

# BULLETIN

## Working Futures 2010-2020

Working Futures 2010-2020 is fourth in a series of labour market assessments that provide detailed projections for the UK labour market. It focuses on a ten year horizon, giving a picture of the labour market for 2020; including employment prospects for industries, occupations, qualification levels, gender and employment status for the UK and for nations and English regions. The core purpose of Working Futures is to inform policy development and strategy around skills, careers and employment.

### Key findings

The projections are based on a macroeconomic scenario of a slow recovery from recession, with the UK economy generating around 1½ million additional jobs by 2020.

The working age population and workforce are projected to rise significantly but labour market participation rates are expected to fall slightly, reflecting the ageing of the population.

Manufacturing is projected to maintain its share of total output (at around 11 per cent) up to 2020, but to see a small fall in its share of employment, from 8 to 7 per cent of the total, as a result of increased productivity.

Private services are expected to be the main source of jobs growth, with employment in this part of the economy projected to rise by more than 1.5 million (+9 per cent) during the full period of 2010-2020, increasing its share of total employment from 55 per cent to 58 per cent. Business and other services will be a particularly crucial component, with growth of more than 12 per cent, equivalent to more than 1 million additional jobs.

The period is expected to see a shift in the balance of the economy away from public sector activities. The share of total employment accounted for by non-market services is projected to fall from 27 per cent in 2010 to 25 per cent in 2020.

There is forecast to be a continued trend of employment growth in higher skilled, white collar occupations, including managers, professionals and associate professional roles. The study estimates 2 million

additional jobs in these occupations by 2020. These three occupations are projected to increase their share of total employment from 42 per cent to 46 per cent over the 10 year period.

Continuing sharp declines in employment are expected for skilled and semi-skilled manual roles, including in skilled trade occupations and process, plant & machine operatives. Between 2010 and 2020, 400,000 such manual jobs are forecast to disappear, reducing the combined employment share of these occupations from 18 per cent to 16 per cent.

Administrative and secretarial occupations are projected to see a loss of almost 400,000 jobs, a fall of around 11 per cent, largely as a result of the continuing impact of technology in the workplace. There is still expected to be around 3 million jobs in this occupational area by 2020, but its share of employment will have fallen from 12 per cent to 10 per cent, according to the projections.

Lower skilled jobs will remain a significant component of the labour market. There is expected to be an increase of more than 300,000 jobs in caring, personal and other service occupations (+10 per cent) and 100,000 (+3 per cent) in low-skilled elementary jobs between 2010 and 2020, again mostly in service-based areas.

Job openings created by those who leave the labour market (i.e. replacement demands) are projected to generate around 12 million job openings between 2010 and 2020, many times more than the 1.5 million openings from the creation of new jobs. Replacement demands will lead to job openings for all industries and

occupations including those in which the net level of employment is expected to decline significantly. This has important implications for individuals who may be considering their future career and education and training options, since even those occupations where employment is projected to decline may still offer good career prospects.

The demand for skills as measured by formal qualifications is projected to rise, as is the supply of people holding higher level qualifications. The number of jobs in occupations typically requiring a degree is expected to continue to grow, but perhaps more slowly than previously forecast.

The southern part of England is expected to see more rapid employment growth than the devolved nations and the northern regions of England. Almost half of the growth in jobs in higher level occupations will occur in London, the South East and the East of England.

These points are explored in greater detail in the remainder of this Bulletin and in the main Working Futures reports (see <http://www.ukces.org.uk/publications/er41-working-futures-2010-2020>).

### Macroeconomic context

In developing any assessment of labour market prospects it is important to set things into a proper macroeconomic context. The latest Working Futures projections were developed during a period of considerable turbulence in world financial markets. Concerns about the on-going problems of Sovereign debt, and in particular the difficulties in the Eurozone, make it unclear if a further recession in Europe and the UK can be averted.

