



Jobs and Skills in Scotland

The evidence

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Foreword



Damien Yeates,
Chief Executive, Skills Development Scotland

I am delighted to introduce the first report by Skills Development Scotland (SDS) on **Jobs and Skills in Scotland: The Evidence**.

Jobs and Skills in Scotland: The Evidence draws together a range of published data sources and commentary to provide an overview of the current health of Scotland's labour market, its performance since the financial crisis of 2008 and an analysis of future projections.

It is designed to summarise the available evidence and provides analysis of known and emerging issues affecting the Scottish skills system.

This report is part of a major programme of work that has seen Skills Development Scotland invest heavily in the production of a robust and respected evidence base for the skills landscape in Scotland.

We have published Sectoral Skills Investment Plans, and produced Regional Skills Assessments to support partners to make better decisions on skills investment at a regional level. Regional Skills Assessments have been used as the basis for developing Regional Skills Investment Plans, with the first launched in the Highlands and Islands.

The report highlights many strengths in Scotland's economy which we can build on, such as the fact that, following the recession:

- productivity in Scotland has grown at a faster rate than the UK
- employment in Scotland has recovered and is above pre-recession levels
- many key sectors have had good employment growth despite difficult trading conditions
- Scotland has maintained a highly skilled workforce
- the economy offers a range of opportunities for young people after school.

However, at a time of unprecedented uncertainty and opportunity, the report highlights fundamental challenges in the skills landscape and the wider economy, with implications for businesses, the education/training system and policy makers. Key themes highlighted through the report include:

- boosting productivity is vital for our long term prosperity – Scotland's productivity, like the rest of the UK, remains significantly behind other advanced economies
- our growth needs to be more inclusive – employment has now recovered to beyond pre-recession levels, but this has been driven primarily by part-time, temporary and self-employment
- the rise of 'non-standard' employment forms, low wages growth and the persistence of in-work poverty raises important questions about the quality of employment growth. There is also significant regional variation in both current performance and future projections for the labour market
- Scotland's demographics represent significant challenges, and Brexit may exacerbate these – our population is ageing and recent population growth has been driven by net migration. Brexit may have a significant impact on labour flow, with areas of Scotland at risk of a significant long term reduction in working age population

- the world of work is changing – we need to support businesses and individuals to navigate and embrace that change – automation, converging technology, digitalisation of production and ICT development have potential to further reshape the labour market and the demand for skills. In addition, an ‘hourglass’ labour market structure is emerging which presents challenges for progression in the workplace.

Skills Development Scotland is working with partners across the skills landscape to respond to these challenges and opportunities.

Our work around skills planning at both regional and sectoral level take an evidence-based approach to defining skills requirements and drive a joined up approach to addressing these requirements.

Our plans for rapid expansion of Foundation and Graduate Level Apprenticeships, along with the introduction of the Scottish Apprenticeship Advisory Board, are fundamentally designed to more closely align the outputs of the skills system with the needs of employers. In doing so, we seek to mirror the increased prevalence of work-based learning that we see in many economies with exemplary track records of productivity and economic resilience.

We have established the Centre for Work-based Learning, with a focus on increasing awareness of the likely future skills requirements aligned to the fourth industrial revolution. And we continue to support the Scottish Government’s inclusive growth agenda across a range of interventions.

However, this report highlights a need for all of us involved in the skills system to work together to ensure:

- greater alignment between our investment into skills with the needs of the economy
- a focus on creating good quality jobs and skills utilisation, ensuring that these translate into increased earnings and greater prosperity
- continued vigilance around potential tightening in the labour market and disproportionate impacts on specific regions and sectors
- an informed debate about the nature of ‘future skills’, with a focus on greater flexibility and agility in skills delivery and encouraging the metaskills to adapt and thrive in new work environments.

We would welcome the opportunity to work with partners to better understand these issues and establish a shared narrative on the evidence to support future policy and investment.

In reporting on these issues we invited input from key external experts and I would like to personally thank those who offered their time and expertise on this:

- Professor Sir Anton Muscatelli, Principal and Vice-Chancellor, University of Glasgow, on Brexit
- Professor Graeme Roy, Director, Fraser of Allander Institute, on productivity and for offering ‘critical friend’ advice on the content of the report
- Campbell Robb, Chief Executive, Joseph Rowntree Foundation and Joseph Rowntree Housing Trust, on societal change
- Olly Newton, Director of Policy and Research, Edge Foundation, on automation and Industry 4.0.

1

Introduction

1.1 Developing the right skills at the right time is crucial to achieve Scottish Government’s aim of:

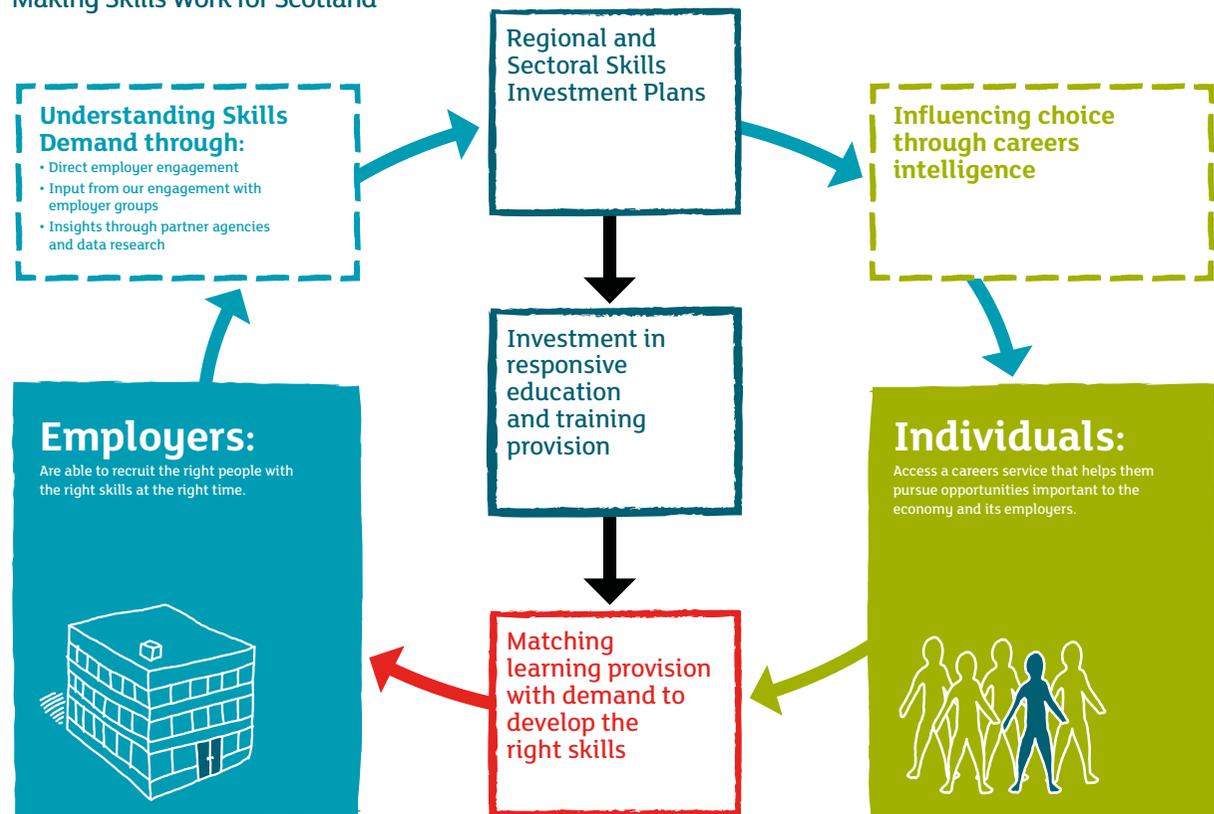
“creating a more successful country, with opportunities for all of Scotland to flourish, through increasing sustainable economic growth.”

1.2 Significant public sector funding (some £2 billion) is invested annually to support skills development in Scotland. This, alongside employer and other partner investment, is a substantial resource and it is therefore important to ensure that robust evidence is developed and utilised to guide this investment.

1.3 Current Scottish Government Strategy for skills is in the form of strategies such as Scotland’s Economic Strategy, Scotland’s Labour Market Strategy and Scotland’s Youth Employment Strategy and also the recent UK Industrial Strategy. These, alongside the Scottish Skills Planning Model (Figure 1.1), influence skills investment.

Figure 1.1
Scottish Skills Planning Model

The Skills Planning Model
Making Skills Work for Scotland



- 1.4** The skills planning model is evolving. Phase 2 of the Enterprise and Skills Review that reported earlier this year included a range of proposals to achieve the dual goals of (1) a dynamic, inclusive, globally competitive economy and (2) a high performing, inclusive labour market. Work is ongoing on these proposals that include regional partnership models, learner journey models and, of most relevance to skills planning, proposals for skills alignment.
- 1.5** The vision for skills alignment is for “skills services to be fully aligned to deliver the learning and skills necessary for sustainable and inclusive economic growth.” A project is in place to achieve this, the purpose of which is to align the relevant functions of the Scottish Funding Council (SFC) and Skills Development Scotland (SDS) to ensure that Scotland’s people and businesses are equipped with the right skills to succeed in the economy, not just now but in the future.
- 1.6** To achieve this, Scottish Government, working closely with SDS and SFC, has identified the following core principles:
- the need for a single set of strategic skills guidance to deliver skills planning: to be issued to both SDS and SFC boards alongside the agencies’ letters of guidance, which will support the delivery of the Strategic Board’s Strategic Plan
 - the need for a jointly agreed evidence base, drawing on the work of the proposed Analytical Unit, as well as other agencies’ and stakeholders’ input, through which to establish demand, to inform decisions about learning and skills provision and to underpin agreed indicators of success
 - the need for a clear and agreed process through which the two agencies can jointly prioritise skills investment: drawing on the evidence base described above, the operational capacity of providers, and the priorities expressed by Scottish Ministers. The process should recognise the contribution from other partners such as local government and regional economic partnerships
- a governance mechanism, through which SDS and SFC can discuss and endorse these agreements and which supports the Strategic Board’s aims and expectations through the joint planning and joint delivery focus of the organisations
 - the need for a common monitoring and evaluation framework, informed by the Analytical Unit, the Strategic Board’s single Strategic Plan and Scottish Government’s development of its National Performance Framework.

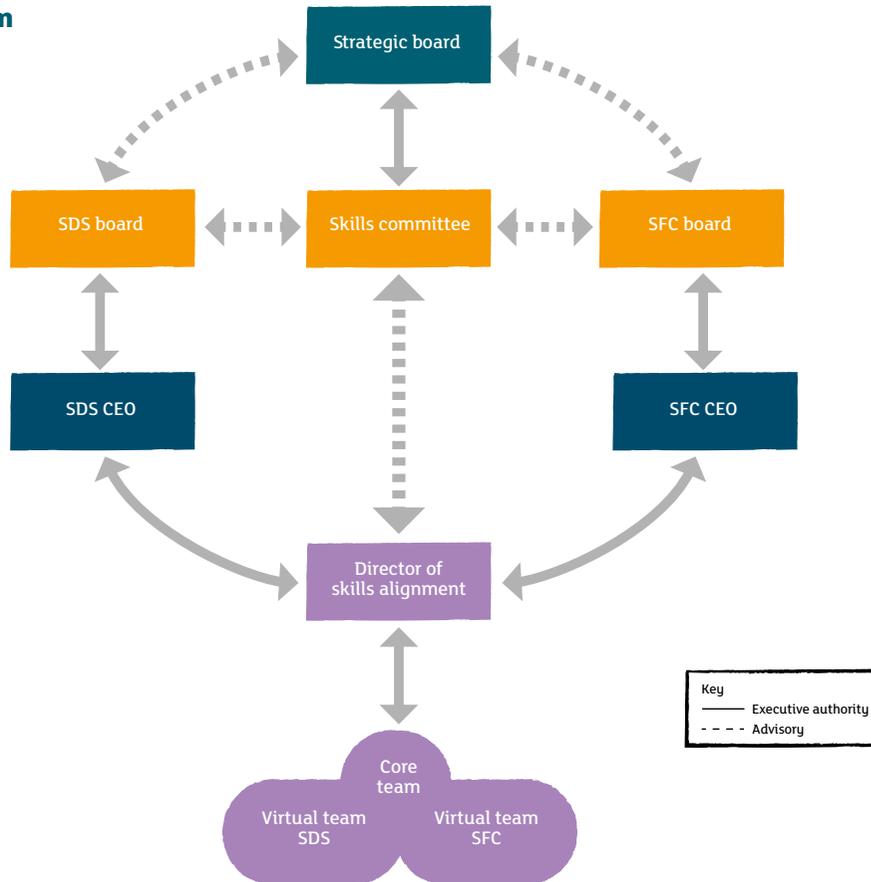
1.7 The proposals include the development of a 5 step planning model (Figure 1.2) and a Governance Structure (Figure 1.3).

Figure 1.2
The 5 Step Planning Model



Figure 1.3
Governance Structure

Joint executive team



1.8 At the time of writing, SFC and SDS are engaged with Scottish Government to develop a detailed implementation plan to carry through the reforms identified. Work that has been agreed to take place in the short term includes:

- the development of Terms of Reference for a strategic Skills Hub of the Strategic Board
- development of the 5 step model to confirm the deliverables of each stage
- the appointment of a Director of Skills Alignment reporting jointly to the Chief Executives of SDS and SFC.

1.9 Evidence produced through this report and other skills assessments, now and in the future, can help inform step 1 of the 5 step model.

1.10 Our vision is that Skills Development Scotland (SDS) contributes significantly to a Scotland that values skills, realising the potential of its people and businesses to build a competitive, inclusive and resilient economy. We lead skills planning and development, supporting employers to invest in the skills they need, while helping individuals to get jobs and progress in the workplace.

1.11 SDS is the national skills agency and our priorities are determined by Government Policy and Strategy, in particular, Scotland's Economic Strategy, Scotland's Labour Market Strategy and Scotland's Youth Employment Strategy.

We have five goals:

- employers are better able to recruit the right people with the right skills at the right time
- employers have high performing, highly productive, fair and equal workplaces
- people have the right skills and confidence to secure good work, progress in their careers and achieve their full potential
- increased equality of opportunity for all
- SDS is an employer of choice, an exemplar of fair work and internationally recognised for excellence, innovation and customer focus.

1.12 As part of our work we invest in the development of a robust evidence base that is used to inform and guide our investment and that of our partners. This report is part of a portfolio of insight that we have developed to provide a coherent narrative on the jobs and skills environment in Scotland.

1.13 The report shows the landscape based on current projections and trends without major interventions – or in some cases, strategic skills alignment.

