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Working Futures **2014–2024**

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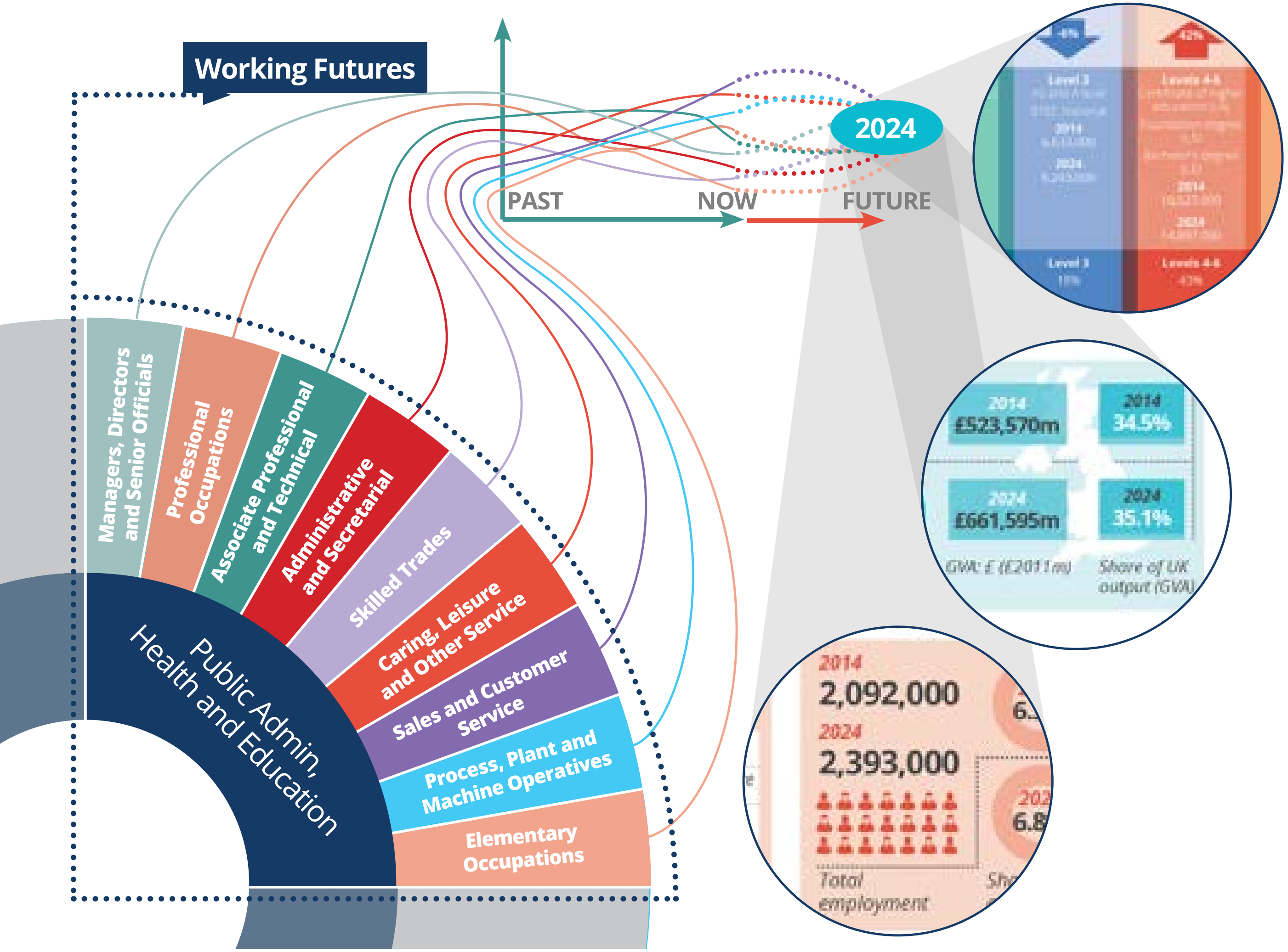
Introduction



The presentation:

- Sets out the background to the Working Futures model
- Examines economic and sectoral prospects
- Explores the outlook for skills by assessing occupational prospects and the implications for qualifications.

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What is Working Futures?

Why use Working Futures?

The main purpose of Working Futures is to provide a rich source of information that can inform choice and facilitate evidence based rather than anecdotal decision making.