In such circumstances producing robust economic and labour market projections is particularly difficult. The baseline macroeconomic forecast underlying the results was developed in the first half of 2011 and assumes that a gradual recovery in confidence will bring about renewed growth in the UK economy, and that this will sustain employment growth in the longer-term (2010-2020). This forecast could underestimate the possible short term downturn that might affect the economy if the problems in the Eurozone are not resolved.

Despite these uncertainties the economy is projected to continue its recovery, and to settle down in the medium term to a pattern of modest growth, with only moderate rates of inflation. Measures of economic output such as Gross Domestic Product (GDP) and Gross Value Added (GVA) are projected to display long-term growth rates of around 2½ per cent per annum.

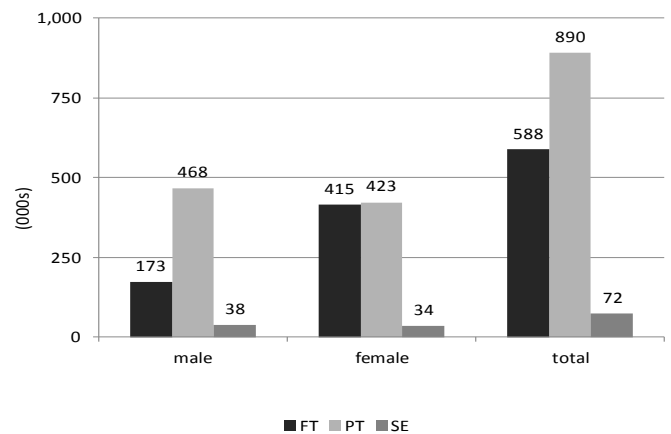
### Labour market prospects

Employment is projected to rise slowly but steadily over the decade as a whole, driven by a significant increase in

population levels. The long-term rate of employment growth (jobs) is expected to be around ½ per cent per annum, resulting in around 1½ million additional jobs by 2020.

The working age population and the workforce are also projected to rise significantly. Labour market participation rates are defined as the proportion of the number of those economically active (i.e. those in employment or actively searching for work) expressed as a proportion of the working age population (those aged 16+). They are projected to fall slightly. This reflects the overall ageing of the population. Declining trends for males, despite the efforts of government to postpone retirement ages, are offset by increases amongst some female age categories.

**Projected Changes in Employment in the UK by Status, 2010-20 (000s)**



Source: Cambridge Econometrics, MDM revision 7146

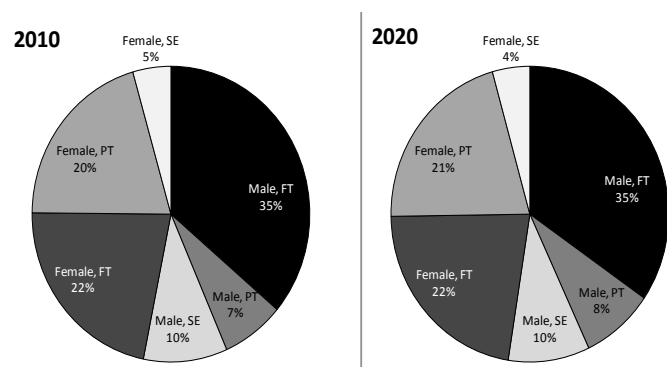
The rate of unemployment on the ILO basis (i.e. those actively searching for work as a percentage of the labour force) is expected to peak in the early part of the period, and then to fall slowly over time to reach around 6 per cent by 2020.

At just over 11 million, full-time employment (jobs) was the dominant status among males in 2010, accounting for 68 per cent of all jobs held by men (including the self-employed). Around 2.2 million jobs were held by men employed part-time and close to 3 million were self-employed (14 per cent and 18 per cent respectively). Among females, around 9 per cent of jobs were self-employed and roughly equal shares were in full-time (47 per cent) and part-time (44 per cent) jobs. The net effect of these distributions means that about 58 per cent (17.8 million) of all jobs in the UK in 2010 were full-time, just under 28 per cent (8.5 million) were part-time, while close to 14 per cent (4.4 million) were self-employed.