1.14 However, strategic interventions can change projections and future performance. This is being demonstrated though current investment in digital technologies in Scotland, with policy changes in early years and childcare also expected to drive investment. Further industry specific strategies will also shape the future development and success of key sectors.

1.15 The structure of the report is as follows:

- Chapter 2: Economic context
- Chapter 3: Jobs in Scotland through recession and recovery
- Chapter 4: Sectoral economic performance
- Chapter 5: Regional economic performance
- Chapter 6: Supply of skills in Scotland
- Chapter 7: Skills challenges in Scotland
- Chapter 8: Forecasting for the future

1.16 It is intended to provide the evidence base to underpin future skills investment planning. It is also intended to stimulate debate on the drivers that impinge on skills and engage partners in developing a shared understanding and response to known and emerging issues that affect our skills system and the wider context within which it is situated.¹

¹ Data is current as of 9th October 2017. Business Register Employment Survey data for 2016 released on 2nd October has not been included since it does not allow comparison with previous years before 2015.

2

The economic
context

Economic growth

Global economy

- 2.1** Gross Domestic Product (GDP) is a measure of goods and services produced; it captures the size and health of an economy. As at October 2017, there was broad consensus that the global economy is starting to pick up following a slow down in growth. Global GDP growth in 2016 was 2.4%, a post 2008 financial crisis low, but growth is expected to be 2.7% in 2017, rising to 2.9% in 2018/2019 (The World Bank, June 2017).
- 2.2** The GDP growth of advanced economies (United States, Euro Area and Japan) in 2016 was 1.6%. This was 0.5 percentage points slower than growth in 2015, with all advanced economies estimated to have experienced a slow down caused by increased uncertainty about policy direction, tepid investment, and sluggish productivity growth. However, despite ongoing political uncertainty, the growth of advanced economies is expected to accelerate to 1.9% in 2017 (The World Bank, 2017, p.3). This is a result of an upturn in the United States, and upgraded forecasts for the Euro Area and Japan, reflecting strengthening domestic demand and exports. Investment across advanced economies has firmed, while private consumption growth has moderated.
- 2.3** In 2016 emerging and developing economies (EMDEs) continued to grow faster than advanced economies. The GDP growth of EMDEs was estimated to be 3.5% in 2016, although this was a post financial crisis low. As with advanced economies, growth is strengthening, forecast to be 4.1% in 2017 and 4.5% in 2018 (The World Bank, 2017).
- 2.4** With the overall global slowdown, the growth in global trade also slowed in 2016. In 2014 global trade grew by 3.7%, this fell to 2.8% in 2015 and further again to 2.5% in 2016. The slow down in global trade affected the growth rate of commodity exporting EMDEs, with the commodity exporting economies of Russia, Brazil, Argentina and Nigeria remaining, or entering, recession in 2016 (The World Bank, 2017). Whilst the economic recovery is starting to firm up, the tightening economic cycle, even in the United States, where this is the most advanced, is at a slower pace than in the past (The World Bank, 2017).
- 2.5** Overall, the long-term trend continues to be for global economic growth, and this is likely to continue. In 30 years' time, China will be the largest economy by a significant margin, India will be second, and Indonesia will rise to fourth. The IMF forecasts world growth will be closer to 3.5% in 2017 and 2018, above its estimation of 3% for 2016. As the Fraser of Allander Institute point out, 3.5% is the global average growth rate from 1960.

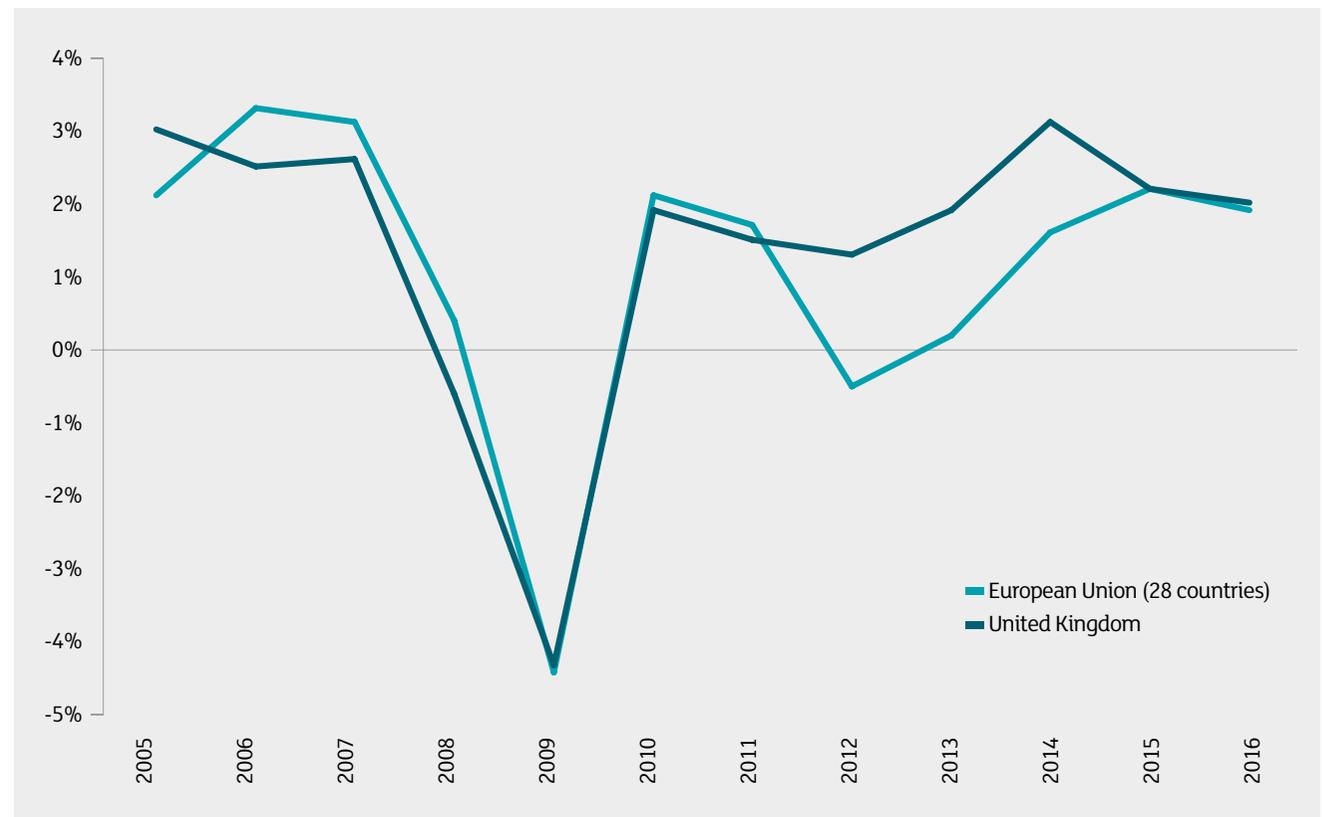
European economy

2.6 The GDP growth rate of the European Union (EU) was 1.9% in 2016. Although this was above the GDP growth rate across advanced economies it was slower than the rate of growth achieved in the previous year. In 2015, the EU economy grew by 2.2% (European Commission, 2017).

2.7 The rate of EU GDP growth in 2016 is thought to be a positive outcome given the number of challenges to be overcome. These included the lowest pace of global and trade growth since 2009, geopolitical tensions, terrorist attacks in several Member States, stressed banking sectors, the UK's vote to leave the EU, and a mounting backlash against globalisation (European Commission, 2017, p.1). As globally, all EU countries are set to experience growth in 2017, the first period of sustained growth since the euro crisis (FAI, 2017).

Figure 2.1
EU and UK GDP growth, percentage change on previous year, 2005-2016

Source: European Commission, Eurostat, 2017



2.8 Prior to the economic crisis in 2008, GDP growth in the UK lagged behind that of the EU. Following 2008, the UK economy had a similar recovery to that of the EU as a whole up until 2011 when it then showed more resilience and grew at a faster rate up to 2014. The annual growth rate of GDP in the UK hit a post-recession peak in 2014, achieving growth of 3.1%. Growth has since slowed, and the UK and EU have had a similar slower rate of GDP growth since 2015 (UK 1.8 vs. EU 1.9) (see Figure 2.1 on previous page).

2.9 ONS estimated that the UK economy grew in output terms by 2% between Q1 2016 and Q1 2017. This rate of growth was better than expected considering the outcome of the vote to leave the EU. Economic growth in Q4 2016 (October to December) was stronger than expected, and stronger than growth achieved in any other quarter of 2016. Growth in Q4 of 2016 was 0.7%, 0.1% greater than the anticipated growth. This added to the broad consensus that the initial impact of Brexit was not as negative as first expected (PWC, 2016), thanks in part to measures introduced by the Bank of England which helped to mitigate adverse effects. The figures for Q4 suggest that the UK economy has remained resilient. In 2017, the UK economy is estimated to have grown, although at a slower rate of 0.3% between Q1 and Q2.

2.10 Some signs of concern have emerged however. Business investment fell by 1% in Q4 of 2016 and inflation is steadily increasing. The Consumer Prices Index measure of inflation was at 2.8% in September 2017, up from 2.7% in August 2017. It was last higher in March 2012. Household consumption, although steady, is increasingly being financed by credit and the savings ratio is falling, and, in the expenditure measure of GDP, household spending was 0.1% and business investment 0% in Q2 2017. There may be impacts of Brexit on the economy below the headline GDP measure and these will need to be monitored closely.

Scottish economy

2.11 The recession and subsequent recovery in Scotland was different to that of the UK. Immediately prior to the recession, Scottish GDP growth had already begun to slow, and was around one third of UK GDP growth. Although growth was slower, Scotland technically entered recession one quarter later than the UK (Q1 2009) and exited recession one quarter later (Q2 2010).

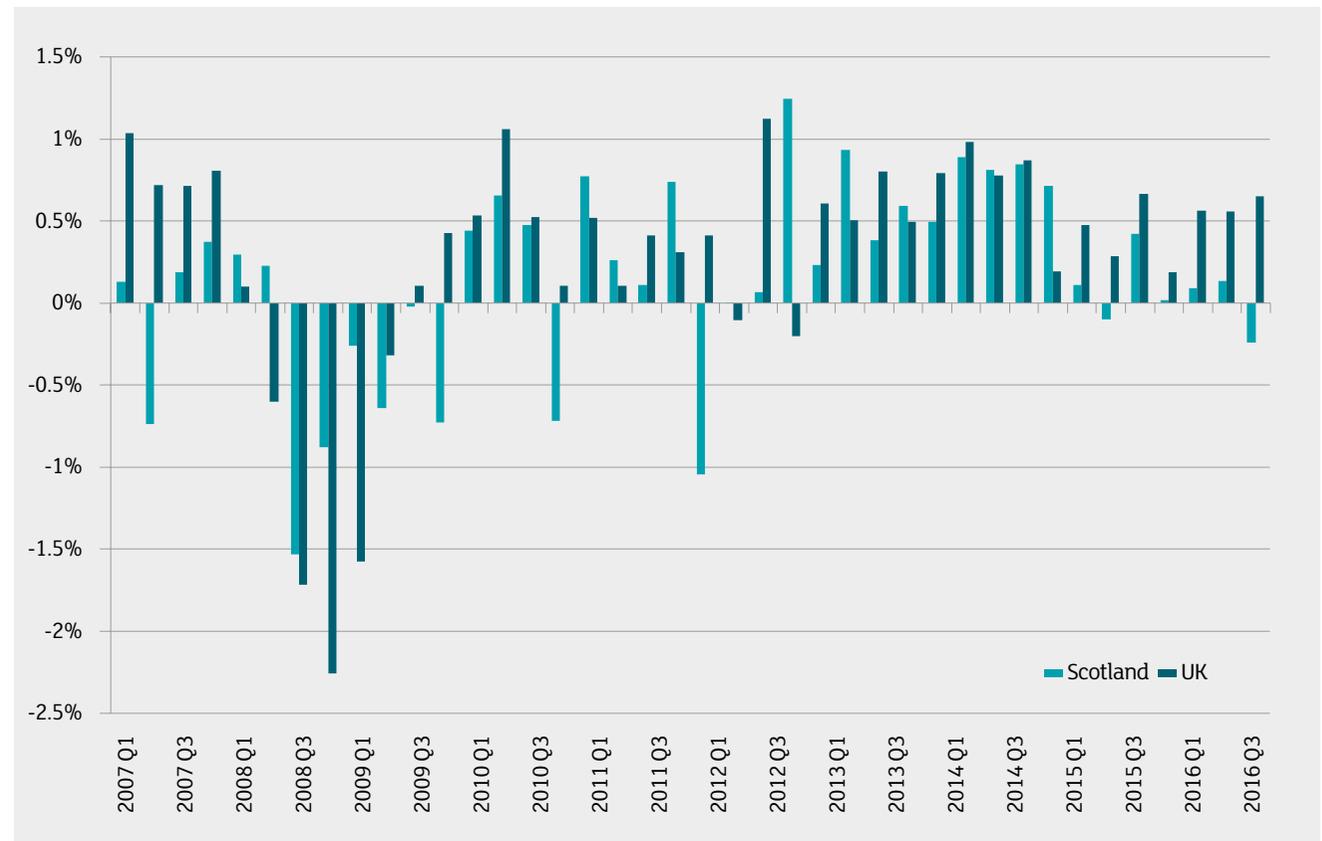
2.12 The fall in output in Scotland was much lower than for the UK as a whole. However, since the recession Scotland has had a weaker recovery than the rest of the UK, with the growth rate across the UK almost twice that of Scotland's.

2.13 Scottish onshore GDP for the year 2016 was £148.9 billion; or £158.1 billion if a share of offshore and overseas economic activity is included.

2.14 The recent growth rate of the Scottish economy remains behind that of the UK. Scottish GDP growth for 2016 was 0.4%. This was 1.6 percentage points slower than the rate of GDP growth across the UK as a whole. On a quarterly basis GDP growth in Scotland has been approximately 0.1% compared to 0.5% across the UK. The latest quarterly growth in Scotland of 0.7% in Q1 of 2017 returns the Scottish economy to growth after it had contracted by 0.2% in Q3 of 2016 (see Figure 2.2).

Figure 2.2
Scottish and UK quarterly GDP growth, 2007-2016

Source: Scottish Government



2.15 Scotland's economy showed resilience through the recession but it has had a challenging recovery. It has struggled to keep pace with the growth across the UK which has performed well, with the UK being broadly in line with the EU standards. Globally, economic conditions in 2016 were challenging and Scotland has suffered in particular from the fall in oil prices and the downturn in the important oil and gas sector. The EU, UK and Scotland all experienced a slow down in economic growth. In many ways, from the UK and Scotland's perspective, 2016 was positive that the immediate impact of the Brexit decision was not as negative as first expected. The Q2 GDP growth rate in Scotland in 2017 was encouraging, although there continue to be a number of uncertainties and challenges that remain.