For employers, it gives an indication of future requirements for skilled labour, including by industry sector and occupation.

For individuals, it gives a sense of where the future jobs may be – and whether they're in growth industries, or meeting a need to replace retiring workers.

For education and training providers it gives an insight into the skills that are likely to be in the greatest demand in future.

And for policymakers, it allows us to think about whether we're going to have the right people in the right jobs in the future.

Methodology

The projections 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 official data published by the Office for National Statistics.

- **Comprehensive** it covers the entire UK labour market, investigating how different industry sectors' prospects interact, with some expanding and some contracting, and each changing in different ways.
- **Robust** it draws on the full range of published statistics to provide an employment baseline by sector, occupation and local area, and uses sophisticated modelling to forecast how these different dimensions are likely to evolve. Data sources that underpin Working Futures include: The Office for National Statistics' UK National and Regional Accounts, Input-Output Supply and Use Tables, the Labour Force Survey and the 2011 Census.
- **Granular** by providing a breakdown by sector and occupation, it allows us to understand not only the likely broad changes in the labour market, but also the implications for the skills mix in each industry sector.

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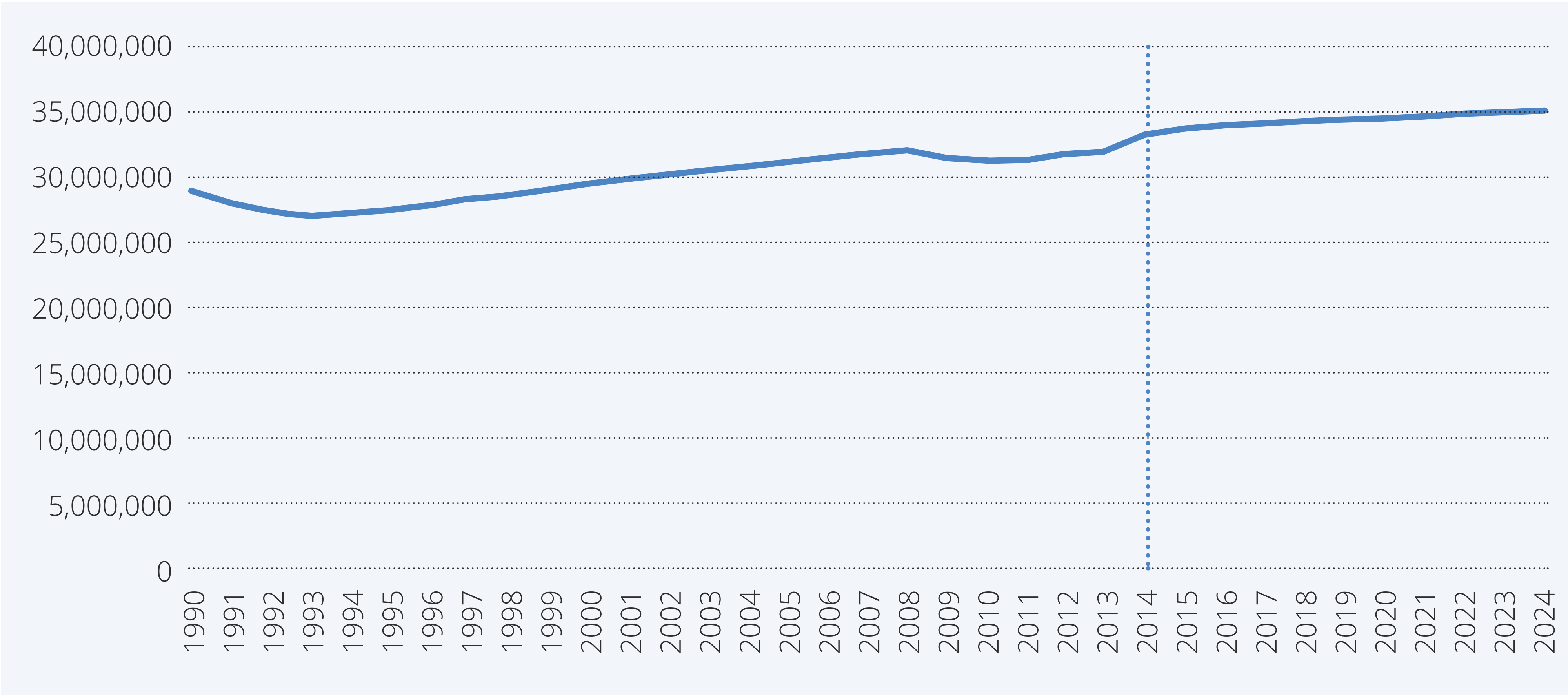
Labour market context