The overall share of jobs by status is not expected to change greatly by 2020. Full-time jobs are expected to account for 57 per cent of all jobs in 2020, 66 per cent of

all jobs held by men and 47 per cent of those held by women. Part time work is to make up 16 per cent of male employment (2 percentage point increase from 2010). The next figure shows the net change in employment by gender and status between 2010 and 2020. The greatest increase in full-time work is expected for female (415 thousand jobs) and there is an expected increase of more than 400,000 jobs each for men and women. Self-employment is set to increase by 38,000 for men and 34,000 for women over the ten years to 2020. The shares of total employment accounted for by full-time males and part-time females are expected to fall in the ten years to 2020, whilst the shares of part-time males and self-employed females are expected to increase between 2010 and 2020.

### Employment Status in the UK, 2010 and 2020 (% shares)



Source: Cambridge Econometrics, MDM revision 7146

### Sectoral prospects

Changing patterns of employment by sector are largely dominated by longer-term trends in the demand for goods and services. Increasing demand for a sector's output can be expected to result in increasing employment levels (and conversely) all else being equal. However, rising output is not a sufficient condition to guarantee increasing employment levels. Employment prospects also depend upon how rapidly productivity rises in the sector. While productivity growth is a key element in maintaining competitiveness and reducing costs, it also has a direct impact on employment levels. All else being equal, increases in productivity imply fewer people employed.

The prospects for growth in output and employment over the decade to 2020 varies in the six broad sectors identified in the analysis. In the **Primary & utilities** sector (which includes agriculture, etc.; mining & quarrying; and electricity, gas & water) only modest output growth is expected over the decade. This obscures sharp declines for mining & quarrying, offset by somewhat better prospects for electricity, gas & water, and in agriculture, etc. Primary & utilities is expected to

continue to experience significant job losses in the next decade of around  $\frac{1}{4}$  per cent per annum (around 20,000 jobs in total).

**Manufacturing** output growth is projected to average around  $2\frac{1}{2}$  per cent per annum. There is faster growth in some technology and R&D-related industries, such as parts of chemicals and engineering, but other sectors such as textiles, clothing and metals & metal goods, etc. are expected to perform much less strongly, reflecting continuing intense international competition. Long-term decline in employment in manufacturing is expected to continue, with a loss of around 170,000 jobs over the coming decade (a rate of change of around  $\frac{3}{4}$  per cent per annum). Textiles & clothing displays one of the largest job losses, but there are significant declines in many other industries as well.

**Construction** is projected to exhibit a similar rate of growth to the manufacturing sector in the medium to long-term. This is in spite of the immediate uncertainties in the housing market, because the sector is expected to benefit from strong demand for major infrastructure projects. Output growth is projected to average around 2 per cent per annum. The sector benefits from positive features such as the public expenditure on projects such as the Olympics, despite being hard hit by the immediate fallout from the credit crunch. Over the longer term, employment is projected to increase slightly by 240,000 jobs over the coming decade (around 1 per cent per annum).

**Trade, accommodation & transport** include a diverse range of industries, including transport & communications, hotels and restaurants and distribution. Prospects in terms of output and employment growth are equally diverse. Communications is the sub-sector displaying the strongest growth. Output in the sector as a whole is projected to grow by 2.7 per cent per annum. Employment is projected to increase by over 400,000 jobs over the decade to 2020 (about  $\frac{1}{2}$  per cent per annum) with most of the growth accounted for by jobs in distribution, retailing and hotels and restaurants.

**Business and other services** also incorporates a diverse range of industries, including computing services as well as business and finance. It was initially hard hit by the fallout from the credit crunch and subsequent recession, especially in the areas of banking finance and real estate. Despite this the sector as a whole is expected to stage a significant recovery, being projected to grow in output terms by almost 4 per cent per annum over the longer term. Employment in the whole sector is projected to increase by around 1.2 million by 2020 (a rate of growth of 1.3 per cent per annum). Other business services (which includes computing services) are expected to see the fastest growth.