Productivity

The UK and the global economy

2.16 Since the financial crisis in 2008, global productivity (measured by GDP per hour worked) has failed to recover to pre-recession rates and since 2010 growth has been relatively static (OECD, 2016). The reasons for growth flat-lining are not fully understood, although a number of theories are suggested, and this is why the phenomenon is called the 'productivity puzzle'. Improving productivity is important to the economy and society as it leads to economic growth and in turn can lead to growth in wages and an increase in living standards. It however relies on a dynamic economy where good ideas spread rapidly, workers are well matched to jobs, productive firms can scale up, and where people move into jobs that use their skills and can own homes close to where they want to work (HM Treasury, 2015, p.41). Solving this puzzle is a key challenge for Government, businesses and individuals.

2.17 Compared to other countries the UK lags behind, with productivity only surpassing the pre-crisis rate in 2015 by 0.1%. According to the ONS Statistical Bulletin on international comparisons of productivity, final estimates (April 2017²):

- compared to the average for the rest of the major G7 advanced economies output per hour in the UK was 15.9 percentage points behind. This gap was the largest of all G7 countries. On an output per worker basis, UK productivity was 16.6 percentage points below the average for the rest of the G7 in 2015
- across the G7 as a whole, labour productivity as measured by real (inflation adjusted) output per hour and output per worker grew modestly in 2015. Output per hour was lower in all G7 countries in 2015 than would have been the case if pre-downturn trends had continued since 2007. The UK's 'productivity puzzle'³ of around 15% was about twice as large as the gap for the rest of the G7

- analysis of sub sectors of the economy between the UK, the US, Germany, France and Italy show that⁴:
 - UK labour productivity trailed behind the US in all sub-sectors and particularly in manufacturing
 - comparisons with other European countries are more mixed. For manufacturing, UK output per hour was estimated to be above that of Italy, and UK output per worker was a little higher than equivalent estimates for Germany and France
 - in financial services, the UK's comparative productivity deteriorated sharply from 2009 and trailed France and Italy as well as the US. For private non-financial services (easily the largest component), the UK's comparative productivity had also deteriorated since 2009 and UK output per hour trailed well behind France, Germany and the US.

² ONS Statistical Bulletin, April 2017.

³ 'Productivity puzzle' is defined by the ONS as the difference between post-downturn productivity performance and the pre-downturn trend.

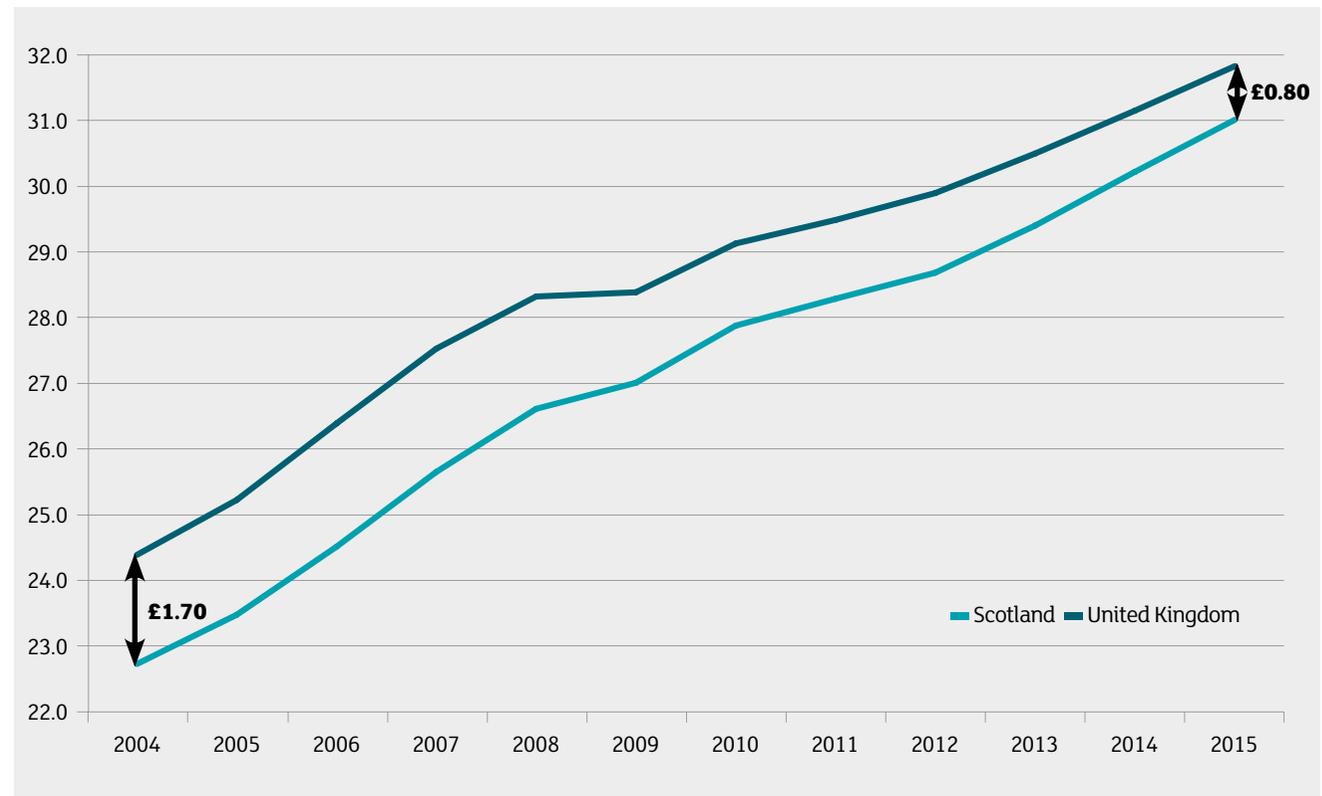
⁴ The latest available data for country comparisons is 2014.

Scotland and the UK

- 2.18** Compared to the UK as a whole, productivity in Scotland has had a stronger recovery following the financial crisis. In 2015, productivity in Scotland was 9.4% higher in real terms than in 2007 (compared to 0.1% across the UK). In 2015 productivity in Scotland grew by 3.5% compared to 0.9% across the UK (Scottish Government, 2017).
- 2.19** Although productivity in Scotland has grown at a faster rate than the UK, the rate of growth post-recession has been slower than what was occurring beforehand. Across the UK, GVA per hour worked increased by 16% from 2004 to 2009; the equivalent rate in Scotland was 19%. From 2010 to 2015 productivity across the UK grew by 9% and across Scotland by 11%. Although Scotland has had good productivity growth compared to the UK following the recession it has not regained the rate of growth prior to the recession of 2008-2010.
- 2.20** The faster growth in Scotland has narrowed the productivity gap that exists between the UK and Scotland. In 2004, productivity per hour worked in the UK was approximately £24.40; it was approximately £1.70 less in Scotland. By 2015, the gap had closed and Scotland was approximately £0.80 behind the UK (see Figure 2.3).

Figure 2.3
Productivity (GVA per hour worked, £)
UK and Scotland, 2004-2015

Source: ONS



- 2.21** The Fraser of Allander Institute (March 2016) cited academic research by Professor Richard Harris and Dr Jean Moffat which suggests that 'Total Factor' productivity in Scotland is much lower than the rest of UK. Total factor productivity accounts for inputs that are difficult to value, typically these are technological improvements or process innovation. In the absence of faster population growth, it will be important for Scotland to raise its competitiveness in these areas to boost productivity further.
- 2.22** Scotland has had good growth in productivity since the recession and has narrowed the gap between it and the UK. Compared to other countries however the UK lags behind, making it a weak benchmark for measuring success. This suggests that neither the UK nor Scotland is globally competitive in terms of productivity and solving the productivity puzzle remains a challenge.

3

Jobs in Scotland
through recession
and recovery

Global, Europe and UK context

Global

3.1 The ILO World Employment and Social Outlook (January 2017) states “The rather disappointing economic performance in 2016 and the below-trend outlook for 2017 raise concerns about the ability of the [global] economy to (i) generate a sufficient number of jobs, (ii) improve the quality of employment for those with a job, and (iii) ensure that the gains of growth are shared in an inclusive manner” (p.1). Although there are signs of a strengthening global economy during 2017, there continue to be challenges in recovering from the global crisis and creating quality employment opportunities for new labour market entrants.

3.2 The ILO outlook indicates that:

- global unemployment is expected to rise as the global labour force grows – to just over 201 million in 2017, up 3.4 million, and 31 million more than pre-crisis levels by 2018. The numbers searching for employment will outstrip job creation
- inequalities in opportunities and social discontent – including considerable gender gaps and a rise in the share of the working population seeking to migrate in most regions of the world, partly related to the lack of good job opportunities.

3.3 Recent world economic growth has been too weak to close the employment and social gaps arising since the 2008 crisis. The ILO outlook predicts the jobs gap will widen, due to a further fall in developed country labour forces and rising unemployment in emerging economies.

Europe

3.4 Wilson (2007) identifies an ageing workforce, migration, climate change, globalisation and technological change as the specific challenges for Europe, citing:

- a declining share of those employed in primary and manufacturing sectors and growth of employment in services
- a steady increase in the number of jobs at the upper end of the occupational/skills spectrum and a shift towards an 'hour glass' occupational structure i.e. while skill biased technological change has increased demand for high level skills, there has (and will be) growth in demand for less skilled jobs and a 'hollowing out' of the occupational spectrum
- a focus on job openings arising from replacement demand rather than expansion demand
- increasing incidences of 'flexicurity' (non traditional jobs, part time, temporary etc.) and challenges regarding social inclusion.

UK

3.5 The UK labour market has performed much better than that of many EU countries (UKCES, July 2014) and has been relatively efficient in keeping people in work. Nonetheless, better UK jobs performance has not been matched by wage growth. The disappointing growth in real wages partly reflects weak labour productivity growth (OECD, 2016).

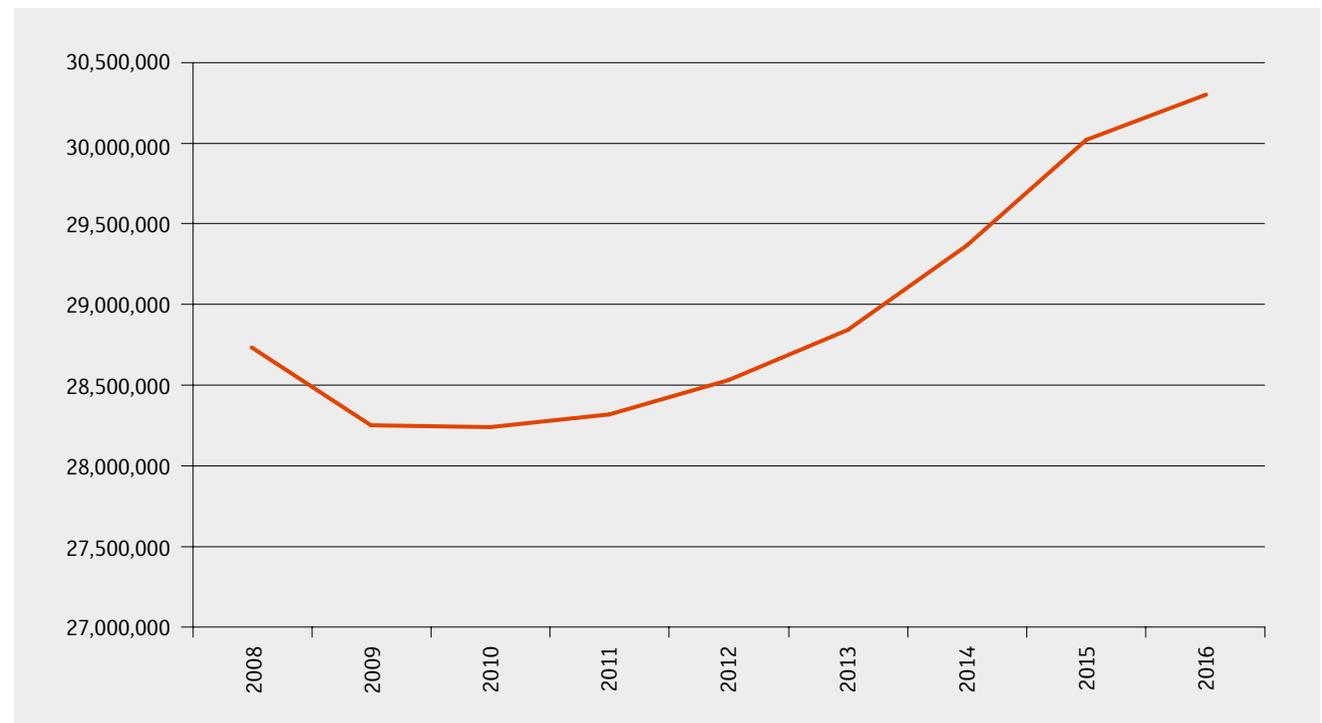
3.6 Figure 3.1 on the next page shows a steady increase in the number of people employed in the UK since the recession. In 2008, there were 28,735,700 people employed in the UK. This fell to a low of 28,245,900 in 2010, however, by December 2016, the number of people employed in the UK was 30,299,400, a 5.4% increase between 2008 and 2016.

3.7 The UK has experienced changes in the nature of employment (UKCES, July 2014):

- more of a 'polarised' labour market with administrative and secretarial employment (traditional middle-level jobs) facing a long-term decline across many industries as certain functions become automated or off-shored
- a moving up the value chain for sectors such as advanced manufacturing and digital and creative but, despite this, a fall in real wages of c. 2% per year since 2010, the longest period of falling UK real wages, linked to falling productivity, increasing non-wage costs of jobs, and rising inequality within wages
- more self employed (some 83% of net employment growth since 2007), but resulting lower relative earnings and substantial real terms falls in income
- an increase in 'precarious' forms of employment including casual, short term and zero hours contracts.