Employment trend 1990-2024



Source: Working Futures

Labour market context

Changes in employment in the UK by gender and status, 2014-24

Source: Working Futures

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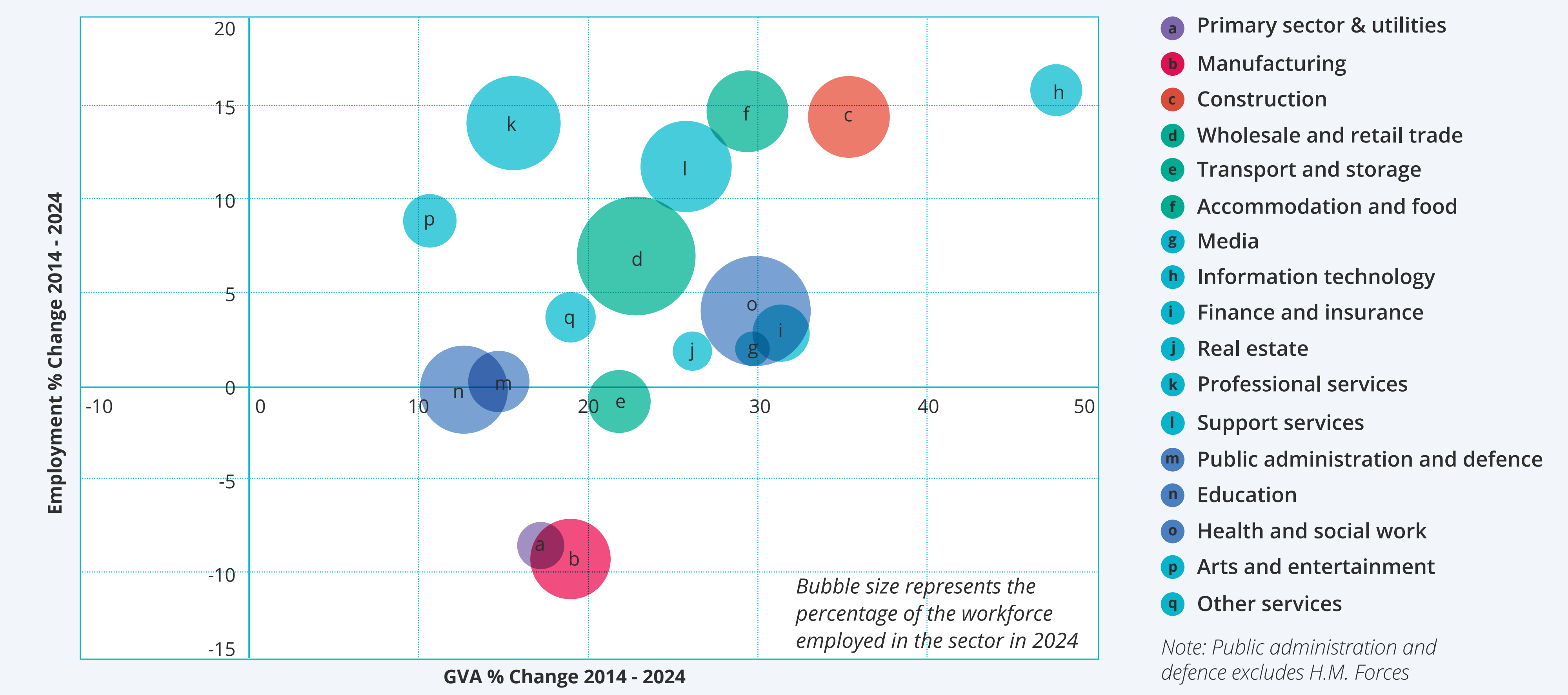
Sectoral prospects

Performance of broad sectors of the economy by forecast output and employment change, 2014-2024



Note: Public administration and defence excludes H.M. Forces

Source: Working Futures

Sector Profile
Primary sector & utilities

Activity is expected to grow modestly in this sector, leading to a fall in its share of total output.
It is anticipated that competition from imports and cost pressures will drive efficiency savings and productivity improvements, leading to a decline in employment over the course of the decade.