**Non-market services** comprise public administration and defence, as well as health and education services.

Output in the sector as a whole is projected to grow by just 1 per cent per annum over the coming decade, much slower than in the previous decade. This disguises declines in most parts of the sector in the short-term, as public expenditure cuts bite. While the short-term prospects are bleak for public sector employment, things do pick up over the longer-term as the economy recovers from the recession and the effects of the financial crises, especially in areas such as education and health services.

communications technology has been a particularly significant factor, although this has been partially offset by factors leading to some polarisation in skill demands, with growth in some relatively less skilled jobs in services (such as in hotels and restaurants), as well as in high skilled ones.

The results take full account of the latest information on changing patterns of occupational employment structure from the LFS and other sources. This includes a reclassification of occupational categories using the new 2010 Standard Occupational classification (SOC2010). The change in SOC has resulted in some significant changes to the way some jobs are classified. Despite this, the latest evidence suggests that the changes in prospects for the next ten years are only slightly different compared to previous projections.

In general, there is expected to be a slightly faster pace of change in occupational employment structure than was the case in previous projections, but the overall patterns remain very similar.

The groups that are expected to show the most significant increases in employment over the next decade (2010-2020) are higher level occupations, namely:

- managers, directors & senior officials (+544,000, 18 per cent);
- professional occupations (+869,000, 15 per cent);
- associate professional & technical occupations (+551,000, 14 per cent).

Caring, leisure & other service occupations are the other main beneficiaries of employment growth, with projected increases of around 313,000 jobs (12 per cent).

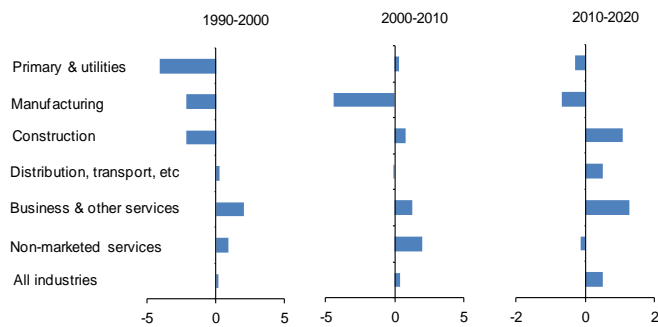
Administrative & secretarial occupations are projected to see significant further job losses of around 387,000 jobs (-11 per cent per), although this category will still employ well over 3 million people in 2020.

Declining employment levels are also projected for:

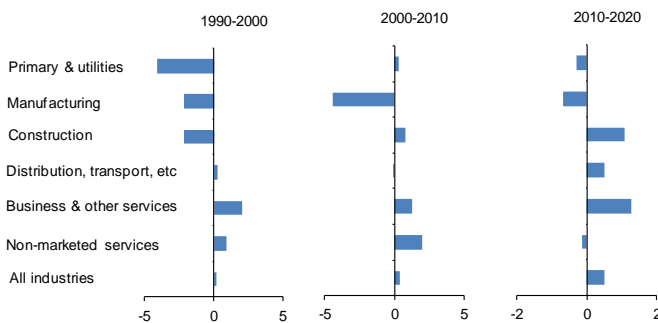
- skilled trades occupations (-230 thousand, -7 per cent);
- process, plant & machine operatives (some -213 thousand, -11 per cent).

Elementary occupations are now projected to see a slight increase in employment, as the service sector in particular generates more such jobs. This polarisation of demand for skills, with growth at both top and bottom ends of the skills spectrum, appears to be an increasingly common feature across developed economies. On the other hand, the continued restructuring of the retail and distribution sectors appears to be leading to a much less optimistic picture for many lower level sales occupations.

### Projected Changes in UK Employment by Sector per cent p.a.



### 000s



Source: Cambridge Econometrics, MDM Revision 7146.

Employment in Non-market services as a whole is expected to decline only slightly over the coming decade (by around 100,000 in total, just over -0.1 per cent per annum). Within this broad grouping, most of the projected job losses are accounted for by public administration & defence.

