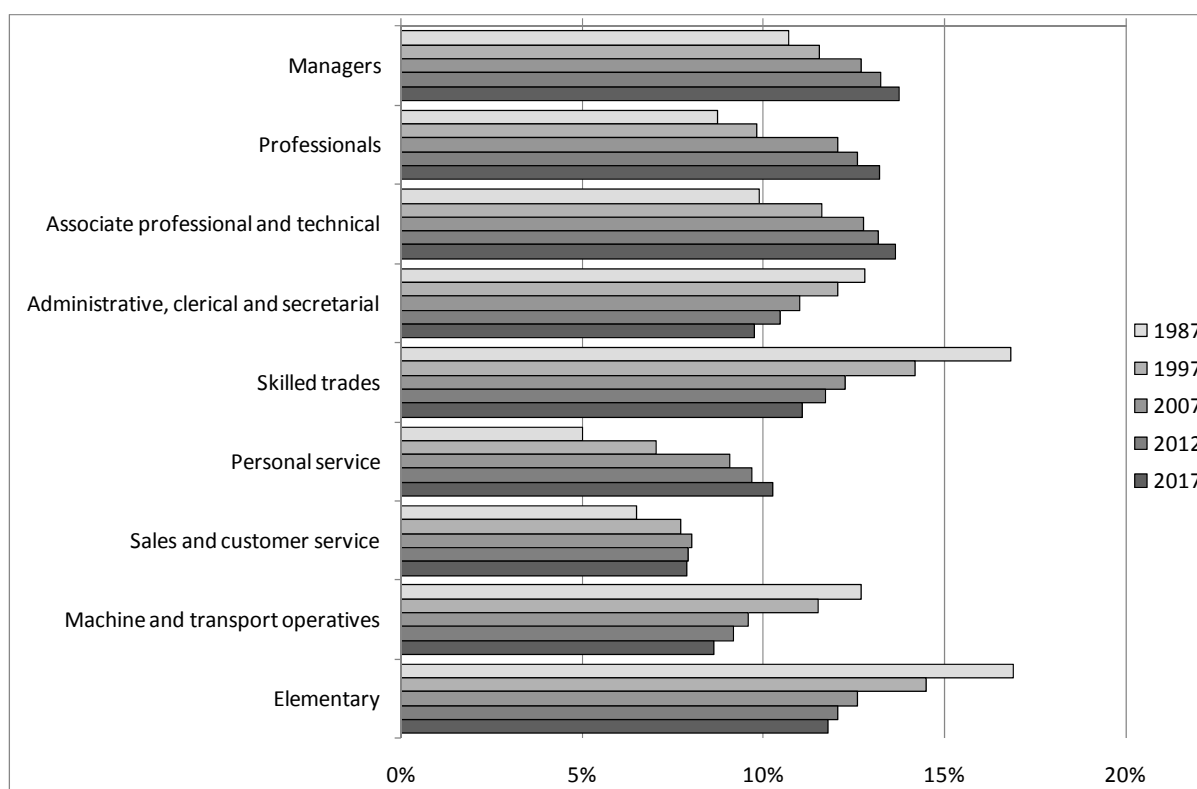
Our forecasts suggest that, in broad terms, expansion in the number of jobs is most likely in the higher skilled groups of managers, professionals and associate professional / technical roles. Indeed, growth in these three groups in the period to 2017 is likely to be equivalent to the entire net increase in employment for the period. These jobs account for 37 per cent of current jobs and are projected to account for 41 per cent by 2017 – a growth of more than

70,000 jobs. The other key area of growth is personal service occupations, where 24,000 additional jobs are projected to arise.

A contraction in the number of jobs is expected in administrative / secretarial, skilled manual trades and operative occupational groups. However, it is expected that, by 2017, more than 400,000 jobs will still exist in the “bottom” three occupational groups of sales / customer service, machine / transport operatives and elementary occupations – 28 per cent of all jobs in Wales.

If we take a longer term view of both the past and the future, we can see the long term structural changes in occupational structure very clearly (see Figure 7)