Industry profile

	Total employment	Share of total employment	GVA: £ (£2011m)	Share of UK output (GVA)
2014	837,000	2.5%	£68,253m	4.5%
2024	765,000	2.2%	£72,730m	3.9%

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	-72,000	1,810,000
Employment change (%)	-8.6%	5.4 %
GVA growth (% p.a)	0.6%	2.2 %
Productivity growth (% p.a)	1.5	1.7
Replacement demand (n)[1]	330,000	13,110,000

Key factors influencing the sector:

Agricultural output is expected to grow modestly, driven by changing consumer patterns. However, productivity improvements are expected to result in a fall in employment.

Coal, oil & gas production is expected to fall, due to dwindling domestic reserves and high costs of extraction relative to imports.

Energy policies and environmental legislation are likely to grow in importance, creating long-term opportunities and challenges for the sector.

Utilities output is forecast to grow modestly, driven partly by an anticipated increase in household demand.

Employment levels in utilities will grow more slowly as efficiency measures will reduce labour demand.

Sub-sectors

- Agriculture, forestry and fishing
- Mining and quarrying
- Electricity, gas, steam and air conditioning
- Water supply, sewerage, waste management

Sector Profile
Manufacturing

Manufacturing is forecast to grow at a slower rate than the wider economy over the next decade, in the face of intense competition from overseas. Its share of total output will decline slightly. Productivity growth is expected to lead to a continued decline in employment, with traditional roles being particularly affected.

Industry profile

	2014	2024
Total employment	2,591,000	2,350,000
Share of total employment	7.8%	6.7%
GVA: £ (£2011m)	£147,439m	£175,430m
Share of UK output (GVA)	9.7%	9.3%

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	-241,000	1,810,000
Employment change (%)	-9.3 %	5.4 %
GVA growth (% p.a)	1.8 %	2.2 %
Productivity growth (% p.a)	2.8	1.7
Replacement demand (n)	885,000	13,110,000

Key factors influencing the sector:

Future output growth in manufacturing is expected to be constrained by increasing competition from overseas manufacturers.

Employment is expected to stagnate or fall despite the growth in output, driven mostly by increasing automation in the sector.

Global population growth, as well as a rising proportion of individuals with middle-class incomes, are expected to increase global consumption of manufactured goods.

New processes and techniques such as 3D printing, additive and composite manufacturing and plastic electronics are changing the shape of production within the sector[i].

Global growth in advanced manufacturing demand will drive an increase in domestic activity, especially for industries in which the UK has specialised, such as aerospace, pharmaceuticals, and other technology-intensive industries.

The availability of skilled labour will be an important consideration for the employment outlook in the long-term.

Sub-sectors

- Food, drink & tobacco
- Textiles & clothing
- Wood & paper products
- Printing & recording
- Coke & petroleum
- Chemicals & chemical products
- Rubber & plastic products & other non-metallic mineral products
- Pharmaceuticals
- Metals & metal products
- Electronics
- Electrical equipment
- Machinery
- Motor vehicles
- Other transport equipment
- Other manufacturing & repair

Sector Profile
Construction

Construction is expected to see the fastest rate of growth of the six sectors, in both output and employment terms, resulting from an anticipated increase in public and private investment.

Industry profile

	Total employment	Share of total employment	GVA: £ (£2011m)	Share of UK output (GVA)
2014	2,092,000	6.3%	£92,139m	6.1%
2024	2,393,000	6.8%	£124,734m	6.7%

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	301,000	1,810,000
Employment change (%)	14.4 %	5.4 %
GVA growth (% p.a)	3.1 %	2.2 %
Productivity growth (% p.a)	1.7	1.7
Replacement demand (n)	765,000	13,110,000

Key factors influencing the sector:

- Construction growth will depend on the recovery of lending to the private sector and public infrastructure spending.
- Rising population levels in the UK are expected to increase demand for construction of housing and infrastructure.
- Long-term, major public infrastructure projects, such as HS2 and Crossrail 2, are likely to contribute to output growth.
- Overall, regulatory policies are likely to encourage construction growth particularly as firms seek innovative processes and technologies to adapt to environmental concerns.
- New types of demand will encourage technological innovations and stimulate growth. In particular, integrating construction processes with technological developments (e.g. the development of "smart cities") will be an important driver of long-term growth.