Figure 3.1
Number of working age (16-64) people employed in UK, 2008-2016

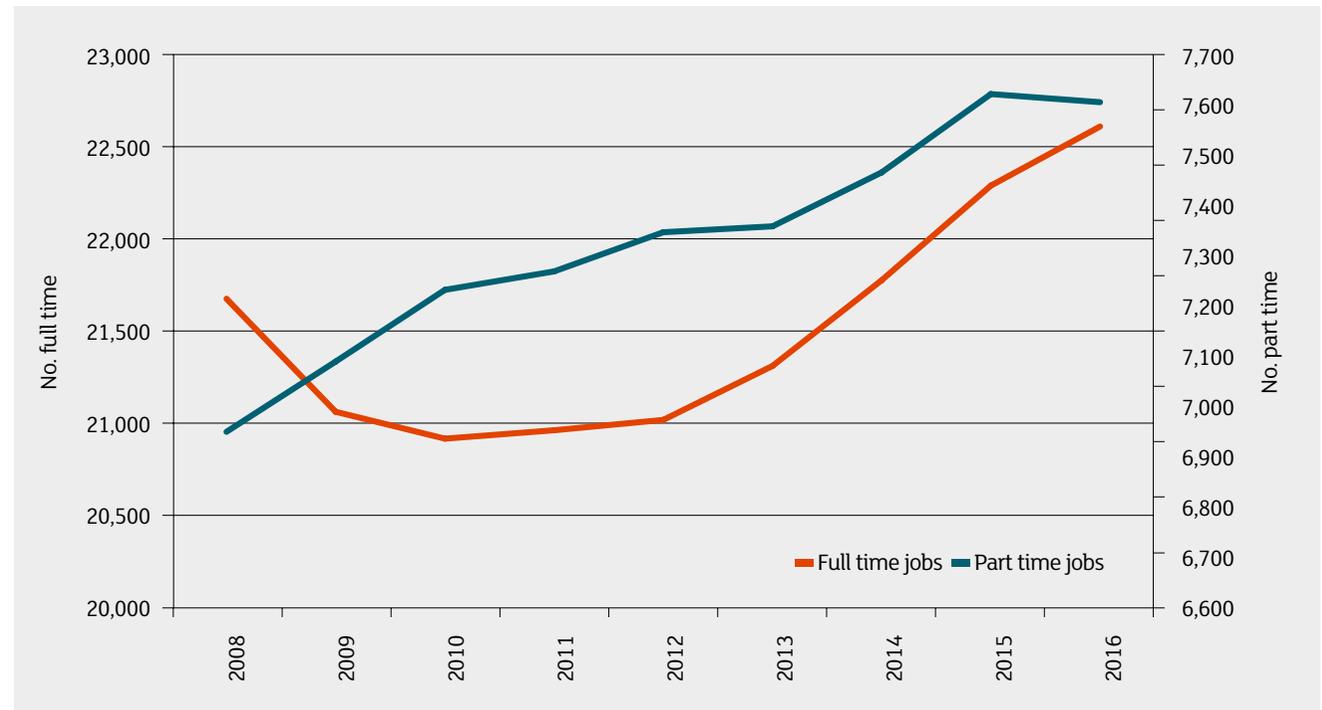
Source: ONS, Annual Population Survey, 2017



3.8 The UK has also seen an increase in part time working. Figure 3.2 shows the different trajectories of full and part time employment in the UK. The number of part time workers in the UK increased across the recession and recovery period, now 7,613,000 – nearly 600,000 more than in 2008 (increase of 8%). During the recession, the number of full time workers in the UK fell (by 755,000 between 2008 and 2010) before growing sharply towards the end of 2012 as economic recovery began to take hold. There are now 22,607,000 full time workers in the UK, 932,000 more than in 2008 (4% increase).

Figure 3.2
Levels of full time and part time employment,
UK, 2008-2016

Source: ONS, Annual Population Survey, 2017



Jobs in Scotland

Total employment

3.9 In 2008, there were 2,485,000 people aged 16-64 employed in Scotland. In common with the UK there was a sharp fall in employment between 2008 and 2010, however employment continued to fall in Scotland, albeit at a slower rate until the end of 2013 (see Figure 3.3). Significantly, there were 6,500 fewer jobs in 2016 in Scotland compared to the previous year (-0.3%), at a time of UK jobs growth (0.9%).

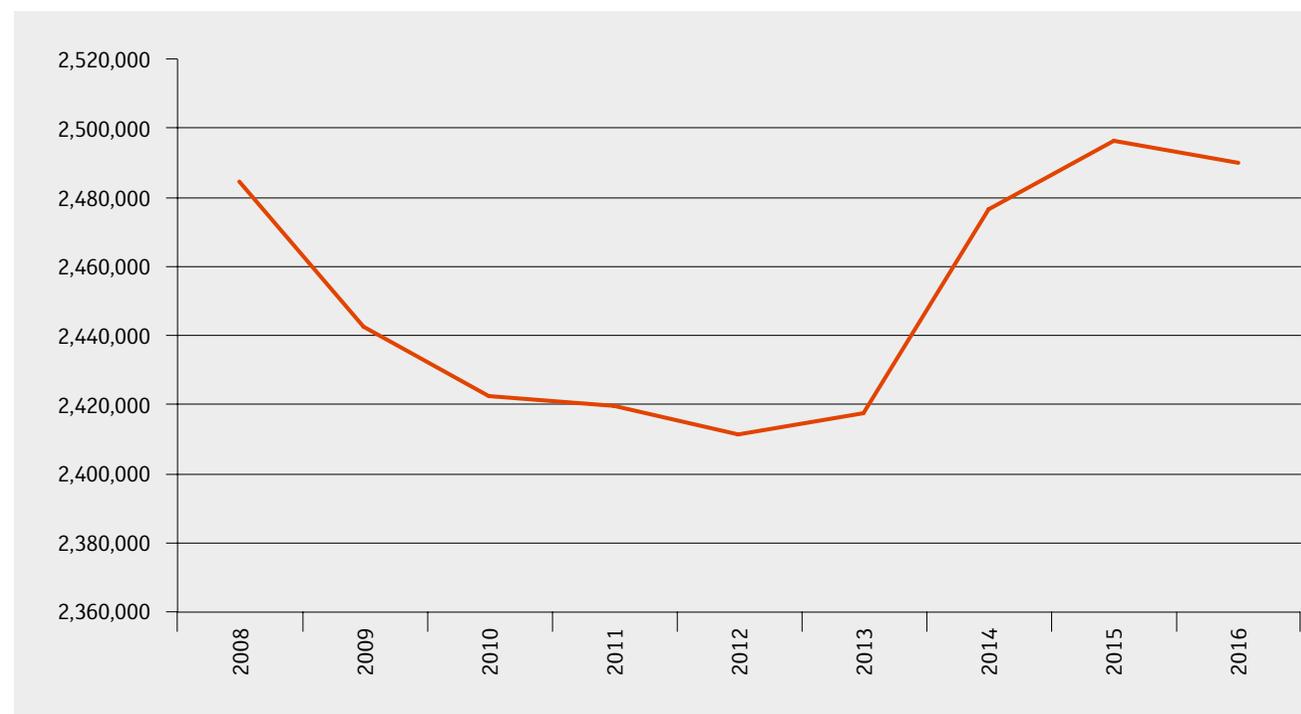
3.10 Scotland's recession from peak to trough was 'shallower' than that of the UK. At the lowest point of the recession, Scotland lost around 2.7% of jobs from the 2008 peak, compared to a fall of around 3.7% in the UK. There was a sharp recovery in employment through 2014, which continued through 2015, albeit at a slower rate of growth. By the end of 2016, the number of people employed in Scotland was approximately 2,490,000.

3.11 The change in the number of jobs between Scotland and the UK since the recession is marked. From 2008 to 2016, employment in Scotland grew by 0.2% (5,400). The UK as a whole had a much greater increase over the same period, 5.4%.

Figure 3.3

Number of working age (16-64) people employed in Scotland, 2008-2016

Source: ONS, Annual Population Survey, 2017



Employment by gender

3.12 There have also been significant shifts in employment by gender. There have been falls in male full time employment where jobs have been replaced by self employment and part time positions. For females the pattern has been different, with an increase in female full time and self employment and a more modest increase in part time work. In the period of 2008 to 2016 (ONS, Annual Population Survey), there was:

- a 15,500 increase for female full time workers (and a 46,800 decrease for males)
- a 9,900 increase for female part time workers (a 23,400 increase for males)
- a 27,000 increase in female self employment (and a 16,000 increase for males).

Employment rates

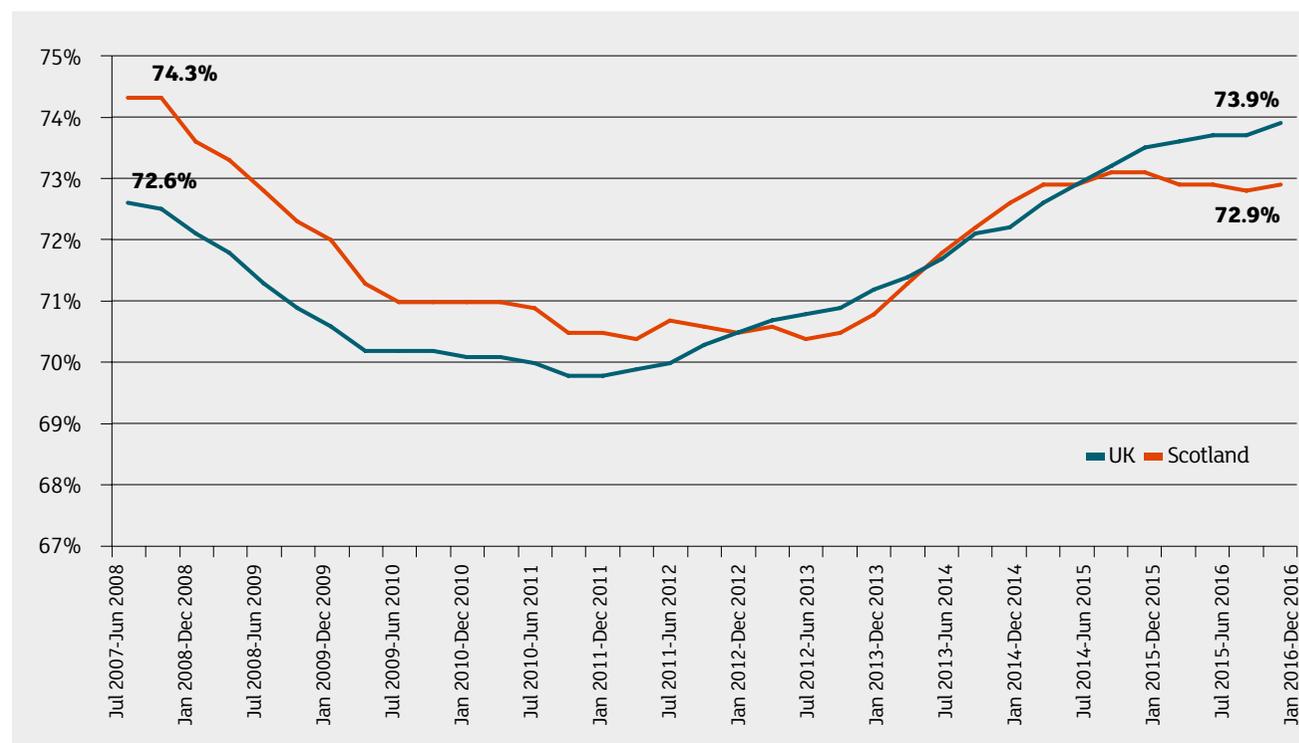
3.13 At the end of 2016, the employment rate in Scotland remained below its pre-recession level. The employment rate in Scotland was 72.9% in 2016 (Jan 2016-Dec 2016), compared to 74.3% in 2008. Historically the employment rate in Scotland has been higher than that across the UK, however in June 2015 the UK outperformed Scotland and the gap has been widening since, with the gap one percentage point by the end of 2016 (see Figure 3.4).

Figure 3.4

Working age population employment rate, 2008-2016

Source: ONS, Annual Population Survey, 2017

Note. The headline employment rate is the number of people aged 16 to 64 in employment divided by the population aged 16 to 64



Public and private sector employment

3.14 The private sector has been the main engine of employment growth over the period 2008 to 2016. Total private sector employment in Scotland stood at 1,888,000 in 2016, with the private sector adding 73,500 jobs between 2008 and 2016. The rate of growth at 4% was above the 0.2% growth rate for overall employment in Scotland. Scottish public sector employment stood at 671,300 in 2016, and there were 31,500 fewer jobs in the public sector compared to 2008, a fall of 4%.

Occupational structure

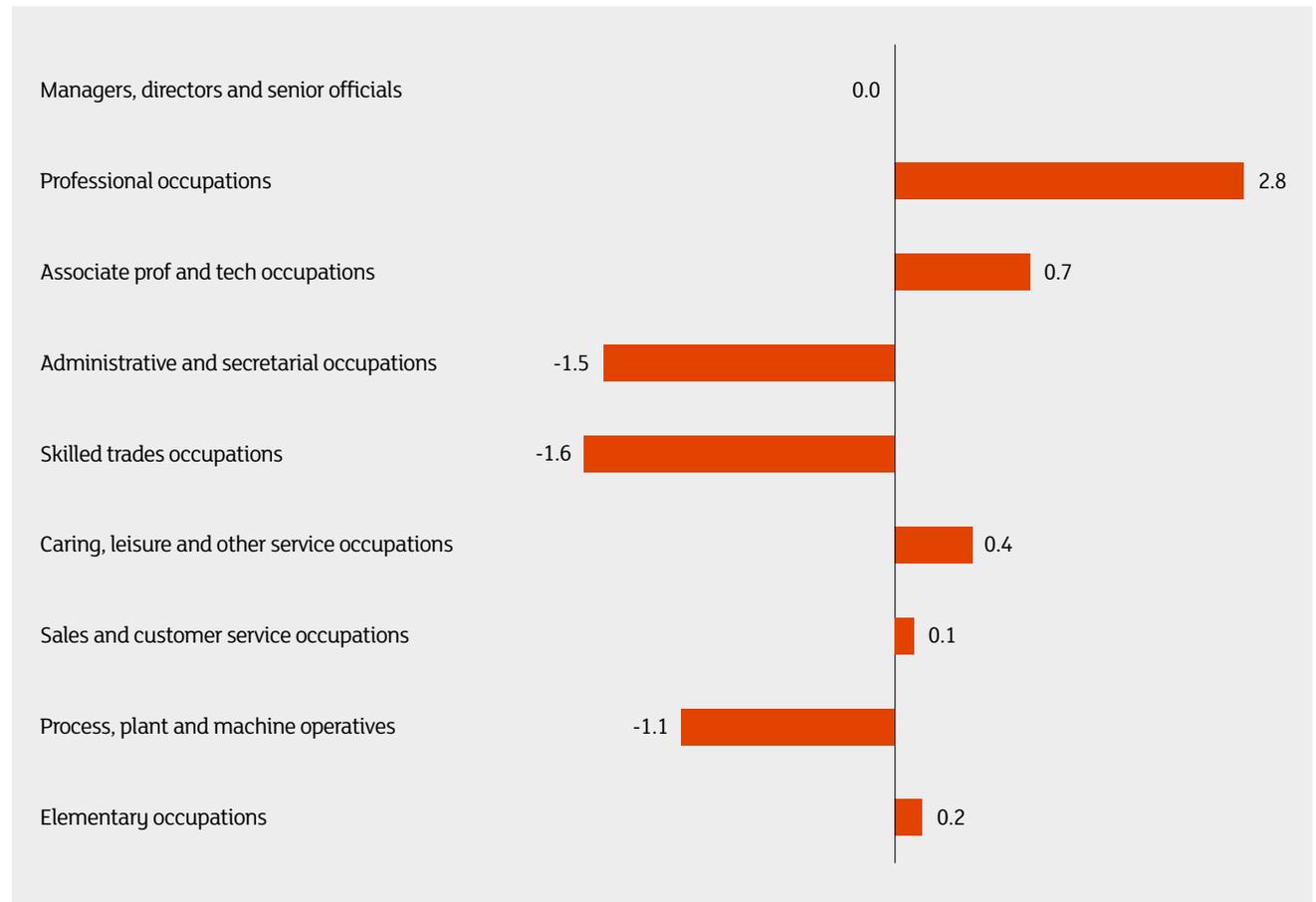
3.15 There are some significant changes in the nature of jobs in Scotland by occupation, similar to patterns emerging at European and UK levels. The biggest shift in workforce share has occurred in the Professional occupations. In 2008 these accounted for 18% of the workforce and by 2016 this was 21%, a three percentage point increase. The share of employment in Associate Professional and Technical occupations has also increased, by approximately 1%.