**Figure 7: Changes in occupational structure in Wales 1987-2017 (% of employment)**

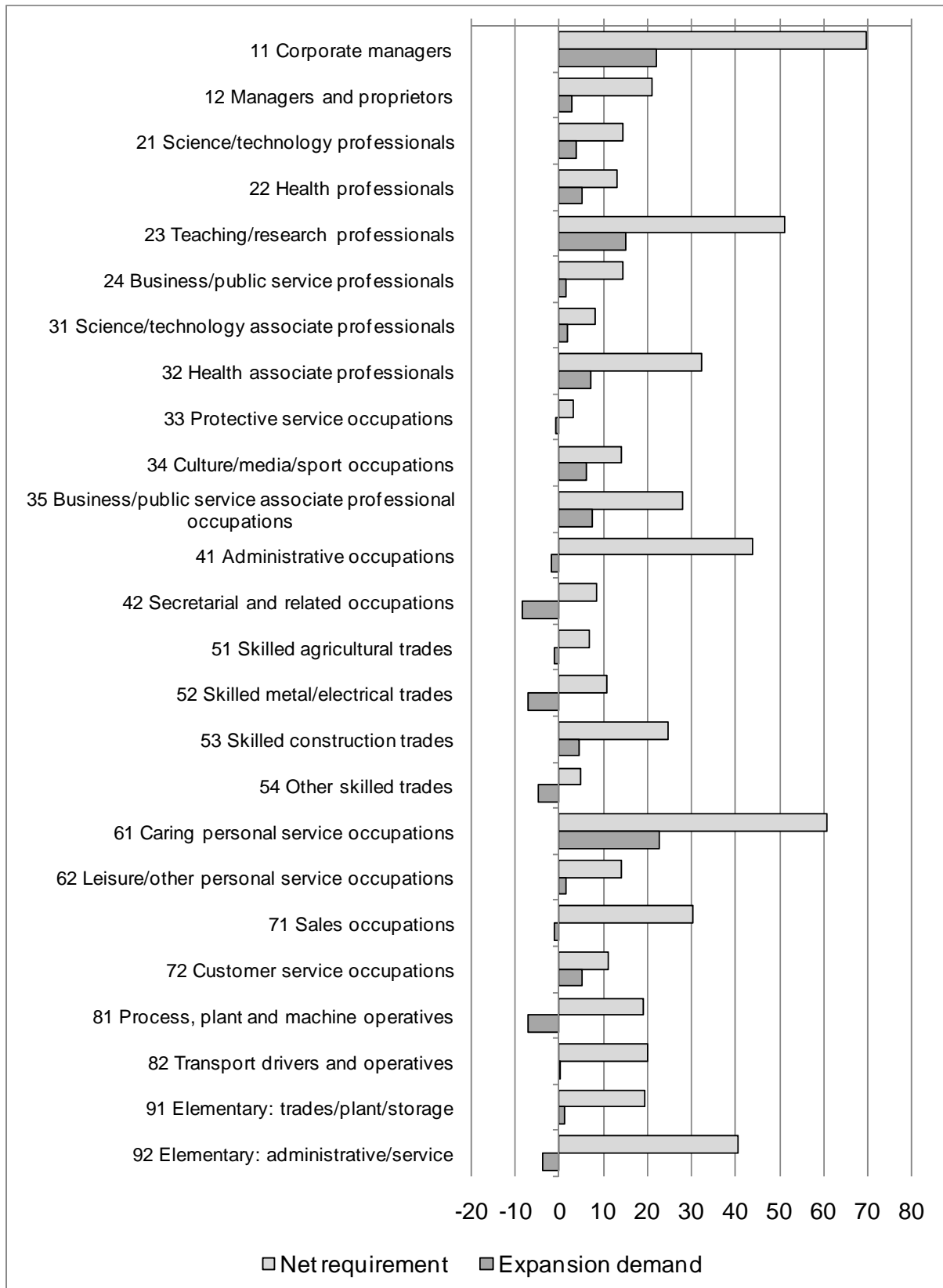


Source: Working Futures 2007-17

Job openings also arise as current jobholders retire as well as from net job creation. Figure 8 thus shows the anticipated additional “expansion demand” together with the net requirements of occupations which also includes “replacement” demand.

To put this into context, the total net requirement in Wales is for more than 580,000 job openings between 2007 and 2017, only 73,000 of which is new, structural demand. The vast bulk, the remainder of more than 500,000, is for replacement demand.

**Figure 8: Net requirements by Standard Occupational Classification (SOC) 2000 sub-major group (000s), Wales, 2007-17**



Source: Working Futures 2007-17

Taking account of replacement demand is critically important as it represents jobs where skill replacement will be required. **The occupational groups with the largest projected volumes of replacement demand are corporate managers, caring personal service occupations, teaching/research professionals and administrative occupations.**

The Audit qualifies the results of the quantitative projections of occupational change using a range of sources, including sector-level studies produced by Sector Skills Councils. This provides corroborative evidence of future growth in demand in a range of areas. In most cases the growth consists of a combination of increased occupational demand (i.e. employment growth) and increased skills demands (i.e. a change in the skills required within the occupation).