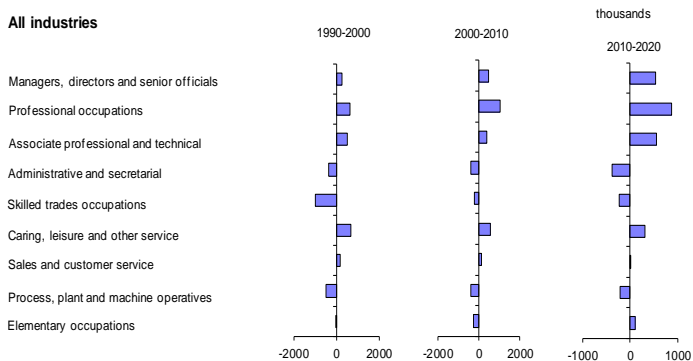
### Projected changes in occupational structure

Changing patterns of employment by occupation are largely dominated by longer-term trends rather than the cyclical position of the economy. Structural changes in the sectoral patterns of employment are a key driver (notably the shift towards a service economy). However, this has become less important in recent years than changing patterns of skill demands within each of the sectors. The latter has been driven by a combination of technological change and organisational change. Skill-biased technical change linked to information and

Projected changes in occupational employment between 1990 and 2020 are shown in the next two figures. The period 2010 to 2020 is expected to show a continuation of past patterns. Between 1990 and 2000, there was increased employment in most occupations with the biggest gains for professional occupations, associate professional and technical occupations and caring, leisure and other service occupations. The largest decreases in employment were found for skilled trades occupations. Between 2010 and 2020, there was greater expansion in the highest occupations and less decline in skilled trades occupations compared to the previous 10 years. There was also greater decline in elementary occupations than in the period 1990 to 2000. The Working Futures estimates indicate that the greatest growth by occupation will be even more concentrated in the upper three occupations. There will also be some growth in caring, leisure and other service occupations and elementary occupations, the latter being a markedly different pattern compared to previous decades. The 10 years to 2020 is also expected to show greater decreases in administrative and secretarial occupations than previous periods.

- In the first group, positive replacement demand outweighs negative expansion demand. This applies, for example, to administrative & secretarial occupations; skilled trades; and process, plant and machine operatives.
- In the second group replacement needs simply serve to reinforce positive employment trends to create even higher net requirements for new job entrants. This applies, for example, to managers; professionals; associate professionals; and caring, leisure and other service occupations.

### Projected Changes in UK Employment by Sector



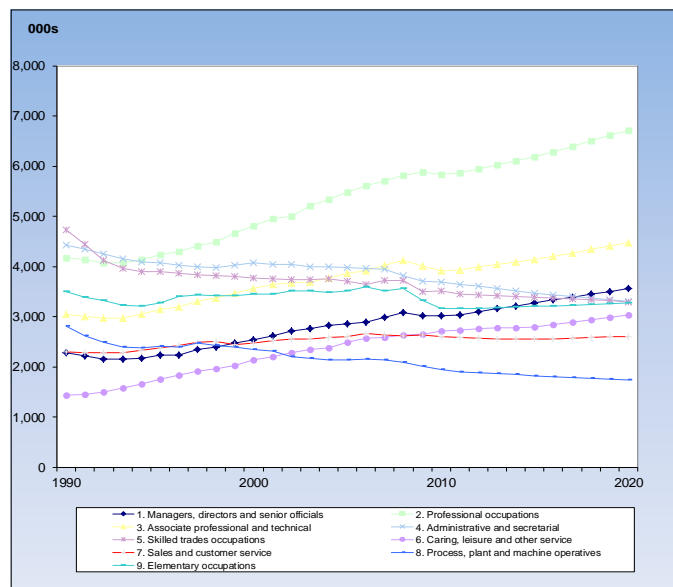
Source: IER estimates, MDM Revision 7146.