3.16 In terms of semi-skilled roles, the Caring, Leisure and Other Service occupations had the greatest growth as a proportion of the workforce. From 2008 to 2016 there was a 0.4 percentage point increase (to 10%).

3.17 All other occupations have accounted for a stable (equal to or less than 0.2% growth) or declining proportion of the workforce. The greatest downwards shift occurred in the skilled trades occupations. In 2008 this occupation group accounted for 12% of employment but declined to 11% in 2016 – a percentage point difference of -1.6 (see Figure 3.5 on next page).

Figure 3.5
Shifts in workforce share by Standard Occupational Classification (SOC 2010), Scotland 2008-2016 (percentage point change)

Source: ONS, Annual Population Survey, 2017



3.18 These changing patterns in occupations indicate something of an hourglass shape to the Scottish labour market: with increases in jobs at the top, maintained jobs at the bottom and declining jobs in intermediate occupations.

3.19 Table 3.1 shows employment by occupation in 2008 and 2016, and the change in absolute number, rather than the change in the share of the total workforce.

Table 3.1
Standard Occupational Classification,
2008-2016

Source: ONS, Annual Population Survey, 2017
Note: Proportional change as a percentage of respective SOC categories in 2008

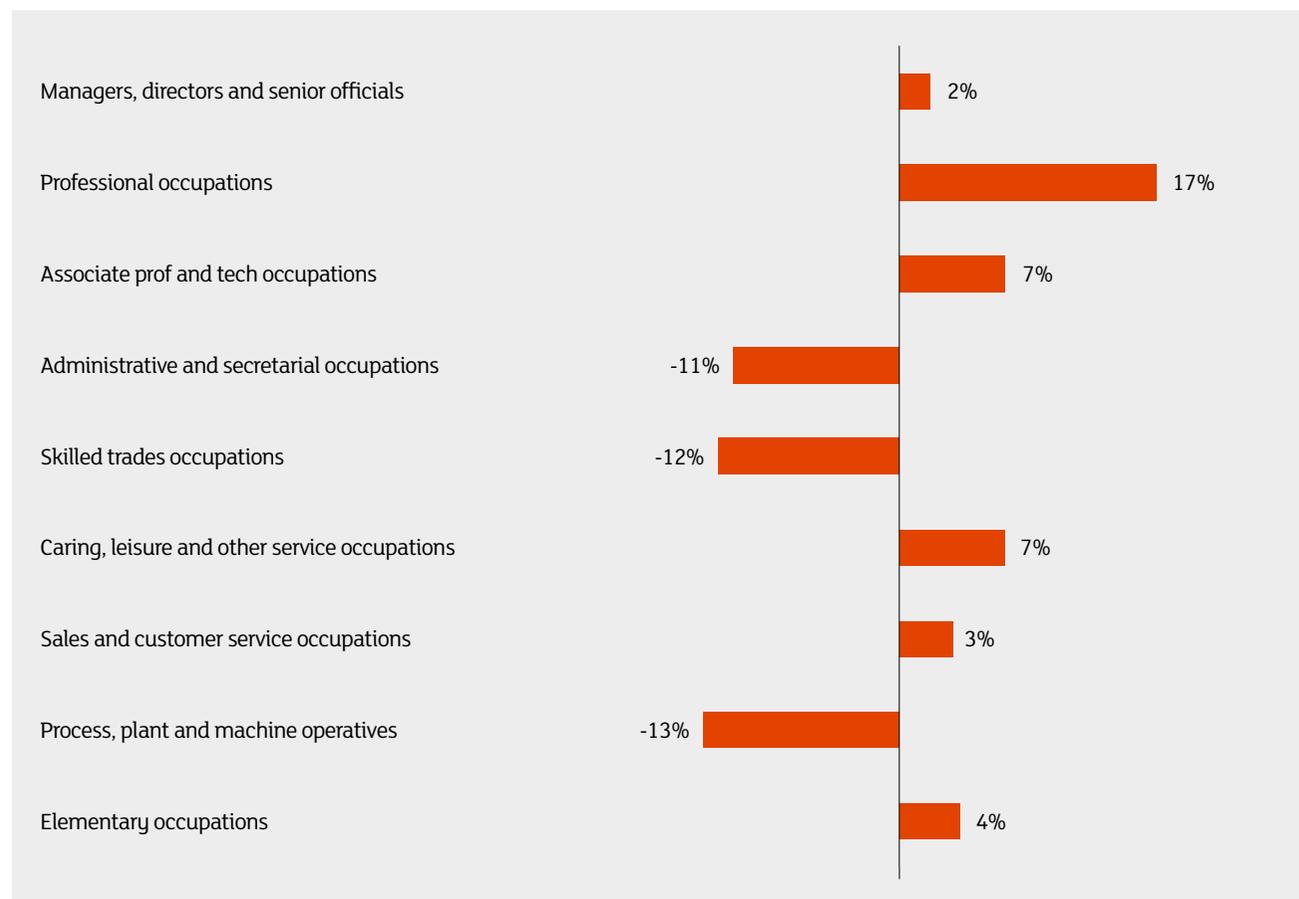
Standard Occupational Classification (SOC)	2008	2016	Percentage change 2009–2016
Managers, directors and senior officials	222,200	225,600	2%
Professional occupations	452,900	532,100	17%
Associate prof and tech occupations	316,900	340,500	7%
Administrative and secretarial occupations	298,100	264,600	-11%
Skilled trades occupations	314,600	277,700	-12%
Caring, leisure and other service occupations	231,900	247,300	7%
Sales and customer service occupations	223,300	229,800	3%
Process, plant and machine operatives	185,500	160,600	-13%
Elementary occupations	277,900	288,200	4%
Total	2,523,300	2,488,900	2%

3.20 Higher skilled occupations, SOC 1-3, accounted for the greatest proportion of employment in 2016. Combined they accounted for 43% of the workforce (i.e. c 1,098,000 jobs). The lower skilled occupations (SOC 7-9) account for the smallest proportion, 26%. Despite shifts by occupation, there remains a large number of intermediate roles, particularly in Administrative and Secretarial and Skilled Trades.

3.21 The increase in Professional Occupation jobs is clear, increasing by 17%, and almost 80,000 over the 2008 to 2016 period (see Figure 3.6). Process, Plant and Machine Operatives had the greatest fall (-13%).

Figure 3.6
Changes of proportions in employment in each Standard Occupational Classification (SOC 2010), Scotland, 2008-2016

Source: ONS, Annual Population Survey, 2017



Wages

3.22 Data on workplace earnings (ASHE, 2016) show that full time jobs in Scotland, at £537 per week (gross), pay slightly lower than the UK average of £539 (see Table 3.2).

3.23 The average pay differential between the UK and Scotland had narrowed in the years to 2014, where the full time pay in Scotland exceeded the UK average. Wages in both areas were equal in 2015 (at £527 per week), however, Scotland fell behind that of the UK again in 2016 (see Figure 3.7 on next page).

Table 3.2**Weekly median workplace earnings, full time workers, Scotland and UK, 2009-2016**

Source: Annual Survey of Hours and Earnings, 2017

	2009	2010	2011	2012	2013	2014	2015	2016
Scotland	£471	£487	£487	£498	£508	£519	£527	£537
UK	£489	£499	£498	£506	£517	£518	£527	£539
Difference	-£18	-£12	-£11	-£8	-£9	£1	0	-£2

Low pay and in work poverty

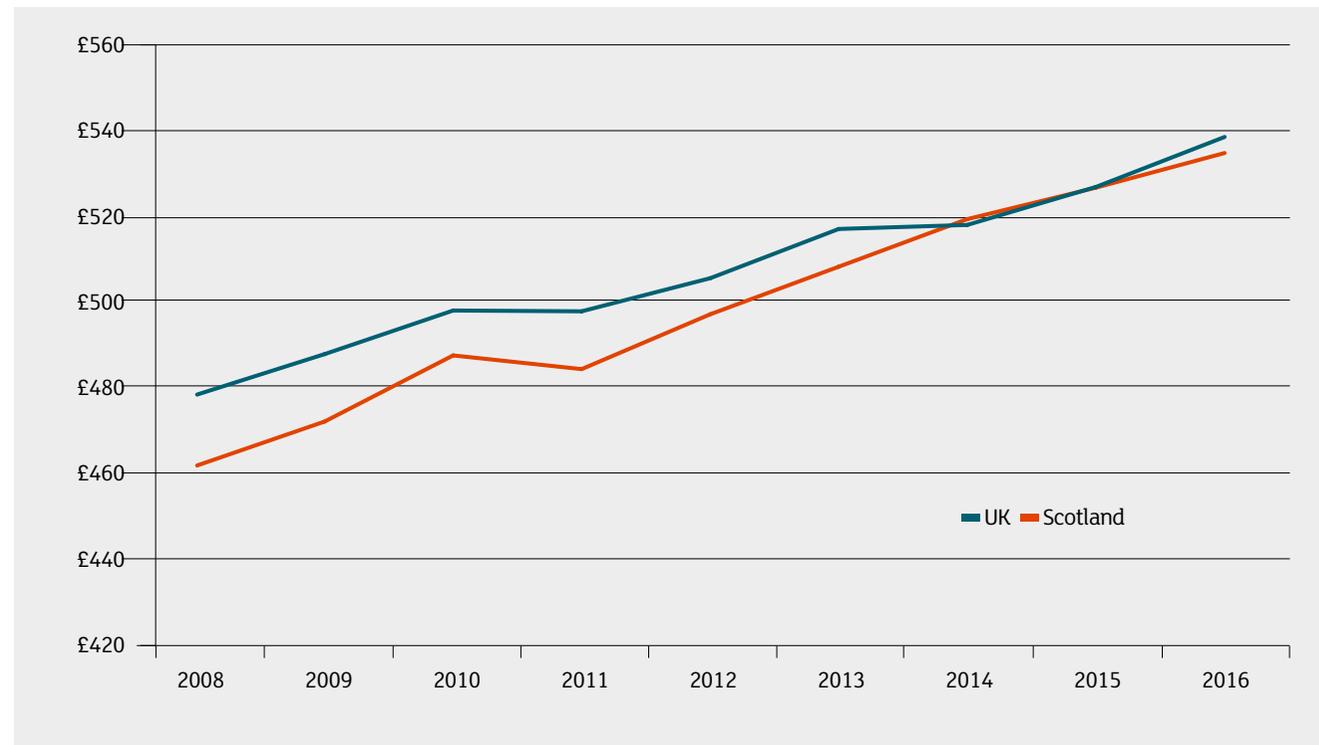
3.24 Notwithstanding the steady increase in workplace earnings there remain incidences of low pay in Scotland as well as a lack of real wage growth. The incidence of low pay varies significantly by occupation and industrial sector and is:

- highest amongst lower and semi-skilled occupations including elementary occupations, sales and customer services and personal services
- more prevalent in the private sector than in the public or the third sector
- more likely in hotels and restaurants, wholesale and retail and administration and support services.

3.25 Although there is no definitive definition, individuals living in households which remain below the relative poverty threshold after housing costs in which at least one member of the household is working full or part time are considered to be experiencing in-work poverty. This is a relative measure that seeks to reflect the extent to which the lowest household incomes are keeping pace with the population as a whole.

Figure 3.7
Weekly median workplace earnings, full time workers, Scotland and UK, 2008-2016

Source: Annual Survey of Hours and Earnings, 2017



3.26 As Table 3.3 shows, in Scotland (2015/16), over 600,000 people in relative poverty lived in households with at least one person working (Scottish Government, 2016). Aldridge reported that the incidence was increasing over time, with in-work poverty growing by 20% in the last decade (Aldridge et al, 2012). Indeed, this is supported by the data which shows that at 610,000 in 2016, the number of people experiencing in-work poverty is the highest since 2008/09.

3.27 The main causes of in-work poverty can be identified as low pay, a reliance on a single earner and individuals working too few hours (Harker, 2006). Low pay is a particular challenge for some groups, including women, younger people, older workers, individuals with no qualifications, some minority ethnic groups, lone parents and disabled people. There is also a significant overlap with part time employment, which is predominantly undertaken by women (Scottish Government, 2015).

3.28 In addition, although there has been an increase in recession/post recession self employment, there is growing evidence (Galloway et al., 2016) of rates of pay being well below ‘minimum’ or ‘living wage’ values. Galloway et al. states that this trend is “bad for individuals, for organisations, for national innovation and competitiveness for national economies.”

Table 3.3
Individuals in poverty in households with at least one adult in employment, Scotland

Source: Scottish Government, from DWP, 2017

Year	All people in in-work poverty (after housing costs)	Percentage of people in in-work poverty (after housing costs)
2008/2009	450,000	47%
2009/2010	440,000	45%
2010/2011	430,000	48%
2011/2012	380,000	45%
2012/2013	510,000	51%
2013/2014	430,000	46%
2014/2015	500,000	53%
2015/2016	610,000	58%

Redundancies

3.29 Real time intelligence captured by SDS confirms recent volatility in the labour market, and significant ongoing churn, with high levels of redundancies affecting the Scottish jobs market. Scottish Government's Partnership Action for Continuing Employment (PACE) delivered by SDS works with individuals and employers that are dealing with redundancy.

3.30 As Table 3.4 illustrates, from April 2016 to March 2017, over 15,000 individuals used PACE services following a redundancy. This has been primarily as a result of challenges in particular industries, notably oil and gas and the steel industry. Almost 5,000 more individuals used PACE services in 2016/17 than in 2010/11 when the recession was at its peak.