**The occupational areas which we believe show the greatest evidence of demand are:**

- **IT professionals, particularly in computing**
- **Front line caring personal service occupations, including care assistants**
- **Culture, media and sport roles**
- **Front line customer care functions**
- **Teaching professionals**
- **Managers across a wide range of sectors (includes a diverse range of skills demands)**
- **Associate professional and technician roles across a wide range of private and public sectors.**

## 8 Priorities for action

In its concluding section the Audit seeks to identify the skills which are strategic priorities for action, both currently and in the future. It focuses on the most pressing areas that have been identified in the analysis, which are accentuated when the data is brought together.

A risk based approach is used to assess skills priorities based on the following criteria:

- Degree of certainty –the likelihood of the drivers of the skills demand materialising, and, the risk of supply failure
- Magnitude – in terms of the scale of action required, based on a broad assessment of the numbers of jobs that need filling
- Lead time –the length of time that will be needed to rectify the skills deficit
- Criticality – in terms of the potential risk to economic growth and development.

### Red – high priority skills needs for immediate action

**A growing requirement for corporate managers across a wide and diverse range of sectors** with evidence of current and emerging skills deficits. The sectors include health and social care, business services, hospitality and retail.

Degree of certainty is high since this is a well-established trend in the labour market. Magnitude is clearly large for this pervasive occupation, with 20 per cent growth projected in many of these sectors in this occupation. Criticality is also high since the performance of the management function is central to both individual industries and the wider Welsh economy. The Audit also gives a red rating to economy-wide skills needs relating to managers' capability in effectively **exploiting technology**.

**Continued growth in demand for health associate professional (including nurses)** in response to the ageing population and other key drivers. The only constraint on this trend is the ability of the state and individuals to pay for health services. The magnitude of this need is medium to large, while action requires a medium to long lead time.

**Continued demand for workers in skilled trades occupations** to meet the needs of construction, manufacturing, utilities and the low carbon economy. It is expected that there will be no net growth in employment (aside from niche areas) but there will be significant replacement demands in many areas giving a magnitude rating of large. This is also an area of persistent historic skill shortages. Skilled trades are central to a range of industries, some of them identified as priorities, and important to the wider economy through supply chains and as a progression route to technician roles.

**Growing demand for caring personal service occupations including care assistants in the social care sector.** There are powerful forces driving demand in this area, including an ageing population, growing consumer expectations of care services and an increased incidence of long-term health conditions. This a large occupational area with significant projected expansion and replacement demands. The lead-time for addressing this need is potentially short but criticality is high in terms of contribution to employment and supporting societal well-being.

**Pink – high priority skills needs which are of importance rather than critical to the economy and/or distinct sectors but where deficits are smaller in scale and require a shorter lead time to rectify than for those rated red**

There is a widespread need for **change management skills** to address the impact of public sector reform, technological change, increasing consumer demands and global competition, requiring continual change in business operations and workplace organisation. This is a large and pervasive skill need with a medium lead time.

**Specific management capability to drive innovation and the commercialisation of products in new markets.** This skillset is increasingly important to the competitiveness of advanced manufacturing industries and is central to survival and success in global markets. The magnitude of this need is estimated to be small and the lead time is of medium duration.

**IT professionals** will be required to support the development of the ICT sector and the digital economy, including an immediate priority need for high level security and data protection skills. This need is of medium magnitude and medium lead-time in view of the skills at level three and above that are required.

**Significant demand for teaching professionals in the education sector** with a need to adapt to the changing nature of teaching roles and developing modes of delivery. This need is potentially of large magnitude but the volume of demand could be constrained by public spending cuts and need for efficiency savings.

**A likely requirement for health professionals** to meet the growing demand for healthcare services. This is expected to be of medium magnitude with a long lead time for skills development.

**Demand for technicians who can install, maintain and run complex equipment and have an holistic understanding of innovation and whole product / process lifecycle.** Sectors affected include advanced manufacturing and process sectors. This need will be of small / medium magnitude and will come in the form of moderate net growth in employment

plus significant replacement demands. Addressing the need will be critical to business strategies around moving into higher value added markets.

**Growing occupational and skills demands in customer service**, including in business services, financial services, hospitality, as well as after-care services in manufacturing. This is a large occupational area with significant projected growth and is essential to the quality of service delivery. The lead time to address this need is judged to be short, however.

**A wide-ranging need for skills to support greater efficiency in terms of energy consumption and resource utilisation.** It is difficult to assess the full scale of this need but there is already evidence of emerging and existing skills needs linked to the “greening” of job content in response to consumer pressure, regulation and carbon / waste reduction targets.

An economy-wide need to enhance **cross-cutting employability and basic skills**. The evidence suggests that the most prevalent needs relate to:

- Communication
- Literacy and numeracy
- Team working
- Problem solving
- ICT skills at a number of levels.