### Replacement demand

Employers also need to replace many of their workers who leave due to mortality, retirement, career moves, or other reasons. This, so called replacement demand, can easily outweigh any losses resulting from structural changes. In the recent results, replacement demand is almost 8 times larger than the net changes projected over the decade to 2020. The net requirement or total number of job openings, taking replacement demand into account is expected to be more than 13 million compared with the overall increase in employment levels of around 1½ million. Retirements are the principal component in this estimate. It excludes job openings created by people transferring from one occupation to another or other outflows due to migration (some of which will be filled by similar means).

It is possible to identify two broad groups of occupations.

### Occupational Trends, 1990-2020



Source: IER estimates, MDM Revision 7146.

### Implications for qualifications (demand, supply and mismatches)

Skill supply, as measured by the highest formal qualifications held by those economically active, is rising rapidly. Many more young people in particular have been encouraged to stay on in education longer and to acquire more qualifications at a higher level. The recession reinforced this pattern as job opportunities for young people dried up.

The demand for skills as measured by occupation and qualification is also projected to rise. The numbers of jobs in occupations typically requiring a degree continue to grow while the graduate intensity of many other jobs is rising steadily. How much this reflects demand as opposed to supply trends is open to debate.

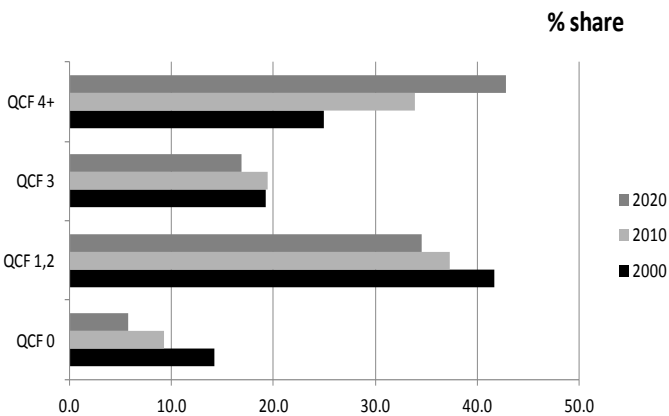
The following table and figure show the pattern of qualifications held by those in employment for 2000, 2010 and 2020. Changing patterns of educational participation mean that the overall qualification profile of the workforce will improve significantly over the next decade. The proportion and numbers of people qualified at higher levels will rise substantially. In contrast, the

proportion and number of those in the workforce with qualifications at QCF level 1 or below will fall.

The increase in the proportion of employed people with NQF level 4 or higher that was observed between 1990 and 2010 is expected to continue to 2020 with the share rising from less than 25 per cent in 1990 to more than 30 per cent in 2010, to more than 40 per cent in 2020. The share with no qualifications is expected to fall to just over 5 per cent in 2020. Decreases in the share of employed persons qualified to NQF level 1, 2 or 3 are also expected to decrease to 2020 with less than 20 per cent expected to be qualified to Level 3 in 2020 and just over 35 per cent to level 1 or 2.

It should be noted that these results are also sensitive to the assumption made about net migration, since the qualifications patterns of inward migrants are significantly different to the domestic population. The significant increase in qualification levels amongst the employed workforce also reflects changing patterns of requirements in most jobs.

### Changing Patterns of Qualification of those in Employment



Source: IER estimates based on LFS data, constrained to match *Working Futures* estimates.

Notes: The estimates shown are based on LFS shares applied to *Working Futures* data on employment levels (jobs).

The balance between demand and supply influences is more difficult to predict. The most recent evidence available suggests that rates of return to higher qualifications have shown some signs of falling recently, although they still indicate significant positive benefits towards investing in such education and training, and have generally held up quite well.

There are some significant differences in qualification profiles across both sectors and spatial areas. These are primarily driven by differences in their employment patterns by occupation (and sector in the case of spatial areas). Nearly all sectors and spatial areas are projected to see significant improvements in average qualification

levels, with increased proportions and numbers employed at QCF level 4+ and reductions at levels 0 and 1/2.