Sub-sectors

- Construction of buildings
- Civil engineering
- Specialised construction activities e.g. demolition, installation, building completion activities

Sector Profile
Trade, accommodation & transport

Although diverse in composition, the performance of the trade, accommodation and transport sector is largely dependent on the amount of activity in the wider economy. The output of the sector is forecast to grow at a pace similar to the economy average, whilst employment will grow a little faster than average.

Industry profile

	Total employment	Share of total employment	GVA: £ (£2011m)	Share of UK output (GVA)
2014	8,604,000	25.8%	£284,662m	18.8%
2024	9,248,000	26.3%	£351,880m	18.7 %

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	**644,000**	1,810,000
Employment change (%)	**7.5 %**	5.4 %
GVA growth (% p.a)	**2.1 %**	2.2 %
Productivity growth (% p.a)	**1.4**	1.7
Replacement demand (n)	**3,490,000**	13,110,000

Key factors influencing the sector:

- The performance of the sector hinges on factors such as household disposable income and business activities.
- The strongest output growth is likely to be observed in air transport services, although there may be capacity constraints, especially in London.
- Changing consumer behaviour, such as a switch to purchasing goods online, are expected to increase demand in postal and courier activities, and transportation and distributional services.
- Retail, accommodation and food services, as well as transportation services are likely to be partly dependent on the outlook for tourism growth, which is expected to be modest.
- Employment growth in the sector is expected to be mainly driven by jobs growth in retail, accommodation and catering.
- Increased automation and technology improvements will reduce labour demand in some traditional roles; such as retail check-out staff.

Sub-sectors

- Wholesale and retail trade; repair of motor vehicles
- Transport and storage
- Accommodation and food activities

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Sector Profile
Business & other services

Business and other services is forecast to see a moderation in its rate of growth in output and employment compared with that seen between 2004 and 2014, although it is expected that it will still outpace growth in the wider economy. As the largest of the six broad sectors it will make a considerable contribution to growth in absolute terms.

Industry profile

	Total employment	Share of total employment	GVA: £ (£2011m)	Share of UK output (GVA)
2014	10,523,000	31.6%	£523,570m	34.5%
2024	11,552,000	32.9%	£661,595m	35.1%

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	1,029,000	1,810,000
Employment change (%)	9.8 %	5.4 %
GVA growth (% p.a)	2.4 %	2.2 %
Productivity growth (% p.a)	1.4	1.7
Replacement demand (n)	4,228,000	13,110,000

Key factors influencing the sector:

Overall, the comparative advantage of the UK, strong investment into the sector, and technological progress are anticipated to be major factors driving long-term growth.

Although the country's comparative advantage in professional and business services will come under pressure in the long-run, these activities will continue to attract investment into the UK over this period.

The sector is expected to see strong growth in labour demand in the long run; much of this demand is likely to be in high-skilled and low-skilled roles continuing the trend of occupational polarisation.

The industries expected to make the largest contribution to growth are financial services, professional, scientific and technical activities, and information technology.

Technological progress supported by strong capital investment within the information technology industry will be a major factor in stimulating long-term growth, even though it is likely to weaken employment growth in some traditional roles.

Sub-sectors

- Information technology
- Financial and insurance activities
- Real estate activities
- Professional services
- Support service activities
- Arts, entertainment and recreation
- Other service activities

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Sector Profile
Public admin, health, education

Current government commitments to reducing the deficit will constrain the sector's growth potential in the medium-term. However, as concerns for budgetary balance decrease, increasing demand is expected to accelerate growth in the sector in the long-term. Job losses in the first half of the period are expected to be more than offset as employment growth picks up between 2019 and 2024.

Industry profile

	Total employment	Share of total employment	GVA: £ (£2011m)	Share of UK output (GVA)
2014	8,684,000	26.1%	£284,910m	18.8%
2024	8,833,000	25.1%	£341,469m	18.1%

Trends in output, productivity and employment

2014 - 2024	Sector	UK Average
Employment change (n)	149,000	1,810,000
Employment change (%)	1.7 %	5.4 %
GVA growth (% p.a)	1.8 %	2.2 %
Productivity growth (% p.a)	1.7	1.7
Replacement demand (n)	3,411,000	13,110,000

Key factors influencing the sector:

- Activity in public administration, health and education are dependent on political decisions, as government is a major component of this sector's demand.
- Wider demographic trends, such as the ageing population, will be a major driver of increased demand in the long run.
- Activity and employment in education services, especially within private education and higher education institutions, are forecast to increase, driven partly by a rise in export demand.