3.31 There has been an estimated 160,000 job losses in the UK which are attributed to the oil and gas sector. These have occurred since the oil price downturn towards the end of 2014. The rate of job losses was highest in 2015 and 2016, with slower contraction in 2017 (Oil and Gas UK, 2017). The PACE data also suggests that, on average, the number of redundancies per employer has been increasing. Although this cannot be used as a proxy for overall redundancies in the country, it does point to some concern on the health of the jobs market.

3.32 In 2016/17, the top five local authorities supported by PACE were:

- Aberdeen City - 4,871
- Fife - 1,147
- Glasgow - 1,130
- Edinburgh City - 890
- West Lothian - 797.

3.33 The top five sectors where employees used PACE were in:

- Mining and Quarrying - 4,591
- Manufacturing - 4,200
- Wholesale and Retail - 1,660
- Construction - 1,275
- Financial and Insurance - 999.

Table 3.4

Employers and individuals supported by PACE

Source: Skills Development Scotland, 2017

Financial year	Supported by PACE	
	Employers	Individuals
2010/2011	272	10,923
2011/2012	365	13,017
2012/2013	297	12,014
2013/2014	298	11,674
2014/2015	252	12,161
2015/2016	301	17,883
2016/2017	299	15,167

The rise of 'non-standard' jobs

3.34 Whilst there has been a certain jobs recovery in Scotland since the recession, at least until recently, there are concerns that this has been fuelled by an increase in 'non-standard' jobs such as part time work, self employment, non permanent employment and zero hours contracts. As Table 3.5 illustrates, there has been a reduction in full time employment in Scotland, and increases in self employment, temporary employment and part time employment.

3.35 The fall in full time employment in Scotland contrasts to growth in full time jobs across the UK. The UK has also experienced greater increases in part time, self employment and temporary employment than Scotland, reflecting the overall stronger levels of employment growth.

3.36 In Scotland, the fall in full time employment mostly occurred during and immediately after the recession. Since 2013, full time employment has grown year on year, however, it remains below 2008 levels. The growth in part time employment similarly occurred during or immediately after the recession, and has declined 3% since 2012. This suggests that as the economy has recovered, more full time opportunities have become available.

3.37 We are also seeing an increasing trend in zero hours contracts. For employers, zero hours contracts offer flexibility, but for many individuals the fluctuations in hours and pay present significant challenges and the majority affected are seeking alternative employment. Challenges relate to engaging with the work benefits system, which in turn can lead to difficulties in managing household budgets. Those on zero hours contracts are not a homogeneous group, and there are some for whom the contracts are advantageous because of their flexibility, although these are in the minority (Work Foundation, 2013).

Table 3.5
Employment change in Scotland and the UK, 2008-2016

Source: ONS, Annual Population Survey, 2017

Sector	Scotland			UK		
	2008 (,000)	2016 (,000)	Change (%)	2008 (,000)	2016 (,000)	Change (%)
Full time employment	1,887	1,855	-2%	21,675	22,607	4%
Part time employment	595	628	6%	7,019	7,613	8%
Self employment	252	295	17%	3,565	3,565	21%
Non-permanent employment	116	130	12%	1,358	1,358	18%

3.38 Data from the ONS release ‘People in employment on a zero hours contract: March 2017’ shows the following:

- the proportion of people in employment on a zero hours contract in Scotland increased from 1.9% in April to June 2015 to 3% in April to June 2016
- more recently the proportion of people employed on a zero hours contract has fallen by 0.8 percentage points to 2.2%
- the estimated number of people in the last quarter of 2016 who were employed on a zero hours contract in Scotland was 57,000 (see Table 3.6).

3.39 From October to December 2016, Scotland had a lower proportion of the workforce on zero hours contracts compared to the UK as a whole (2.8%) (and lower than England and Wales individually, 3% and 2.5% respectively). This is a consistent trend to the same period in 2015.

Table 3.6
Level and rate of people on contracts with no guaranteed hours, Scotland

Source: ONS, Labour Force Survey, 2017

Reference period	Number of people employed on a zero hours contract	Percent of people in employment on a zero hours contract
October-December 2014	60,000	2.3%
April-June 2015	51,000	1.9%
October-December 2015	59,000	2.2%
April-June 2016	78,000	3%
October-December 2016	57,000	2.2%

3.40 ONS (2016) identified that zero hours contracts tend to be more prevalent amongst:

- female workers, women accounted for 55% of people on zero hours contracts
- young people, more than one third (36%) of people on a zero hours contract were aged 16-24 years
- people learning as well as working, 20% of people on zero hours contracts were in full time education
- people working in accommodation and food businesses, one in four people on zero hours contracts were in this industry.

3.41 Both employers and individuals remain unclear on employment rights afforded to those hired on zero hours contracts, although their situation is characterised by workers at risk of reduction in hours, dismissal, limited maternity rights and protection from discrimination. Although zero hours contracts clearly suit some employers and some individuals, there is no consensus around what good practice might look like.

3.42 In conclusion, although we have seen employment growth in Scotland much of this has been fuelled by a rise in non-standard jobs. Fraser of Allander (November, 2015) argues that Scotland (and the UK) did not suffer as badly as in previous recessions due, in part, to the rapid rise in part time and self employment but that a strong, sustained recovery in the labour market requires stronger growth in full time workers. Further, there have been considerable variations in the job recovery in Scotland both by sector (see Chapter 4) and by region (see Chapter 5).

4

Sectoral economic performance

- 4.1** The Scottish economy consists of four broad sectors: services; production (incl. manufacturing); construction; and agriculture, forestry and fishing. In 2013, the services sector was the largest accounting for three quarters of the economy (75% of GDP). Production was the next largest accounting for approximately one fifth of the economy (18%). Construction was smaller accounting for 6% and agriculture, forestry and fishing was the smallest sector accounting for 1% of economic output (Scottish Government, 2017).
- 4.2** The sectors each had a varying contribution to the growth of the Scottish economy. Although growth has been relatively flat, the services sector has been the main driver of growth in the Scottish economy both in the short (three months to 2016 Q4) and medium term (12 months to 2016 Q4). It has offset contractions in the manufacturing and construction sectors in the short and medium term. Agriculture has made a positive contribution to economic growth but, due to its small size, the impact on overall performance has been negligible (Scottish Government, 2017).
- 4.3** Productivity statistics measured by GVA per hour for the four broad sectors are experimental and because of this caution is needed when interpreting the results. They suggest that the services sector has had stable productivity since 2009, while the manufacturing sector has been more volatile and productivity has fluctuated from year to year. The construction sector also appears volatile year to year, however the capital intensive nature of the sector could be skewing the results. Data for the agricultural sector is analysed alongside other non-manufacturing sectors so was not available at the time of writing (Scottish Government, 2017).
- 4.4** Scotland's record in terms of Business Research and Development (BERD) remains weak and exporting remains concentrated in too small a number of businesses and sectors.

Sector employment

4.5 According to the Business Register and Employment Survey (BRES) there were around 2,540,600 people in employment in Scotland in 2015, up from 2,523,100 in 2009 – or an increase of around 1%. The largest sector in terms of employment in Scotland was the health sector – which accounted for 412,700 jobs (16% of all employment in 2015). There were also large numbers of jobs in other public sector dominated industries including education (194,700), and public administration and defence (151,700) (see Table 4.1).

4.6 Retail accounted for 244,400 jobs in 2015 making it the second largest sector in Scotland. Most of these jobs were in the private sector. Other predominantly private sector industries, accounting for a large proportion of jobs were: accommodation and food services (205,100); business administration and support services (184,700); and manufacturing (181,300) (see Table 4.1).

Table 4.1
Change in employment, by broad industrial group, 2009-2015, ranked by levels in 2015

Source: Business Register and Employment Survey, 2017

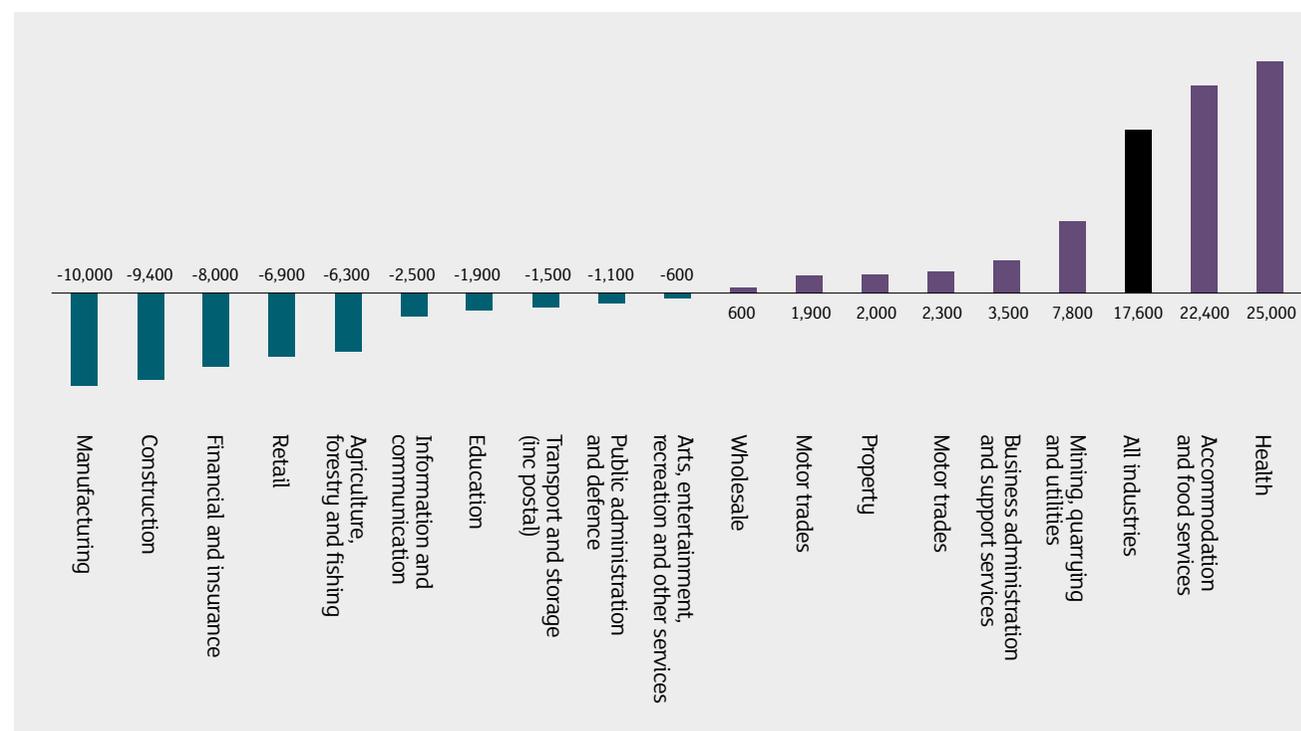
Broad industrial group	Employment 2009	Employment 2015	Proportion of workforce in 2015
Health	387,600	412,700	16%
Retail	251,300	244,400	10%
Accommodation and food services	182,700	205,100	8%
Education	195,600	193,700	8%
Business administration and support services	182,300	184,700	7%
Manufacturing	191,300	181,300	7%
Professional, scientific and technical	163,400	166,900	7%
Public administration and defence	152,800	151,700	6%
Construction	146,500	137,200	5%
Arts, entertainment, recreation and other services	107,100	106,500	4%
Transport and storage (inc postal)	106,200	104,600	4%
Financial and insurance	94,200	86,200	3%
Wholesale	78,000	78,600	3%
Agriculture, forestry and fishing	81,200	75,000	3%
Mining, quarrying and utilities	61,800	69,600	3%
Information and communication	65,800	63,300	2%
Motor trades	43,700	45,600	2%
Property	31,600	33,600	1%
All employment	2,523,100	2,540,600	100%

4.7 The 1% growth from 2009 to 2015 equates to around 17,600 additional jobs. However, there have been some important shifts in the nature of employment within Scotland over the recession and recovery, with some sectors increasing and others decreasing (see Figure 4.1):

- the largest increases in employment were in the health sector (25,000 workers) and the accommodation and food services sector (22,400)
- there were also employment increases in mining, quarrying and utilities (7,800); professional, scientific and technical (3,500) and business administration and support services (2,300)
- a number of sectors saw large falls in employment including manufacturing (-10,000 jobs); construction (-9,400); finance and insurance (-8,000); retail (-6,900) and agriculture, forestry and fishing (-6,300).

Figure 4.1
Absolute change in employment, by all industries and broad industrial groups, 2009-2015

Source: Business Register and Employment Survey, 2017

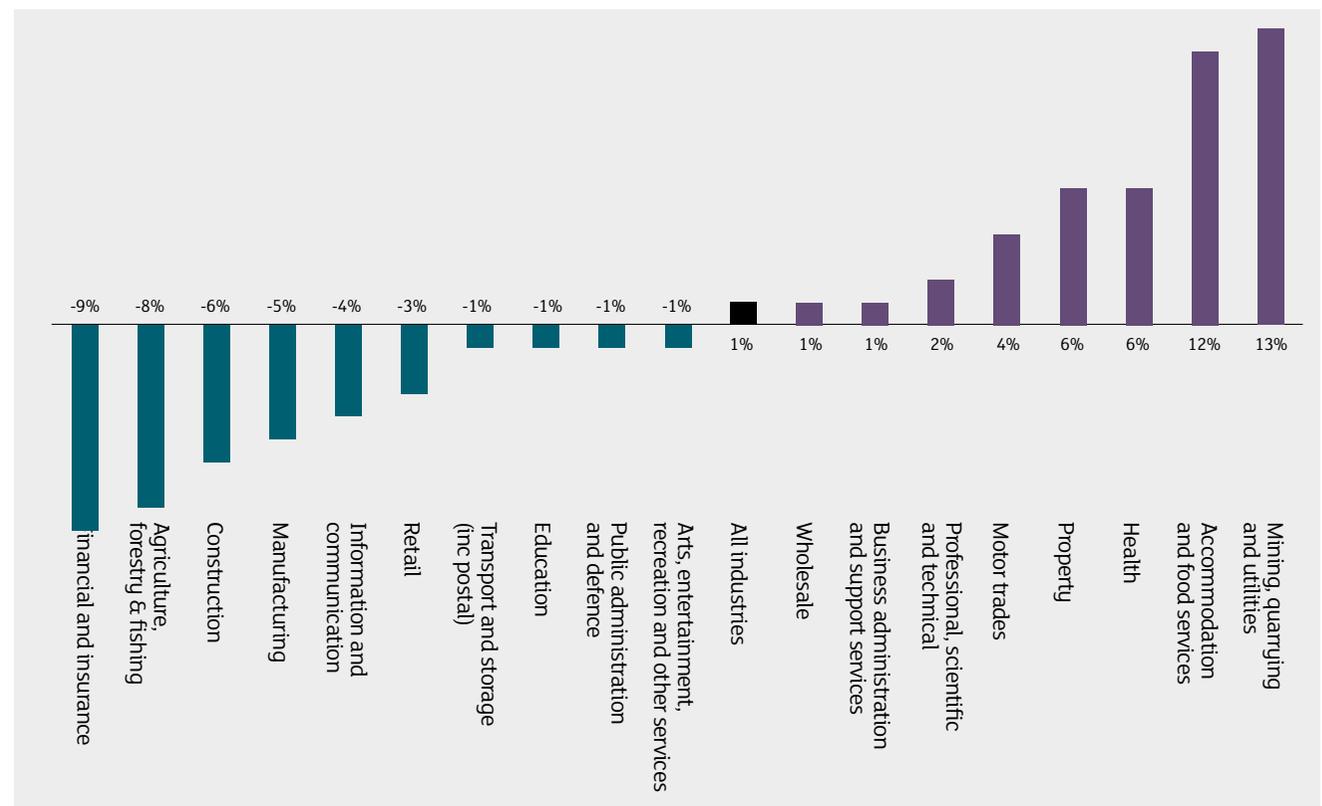


4.8 The change in absolute employment does not contextualise the size of the shifts relative to the size of the sector. Changes relative to the size of the sector are expressed as percentage changes. This analysis shows that (see Figure 4.2):

- the biggest percentage growths have been in mining, quarrying and utilities (13%), accommodation and food services (12%), and health and property (both 6%)
- with employment as a whole increasing by 1%, this shows that as well as the aforementioned industries, motor trades (4%) and professional, scientific and technical (2%) have increased at above average rates
- the biggest percentage falls have been in finance and insurance (-9%), agriculture, forestry and fishing (-8%) and construction (-6%).