### Patterns of Qualification of those in Employment 2000, 2010 and 2020

Qualification level	2000	2010	2020
QCF 0	14.2	9.3	5.7
QCF 1,2	41.7	37.4	34.5
QCF 3	19.2	19.5	16.8
QCF 4+	25.0	33.9	42.9
All quals	100.0	100.0	100.0

Source: IER estimates based on LFS data, constrained to match *Working Futures* estimates.

### Spatial variations

The results include detailed implications for each of the countries that make up the UK as well as the English regions. The projections indicate a continuing pattern of the southern parts of England (particularly the south east corner) being relatively advantaged, with the remainder (especially northern England and the devolved nations) falling further behind in relative terms.

### Long-term Changes in Macroeconomic Indicators by Region

	GVA		Employment	
	2000-2010	2010-2020	2000-2010	2010-2020
London	2.6	3.0	0.4	0.7
South East	1.2	2.9	0.3	0.6
East of England	1.2	2.8	0.8	0.7
South West	1.5	2.7	0.7	0.7
West Midlands	0.7	2.5	-0.2	0.4
East Midlands	1.7	2.6	0.4	0.5
Yorks & the Humber	1.2	2.4	0.5	0.3
North West	1.1	2.6	0.4	0.3
North East	1.4	2.2	0.7	0.0
England	1.5	2.7	0.4	0.5
Wales	0.9	2.2	0.7	0.5
Scotland	1.5	2.2	0.4	0.2
Northern Ireland	1.4	2.5	1.0	0.5
United Kingdom	1.5	2.7	0.4	0.5

Source: CE/IER estimates, MDM revision 7146, CrossRegional.xls (Table R.1).

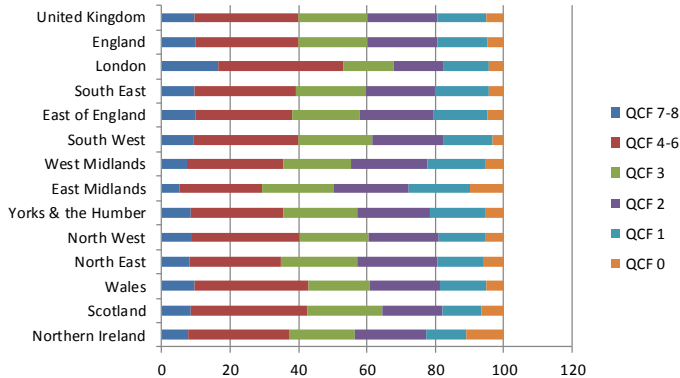
Notes: GVA (output) is measured on a residence basis, employment is on an establishment (workplace /jobs) basis

The impact of the cut-backs in public spending upon the non-market services sector is projected to be greatest in the north and west of the UK. However, the revival of employment in the primary sector and utilities and

manufacturing industry will benefit these regions and nations.

Growth in employment in managers, directors and senior officials, professional and associate professional occupations will primarily benefit the south east corner of the UK. Variations in employment patterns by qualification also reflect the differences between London and the rest of the UK (see figure).

### Spatial Patterns of Employment by Highest Qualification Held, 2010



Source: IER estimates based on LFS data, constrained to match *Working Futures* estimates.

### The Working Futures projections

The prime focus of the model is on the demand for skills as measured by occupation and qualification, although the supply side is also considered. A detailed analysis of prospects by industry and spatial area is presented, including the historical context. As well as summary results for the UK, the report also covers the implications for the devolved nations and English regions.

Sectoral change is a key driver of the demand for skills. A separate Sectoral Report provides more detail about

the prospects for 22 individual industries. This is based on categories defined using the new SOC2007 classification. The results are based on the use of a multi-sectoral, regional macroeconomic model, combined with occupational, replacement demand and qualification modules. The results take account of the latest data from the Annual Business Inquiry (2010) and the Labour Force Survey (2010), as well as various other sources. Together, these provide an indication of the changing face of the UK economy and labour market. A separate Technical Report provides full details of sources and methods used to produce the results.