Sub-sectors

- Public administration and defence
- Education
- Health and social work

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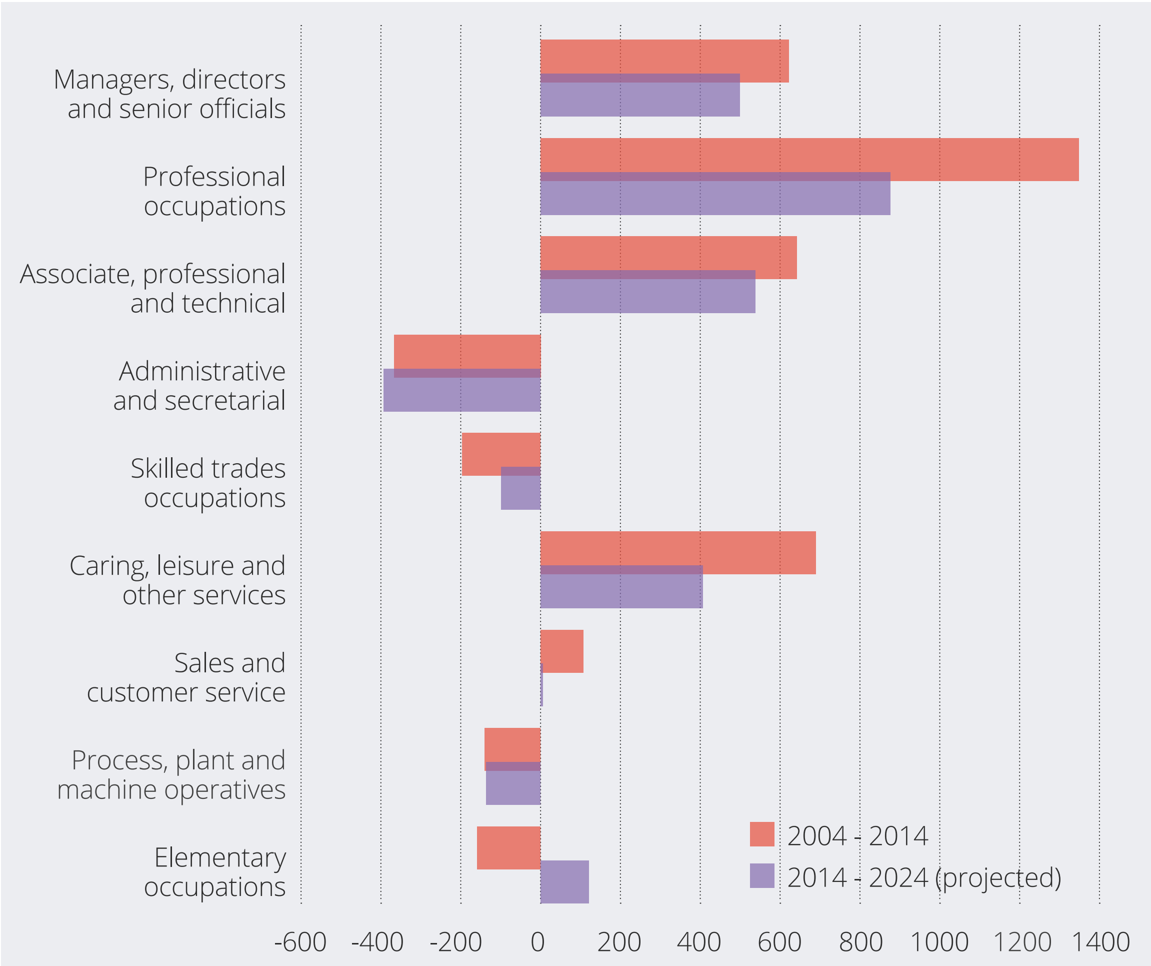
Occupational change 2014-2024

Occupational change, total employment (000s)



- Strong growth for higher level occupations: managers, most professional occupations and many associate professional and technical roles.
- Caring, leisure and other service occupations also to see significant growth.
- Net job losses for administrative & secretarial occupations; skilled trade occupations; and process, plant & machine operatives.
- Mixed fortunes for elementary occupations -modest growth in jobs less subject to automation, losses in other areas.