Figure 4.2
Percentage change in employment,
by all industries and broad industrial groups,
2009-2015

Source: Business Register and Employment Survey, 2017



Sub-sector employment

4.9 The BRES also allows analysis of sub-sectors within broad industrial groupings. Table 4.2 shows the ten sub-sectors with the highest level of employment growth between 2009 and 2015. The headlines are:

- the single largest growth in employment at a sub-sectoral level was recorded in restaurant and mobile food service activities (22,200) followed by other human health activities (13,100)
- there were also large increases in some sub sectors related to health and social work: other social work activities (6,400) and social work activities for the elderly and disabled (6,000)
- the other sub sectors with large employment increases were public services, retail and consultancy services in management and computing.

Table 4.2
Change in employment by 3 Digit SIC,
2009-2015, ten highest increases

Source: Business Register and Employment Survey , 2017
Note. Figures may not sum due to rounding

Industry (3 Digit SIC Code)	Employment 2009	Employment 2015	Absolute change 2009-2015
Restaurants and mobile food service activities	66,900	89,000	22,200
Other human health activities	37,600	50,700	13,100
Administration of the State and the economic and social policy of the community	98,500	107,800	9,300
Management consultancy activities	15,400	22,700	7,300
Other social work activities without accommodation	70,000	76,500	6,400
Other specialised wholesale	17,400	23,800	6,400
Social work activities without accommodation for the elderly and disabled	26,300	32,300	6,000
Computer programming, consultancy and related activities	28,800	34,100	5,300
Other education	14,400	19,500	5,100
Retail sale of food, beverages and tobacco in specialised stores	16,900	21,800	4,900

4.10 The highest level of employment decline 2009 to 2015 (Table 4.3) shows:

- the largest falls were recorded in cleaning activities (-11,700), accounting, bookkeeping and audit activities (-11,600), provision of services to the community (-9,800) and electrical, plumbing and other construction installation activities (-7,500)
- large decreases in some sub sectors related to public health, retail and agriculture.

Table 4.3
Change in employment 3 Digit SIC,
2009-2015, ten highest decreases

Source: Business Register and Employment Survey, 2017
Note: Figures may not sum due to rounding

Industry (3 Digit SIC Code)	Employment 2009	Employment 2015	Absolute change 2009-2015
Cleaning activities	43,700	32,100	-11,700
Accounting, bookkeeping and auditing activities; tax consultancy	33,500	21,900	-11,600
Provision of services to the community as a whole	47,600	37,800	-9,800
Electrical, plumbing and other construction installation activities	45,000	37,500	-7,500
Hospital activities	168,500	161,100	-7,400
Retail sale of other household equipment in specialised stores	23,500	16,200	-7,300
Activities of other membership organisations	17,600	11,000	-6,700
Agricultural/farming (DEFRA/Scottish Executive Agricultural Data)	70,700	64,900	-5,800
Insurance	15,800	10,400	-5,400
Maintenance and repair of motor vehicles	24,000	19,000	-5,000

Key sectors

4.11 Sectorally, the Scottish Government have identified key growth sectors that are deemed to provide Scotland with a distinct comparative advantage. These are:

- Food and Drink (including agriculture and fisheries)
- Creative Industries (including digital)
- Sustainable Tourism
- Energy (including renewables)
- Financial and Business Services
- Life Sciences.

4.12 In addition, other sectors of national importance include:

- ICT/Digital
- Engineering
- Chemical Sciences
- Construction.

4.13 Table 4.4 provides a summary of past, current and future employment for the key sectors. It also shows the skills challenges that each sector has.

Table 4.4
Sectoral performance and skills challenges

Source: NOMIS BRES for employment data, forecast data from Oxford Economic Forecasts (both released in 2017)

Sector	Skills challenges
Chemical Sciences Employment (2015): 8,383 Change in employment (2009-2015): -1.5% Anticipated change in employment 2017-2027: -14%	Key issues <ul style="list-style-type: none"> • Supply of science and engineering skills is problematic due to the highly competitive labour market • The impact of emerging technologies could drive the shift in qualification needs higher • There is a shortage of technical apprentices • There is sporadic demand for contract support due to the plant shut-downs and manufacturing turnarounds
Construction Employment (2015): 175,292 Change in employment (2009-2015): -5% Anticipated change in employment 2017-2027: +11%	Key issues <ul style="list-style-type: none"> • Growth dependent on recovery of lending to private sector and public infrastructure spending • Integrating construction processes with technological developments (e.g. 'smart cities') will drive long-term growth • Ageing workforce meaning a high level of replacement demand for experienced skilled labour
Creative Industries Employment (2015): 70,722 Change in employment (2009-2015): -3.2% Anticipated change in employment 2017-2027: +8%	Key issues <ul style="list-style-type: none"> • Skills gaps and shortages, particularly around ICT skills • The importance of communication skills, digital and computing skills • Demand and expectations at entry level • Business skills linked to commercial sustainability
Energy Employment (2015): 72,642 Change in employment (2009-2015): +18.9% Anticipated change in employment 2017-2027: -10%	Key issues <ul style="list-style-type: none"> • Coal, oil and gas production expected to fall, due to low domestic reserves and high costs of extraction relative to imports • Future demand for skills and the potential skills gaps and shortages in the sector • Encouraging more graduates to enter the sector, improving their skills and general upskilling of the workforce
Engineering Employment (2015): 146,698 Change in employment (2009-2015): +2.2% Anticipated change in employment 2017-2027: -1%	Key issues <ul style="list-style-type: none"> • Future demand for skills and the potential skills gaps and shortages in the sector • Encouraging more graduates to enter the sector, improving their skills and general upskilling of the workforce • Increasing automation and technology improvements will remove some traditional jobs

Table 4.4
Cont'd...

Sector	Skills challenges
<p>Financial and Business Services Employment (2015): 210,188 Change in employment (2009-2015): +5.7% Anticipated change in employment 2017-2027: +8%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • Attraction and retention of top talent, especially at entry level and alternative entry routes • Work readiness of new entrants • Developing key skills for the sector, including digital and technological skills • Improve sector engagement with skills development and the SIP
<p>Food and Drink Employment (2015): 76,780 Change in employment (2009-2015): +2.3% Anticipated change in employment 2017-2027: -6%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • Raising the profile and image of the sector • Increasing leadership and management excellence • Developing skills for business improvement and skills for business growth
<p>Health and Social Care Employment (2015): 408,211 Change in employment (2009-2015): +6.9% Anticipated change in employment 2017-2027: +3%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • Wider demographic changes, such as the ageing population, will drive increased demand in the long run • Sector attractiveness, including low pay • Technical skills in key health occupations and ICT skills
<p>ICT/ Digital Employment (2015): 59,049 Change in employment (2009-2015): +1.2% Anticipated change in employment 2017-2027: +7%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • The demand for individuals with ICT and digital technologies skills, across sectors, is predicted to grow • Challenges in recruiting enough people with the right skills and STEM proficient • Pace of change in technical competencies, including software, content development and coding
<p>Life Sciences Employment (2015): 17,194 Change in employment (2009-2015): +25.1% Anticipated change in employment 2017-2027: +5%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • Constant change in skills requirements of the workforce, requiring agility in the education system • Demand for the right blend of business and commercial skills • Further development of the talent pool needs to be aligned with the changing expectations and business opportunities • Demand for a higher level of skills of an interdisciplinary nature
<p>Tourism Employment (2015): 210,627 Change in employment (2009-2015): +15.3% Anticipated change in employment 2017-2027: -6%</p>	<p>Key issues</p> <ul style="list-style-type: none"> • Skills gaps in management, leadership and business skills • Customer service skills gaps • Sector attractiveness, including low pay • Increasing automation and technology improvements will remove some traditional jobs, need to improve digital skills

5

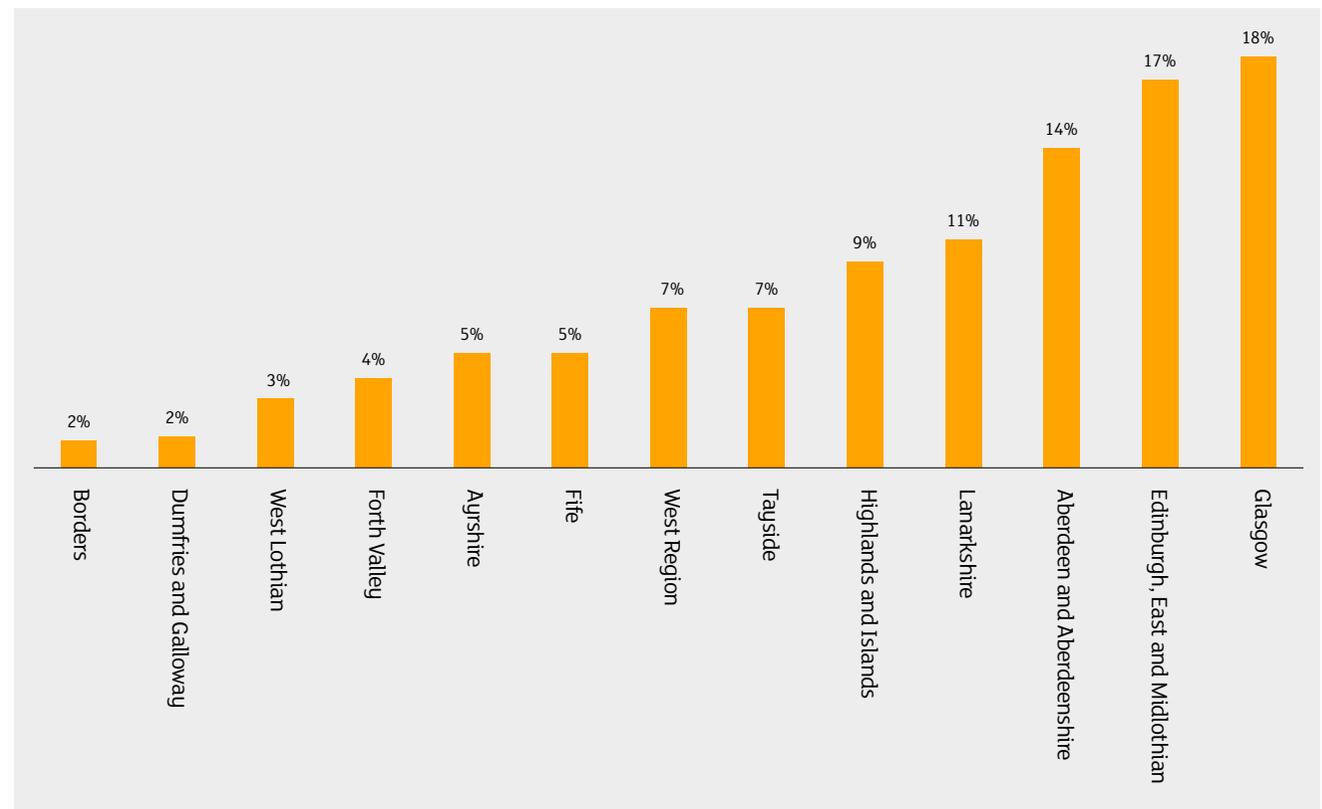
Regional
economic
performance

5.1 Each region in Scotland has a distinct economy, the largest being Glasgow region which accounted for almost one fifth (18%) of Scottish GVA (real prices 2013) in 2017. As might be expected other city regions accounted for large proportions of the remaining Scottish economic output. Edinburgh and the Lothians accounted for 17% and Aberdeen City and Shire accounted for 14% (see Figure 5.1).