The results are intended to provide a sound statistical foundation for the deliberations of all those with an interest in the supply of and demand for skills. This includes individuals, employers, education and training providers, as well as the various agencies and departments of government. Of course the future cannot be predicted with precision or certainty. But all the participants in the labour market make plans for the future, even if these are simply based on the default assumption that the future will be the same as the past. The rationale behind *Working Futures* is that a comprehensive, systematic, consistent and transparent set of projections can help to inform everyone about the world they are likely to face. It is also important to emphasise that the views presented here are not the only possible future. They represent a benchmark for debate and reflection and to inform policy development. The detailed projections present a carefully considered view of what the future might look like, assuming that past patterns of behaviour and performance are continued over the longer term. The results should be regarded as indicative of general trends and orders of magnitude and are not intended to be prescriptive. If policies and patterns of behaviour are changed then alternative futures can result.

### Over 30 years of labour market assessment and forecasting at IER

IER was a pioneer in labour market assessment and forecasting work in the UK, and remains at the forefront of employment forecasting with an international reputation for the quality of its work. IER produces the most detailed set of labour market projections in the UK. Projections are produced for all nations, regions and local areas within the UK. IER projections have been important in the economic planning of central and local government since the 1980s.

Projections are built upon the foundations of extensive research into the nature of the labour market. IER labour market analysis has been both national and sub-national, with research undertaken for regions and local areas in both urban and rural contexts. Projects have included analyses of the influence of employment and skills challenges for economic development at the local level, the development of demographic, social and economic indicators at a variety of geographical scales and the evaluation of area-based policy initiatives.

To find out more contact Professor Rob Wilson, [R.A.Wilson@warwick.ac.uk](mailto:R.A.Wilson@warwick.ac.uk).

## Warwick Institute for Employment Research: An introduction

The Warwick Institute for Employment Research is a leading international social science research centre established in 1981 by the University of Warwick. Its research is wide ranging, inter-disciplinary and highly relevant to policy makers and practitioners. It is renowned for consistently delivering high quality research. Research questions are tackled in projects funded by a range of public and private sector organisations and through publications in academic journals.

### IER objectives

- ❖ To be an international leader in labour market research and related areas of the socio-economy.
- ❖ To increase significantly the range of knowledge and understanding in these areas.
- ❖ To contribute to scientific debates with academic, policy and practitioner communities.
- ❖ To provide high quality information and intelligence to policy makers, practitioners and individuals.
- ❖ To train new generations of outstanding researchers in our fields of expertise.
- ❖ To achieve the highest quality in research, advanced training and external engagement activity.

### IER expertise

IER has built a considerable reputation for its expertise in a broad range of research fields, including:

- ❖ Labour market assessment and forecasting
- ❖ Employment relations and employer behaviour
- ❖ Apprenticeships, work based learning and training
- ❖ Guidance, learning and careers
- ❖ Skills and graduate labour market change
- ❖ Work, welfare and public policy
- ❖ Labour market classification and measurement
- ❖ International collaborative research

### Have you had a listen to our research podcasts?

We have recently launched a series of podcasts about our work at Warwick IER.

- ❖ **Professor Peter Elias**, as the Strategic Advisor for Data Resources to the UK Economic and Social Research Council (ESRC), talks about his work assisting the research councils with the development of a research infrastructure in the social sciences.
- ❖ **Terence Hogarth** reflects on IER's 30 years of research into the relationships between the operation of the economy, working practices, education and training. He talks about his research work on the economy and investment in education and training to support recovery.
- ❖ **Professor Kate Purcell** debates the social consequences of education and training policy aimed at the expansion of higher education and widening access.
- ❖ **Professor Anne Green** speaks about her recent work on spatial inequalities in the UK and the importance of sub-national perspectives on employment and skills. Anne reflects on the findings of selected recent projects and discusses implications for policy.
- ❖ **Professor Jenny Bimrose** talks about some of the findings from her international study of older workers, in particular she focuses on the career development of older women and the role of careers guidance.

More podcasts coming soon...

[www.warwick.ac.uk/go/ier/research/podcasts/](http://www.warwick.ac.uk/go/ier/research/podcasts/)