Managers, directors and senior officials

Managers, directors and senior officials	Professional occupations	Associate, professional and technical	Administrative and secretarial	Skilled trades occupations	Caring, leisure and other services	Sales and customer service	Elementary occupations

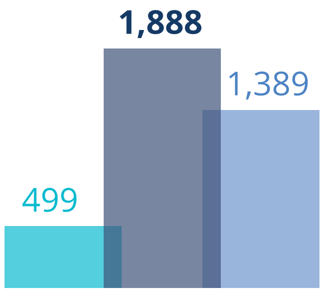
11%
share of 2024 employment

15%
net employment change 2014–2024

Occupation by gender 2024

53% male
47% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

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Professional occupations

Managers, directors and senior officials	**Professional occupations**	Associate, professional and technical	Administrative and secretarial	Skilled trades occupations	Caring, leisure and other services	Sales and customer service	Elementary occupations

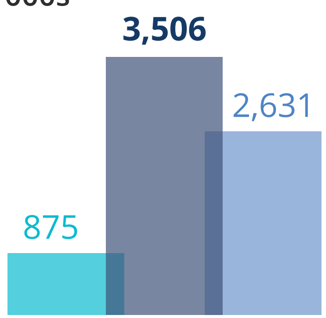
21%
share of 2024 employment

13%
net employment change 2014–2024

Occupation by gender 2024

53% male
47% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

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Associate, professional and technical

Managers, directors and senior officials	Professional occupations	**Associate, professional and technical**	Administrative and secretarial	Skilled trades occupations	Caring, leisure and other services	Sales and customer service	Elementary occupations

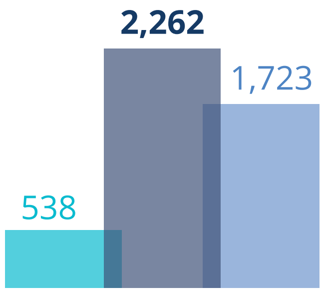
15%
share of 2024 employment

12%
net employment change 2014–2024

Occupation by gender 2024

53% male
47% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

Administrative and secretarial

Managers, directors and senior officials	Professional occupations	Associate, professional and technical	**Administrative and secretarial**	Skilled trades occupations	Caring, leisure and other services	Sales and customer service	Elementary occupations

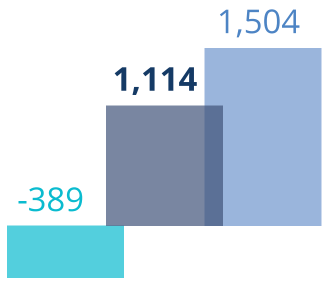
9%
share of 2024 employment

-11%
net employment change 2014–2024

Occupation by gender 2024

26% male
74% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

Skilled trades occupations

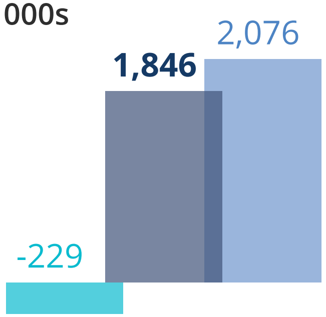
Managers, directors and senior officials	Professional occupations	Associate, professional and technical	Administrative and secretarial	**Skilled trades occupations**	Caring, leisure and other services	Sales and customer service	Elementary occupations

16%
share of 2024 employment

Occupation by gender 2024

11% male
89% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

-4%
net employment change 2014–2024

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Caring, leisure and other services

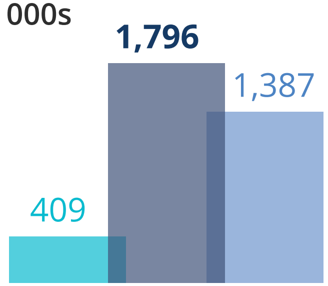
Managers, directors and senior officials	Professional occupations	Associate, professional and technical	Administrative and secretarial	Skilled trades occupations	**Caring, leisure and other services**	Sales and customer service	Elementary occupations

11%
share of 2024 employment

Occupation by gender 2024

18% male
82% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

3%
net employment change 2014–2024

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Sales and customer service

Managers, directors and senior officials	Professional occupations	Associate, professional and technical	Administrative and secretarial	Skilled trades occupations	Caring, leisure and other services	**Sales and customer service**	Elementary occupations