Some deficits of cross-cutting skills affect roles at all levels. The lead time for addressing these skills needs varies: some generic needs can be addressed quickly but basic skills issues are not as susceptible to quick resolution. In combination with specific technical skills, these cross-cutting skills are critical to performance in the workplace in all sectors.

A growing demand for **Welsh language skills**, particularly in customer-facing roles in sectors such as public administration, education, hospitality and passenger transport. This need is evidenced by SSC analysis and is critical for the sectors in question. The lead time for addressing this deficit is medium to long.

**Amber – medium priority skills needs of moderate scale and/or time frame for action where the degree of certainty of their impact may be less**

**Management capability in supporting multi-platform content creation in digital and creative media.** This calls for managers who have a hybrid of skills combining effective leadership with project management, innovation, creativity and understanding of technology, and the analytical skills to understand audience interests. Although this area is already a priority for the key sectors concerned, its overall magnitude in Wales is rated as small with a lead time of medium.

A need for increased management capability in **procurement, commissioning and financial management** across a range of private sectors such as facilities management, life sciences as well as government and health. The constrained financial conditions created by the recession mean that these skills are critical to winning business and ensuring value for money in the public sector. Although managers with purchasing responsibilities represent a substantial group of medium size, the lead time for addressing this issue is short.

**Demand from the life sciences sector for highly-qualified science and technology professionals.** The postgraduate skills required have a long lead time and are central to

the performance of businesses in this priority sector. However, the evidence for this skill need currently resides largely at UK rather than the Welsh level and the anticipated size of any need is small.

**STEM skills across a range of disciplines for high level occupations in manufacturing.**

These skills are required to drive the innovative capability that is critical to the success of businesses in competitive global markets. Relatively small numbers of highly skilled / qualified individuals are required but they are of critical importance to the performance of businesses and sectors and the lead time for postgraduate qualifications, specialist training and workplace orientation is long.

**Science professionals to support roll-out of infrastructure for low carbon economy.**

The emergence of this need is believed to be highly likely but scale depends on government intervention, the level of private investment in innovation to compete globally and appeal of low carbon products / services in marketplace. Magnitude is expected to be small to medium in employment terms but lead time for development of skills or adaptation of existing skills is felt to be medium.

**Current shortage of food technologists in food and drink manufacturing.** This need is of small magnitude with a long lead time but there is strong evidence of its existence and it is critical to the future of the industry in UK / Wales.

**Demand for skilled actuaries to monitor and assess risk in the financial services sector.** There is strong evidence at UK level of this need but it is less conclusive for Wales. It is judged to be of small magnitude but with a long lead time.

**Increased skills demands for investment advisers working in financial and professional services.** The Retail Distribution Review in 2012 will impose a mandatory requirement of holding a level 4 qualification for investment advisers creating a small to medium skill requirement with a medium lead time for action.

A small to medium requirement for **skilled advice workers, counsellors and community development workers** in public and voluntary sectors is likely, although spending cuts may act as a constraint on demand.

**Sports coaches and fitness instructors in the active leisure sector.** There is evidence of existing deficits in this area and this may intensify in the medium to longer term with a more active ageing population.

**Current skills deficits for chefs in the hospitality sector.** There is strong evidence of shortages and gaps in this area, which may be exacerbated by limits on inward migration. The potential knock-on effects extend to related areas such as tourism. However, the magnitude of this deficit is rated as medium with lead times for addressing the issue also medium.

This assessment of priorities is a preliminary one and relies on a degree of professional judgment applied to the large body of evidence and analysis contained in the Audit. Nonetheless, we believe that it provides a foundation for further dialogue on the skill priorities for Wales. We hope that the process of publishing and disseminating the Audit will enable the key “change agents” in the labour market - individuals and their advisers, employers, education and training providers, public agencies and government – to discuss the findings and adapt their decisions, plans and policies in the light of intelligence on current and future skill needs.

## 9 Future research priorities

In order to develop further our understanding of skills needs in Wales, the UK Commission proposes to:

- Support the development and implementation of an UK-wide skills survey to provide robust, consistent and timely data on employer skills requirements at national level
- Work with Welsh Government to enhance our assessment of the skills needs of the priority sectors identified in *Economic Renewal*
- Consider approaches to assessing the varying pattern of skills needs at sub-national level
- Incorporate in to a future Audit the results of an updated set of *Working Futures* projections which take account of the impact of the recession and structural change on the labour market and skills
- Consider how best to deepen our understanding of the different dimensions of the key issue of underemployment
- Enhance the skills assessment analysis with regard to gender-related issues.



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This document is available at  
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ISBN 978-1-906597-91-7  
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