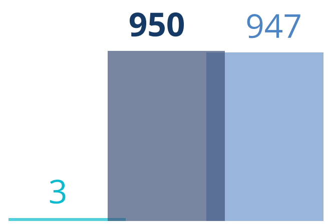
7% share of 2024 employment

Occupation by gender 2024

38% male

62% female

Job openings 2012-24 000s



Expansion Demand

Total Requirement

Replacement Demand

0% net employment change 2014–2024

Elementary occupations

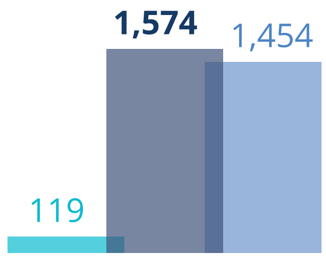
Managers, directors and senior officials	Professional occupations	Associate, professional and technical	Administrative and secretarial	Skilled trades occupations	Caring, leisure and other services	Sales and customer service	**Elementary occupations**

11%
share of 2024 employment

Occupation by gender 2024

57% male
43% female

Job openings 2012-24 000s



Expansion Demand
Total Requirement
Replacement Demand

3%
net employment change 2014–2024

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Qualifications

Changing profile of employment by qualification level

2014-2024 % change	-41%	-7%	-6%	42%	30%
2014 **2024** **level** Selected examples of qualifications	**No qualification and Level 1** GCSE (grades D-G) BTEC award, certificate and diploma level 1 **2014** 6,293,000 **2024** 3,688,000	**Level 2** GCSE (grades A*-C) NVQ level 2 **2014** 6,607,000 **2024** 6,134,000	**Level 3** AS and A level BTEC National **2014** 6,633,000 **2024** 6,243,000	**Levels 4-6** Certificate of higher education (L4) Foundation degree (L5) Bachelor's degree (L6) **2014** 10,527,000	**Levels 7-8** Master's degree (L7) Doctorate (L8) **2014** 3,107,000 **2024** 4,030,000
2024 % share	**No qualifications and Level 1** 11%	**Level 2** 18%	**Level 3** 18%	**Levels 4-6** 43%	**Levels 7-8** 12%

² The Regulated Qualifications Framework categorises qualifications by size and difficulty ranging from entry level to level 8 (Ofqual, 2015). The Scottish Credit and Qualifications Framework applies to Scotland.

By 2024, around **54%** of people in employment are expected to be **qualified at level 4 and above**

Conclusions: Expected Sectoral Trends

- Private services main engine of job growth, contributing more than 90 per cent of net additional jobs between 2014 and 2024.
- Business and other services activities such as professional services and Information technology expected to see the strongest rates of job growth.
- Manufacturing to see a continued decline in jobs, but coupled with output and productivity growth, implying that jobs in the sector will become more skilled.
- The construction sector is forecast to rebound strongly to become the strongest performing of the six broad sectors in terms of both output and employment.
- Health and social care expected to see strong growth but prospects for education and public administration muted.

Conclusions: Expected Occupational Trends

- Continuing polarisation of employment but with a strong bias towards higher skilled occupations.
- Growth of nearly 2m jobs for higher skilled occupations.
- Caring, leisure and other service roles to contribute over 400,000 additional jobs.
- Administrative and secretarial occupations to see largest decline with 390,000 fewer jobs.
- Process, plant and machine operatives (-130,000) and skilled trades occupations (-100,000) are also projected to see job losses.
- "Winners" and others "losers" not the whole story, replacement demands will mean job openings (and career opportunities) across all broad occupational areas, including those projected to see net decline.

Conclusions: Qualifications

- Continued shift towards more people holding more high level qualifications – 54 per cent of jobs held by tertiary educated by 2024.
- Average qualification level to rise within all occupations - increasing skill requirements or “qualifications inflation” ?

Also available

- Working Futures 2014-2024 full length evidence and technical reports.
- Annexes containing: Comparisons with previous projections. Trends in employment and output by nation of the UK and regions of England. Methodological details relating to the spatial analysis.
- Excel workbooks containing analysis for the UK, nations and English regions.

For further details and to access the previous Working Futures reports and data visit:

www.gov.uk/government/collections/the-future-of-jobs-and-skills

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