Figure 5.1
Proportion of Scottish GVA attributable to Scotland's regions, 2017

Source: OE Data Forecasts, 2017

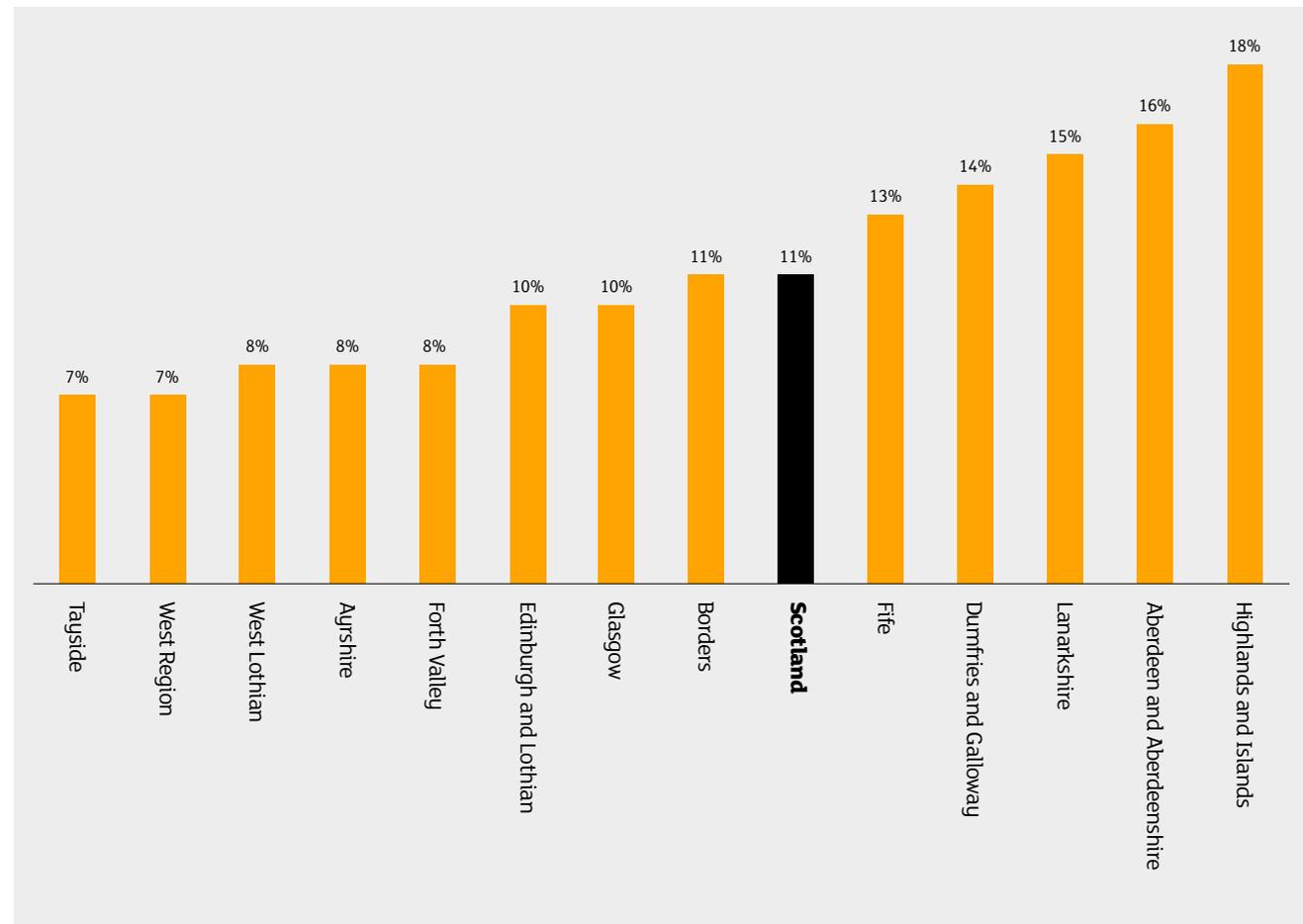
Note: Sum of percentages does not equal 100 due to overlapping geographies



5.2 Since the recession all of Scotland’s regional economies has grown. Economic growth in Scotland, although uneven across the regions, has not been concentrated in city regions, and some more rural economies have shown relatively strong growth; for instance, the Highlands and Islands has experienced GVA growth of 18% since 2009, whilst Dumfries and Galloway has also had strong growth of 14% (see Figure 5.2).

Figure 5.2
GVA growth (percentage), 2009-2017

Source: RSA Data Matrix, 2017



Total employment

5.3 According to Annual Population Survey (APS) data, total employment in Scotland stood at 2,485,000 in 2016 (January-December) – up a total of 5,400 jobs from 2008, or an increase of 0.2% (see Table 5.1).

Table 5.1
Change in total employment, by region,
2008-2016, ranked by employment levels in 2016

Source: ONS, Annual Population Survey
 Note: Annual periods are January to December

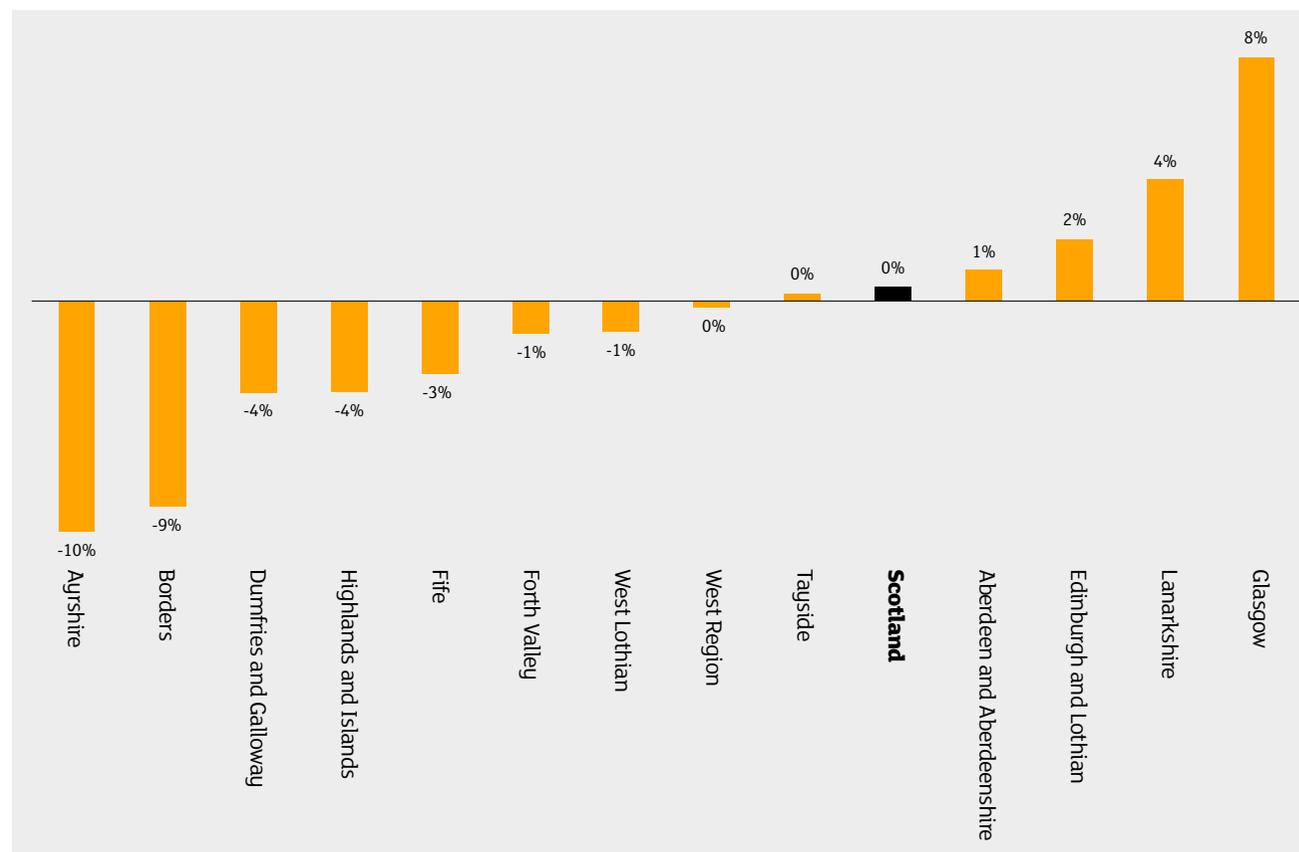
Region	Employment 2008	Employment 2016	Percentage change 2009-2015/16
Glasgow	344,200	371,900	8%
Lanarkshire	350,200	363,800	4%
Edinburgh and Lothian	324,100	330,600	2%
Aberdeen City and Shire	241,600	243,100	1%
Highlands and Islands	236,300	227,900	-4%
West Region	202,800	202,000	<-1%
Tayside	186,600	187,000	<1%
Fife	171,500	166,700	-3%
Ayrshire	167,800	151,200	-10%
Forth Valley	140,200	138,600	-1%
West Lothian	87,000	86,300	-1%
Borders	54,600	49,600	-9%
Dumfries and Galloway	69,000	66,300	-4%
Scotland	2,485,000	2,490,400	0.2%

5.4 At a regional level however there have been some significant differences in terms of total employment growth (see Figure 5.3):

- employment growth has been particularly strong in Scotland's two largest regions: Glasgow (8%) and Lanarkshire (4%)
- in addition to these, there were two regions that had growth above the Scottish average of 0.2%. These were the Edinburgh and Lothians (2%) and Aberdeen City and Shire (1%)
- total employment has not recovered to pre-recession levels in some parts of the country including the very north, south and south west: Ayrshire (-10%), Borders (-9%), Dumfries and Galloway (-4%) and Highlands and Islands (-4%).

Figure 5.3
Change in total employment,
by region, 2008-2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December



Private sector employment

5.5 As stated in Chapter 3, the private sector has been the main engine of employment growth over the period 2008 to 2016. The rate of growth at 4% was around five times the growth rate for overall employment in Scotland (0.2%).

5.6 Lanarkshire had the largest private sector workforce of any region in 2016. Overall private sector employment in the region was 271,200. Three of Scotland's city regions, Glasgow, Edinburgh and Lothian and Aberdeen City and Shire, were the next largest with each having private sector employment of close to or over 200,000 (see Table 5.2).

Table 5.2
Change in private sector employment, by region, 2009-2016, ranked by level in 2016

Source: ONS, Annual Population Survey⁵
Note: Annual periods are January to December

Region	Private sector employment 2009	Private sector employment 2016	% change 2009-2016
Lanarkshire	253,500	271,200	7%
Glasgow	243,100	267,900	10%
Edinburgh and Lothian	240,300	252,400	5%
Aberdeen City and Shire	191,500	197,200	3%
Highlands and Islands	164,000	172,200	5%
Tayside	133,200	145,100	9%
West Region	143,200	144,500	1%
Fife	125,700	124,200	-1%
Ayrshire	123,500	112,100	-9%
Forth Valley	101,300	106,100	5%
West Lothian	63,200	67,200	6%
Dumfries and Galloway	53,200	53,300	<1%
Borders	39,700	40,000	1%
Scotland	1,814,500	1,888,000	4%

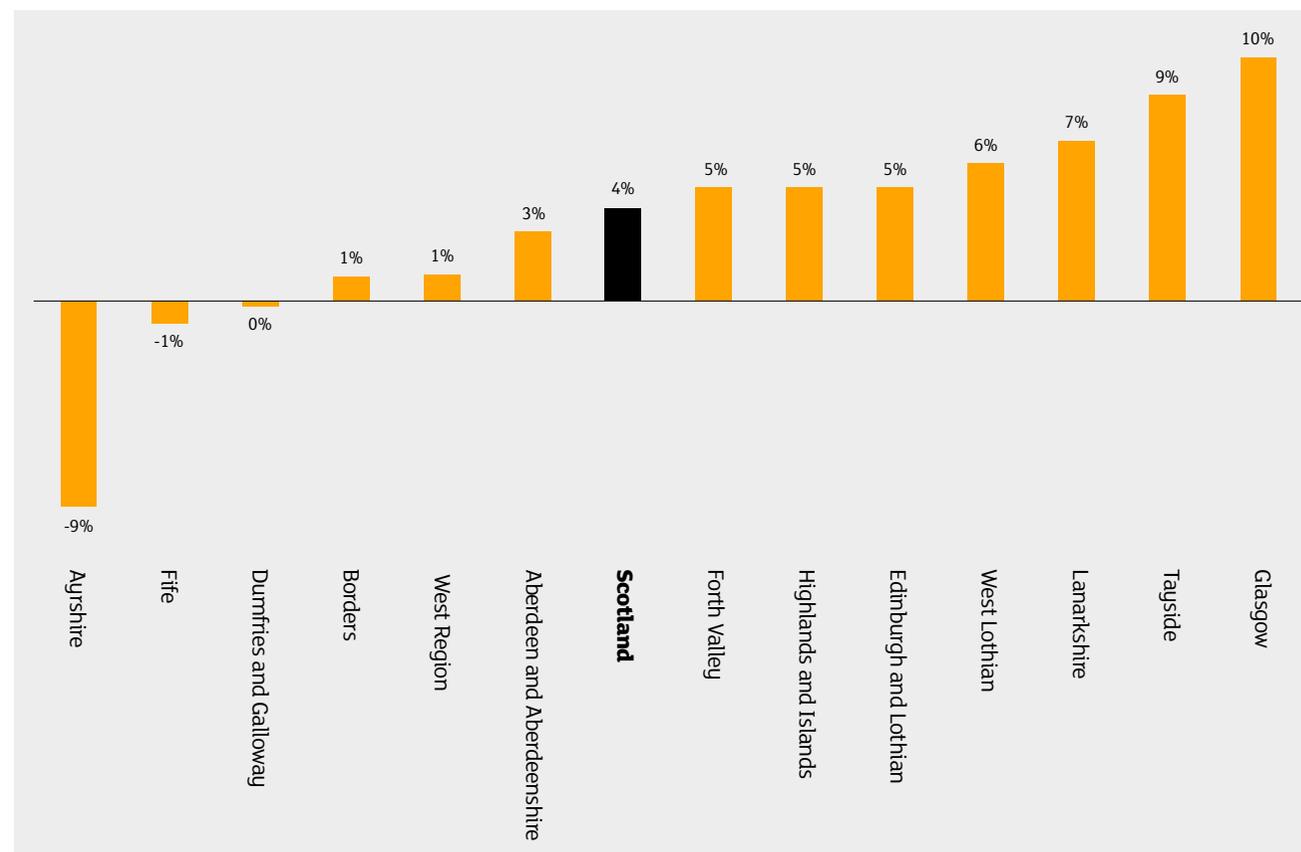
⁵ The preferred source of statistics for public sector employment is the Quarterly Public Sector Employment Survey (QPSES) and external sources, however, figures from this source are not available below government office region level. Individuals in the Annual Population Survey (APS) are classified to the public or private sector according to their responses to the survey. Consequently, the classification of an individual sector may differ from how they would be classified in QPSES statistics. Official estimates of public sector employment compiled from QPSES are generally lower than estimates available from APS. This is partially because many people, who work within public sector premises, whilst being employed by private sector organisations, will classify themselves as working in the public sector, e.g. cleaners or security guards employed by a contractor to work at public sector premises.

5.7 There were however some significant regional variations in private sector jobs growth across Scotland's regions:

- private sector employment growth was well above average in two of Scotland's main city regions: Glasgow Region (10%) and Tayside (9%)
- Lanarkshire (7%), West Lothian (6%), Edinburgh and Lothian (5%), Highlands and Islands (5%) and Forth Valley (5%) also experienced private sector jobs growth above the Scottish average, however in the case of the Forth Valley this was from a relatively small base
- the number of private sector jobs fell in two areas, both Fife (-1%) and Ayrshire (-9%) experienced reductions (see Figure 5.4).

Figure 5.4
Percentage change in private sector employment, by region, 2008-2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December



Public sector employment

5.8 As described in Chapter 3, Scottish public sector employment stood at 671,300 in 2016, and there were 31,500 fewer jobs in the public sector compared to 2008, a fall of 4%.

5.9 Glasgow had the highest level of employment in the public sector in 2016 with 108,700 jobs. The south of Scotland had the lowest number with 15,500 public sector jobs in Dumfries and Galloway and 13,200 in the Borders (see Table 5.3).

Table 5.3
Change in public sector employment, by region, 2008-2016, ranked by level in 2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December

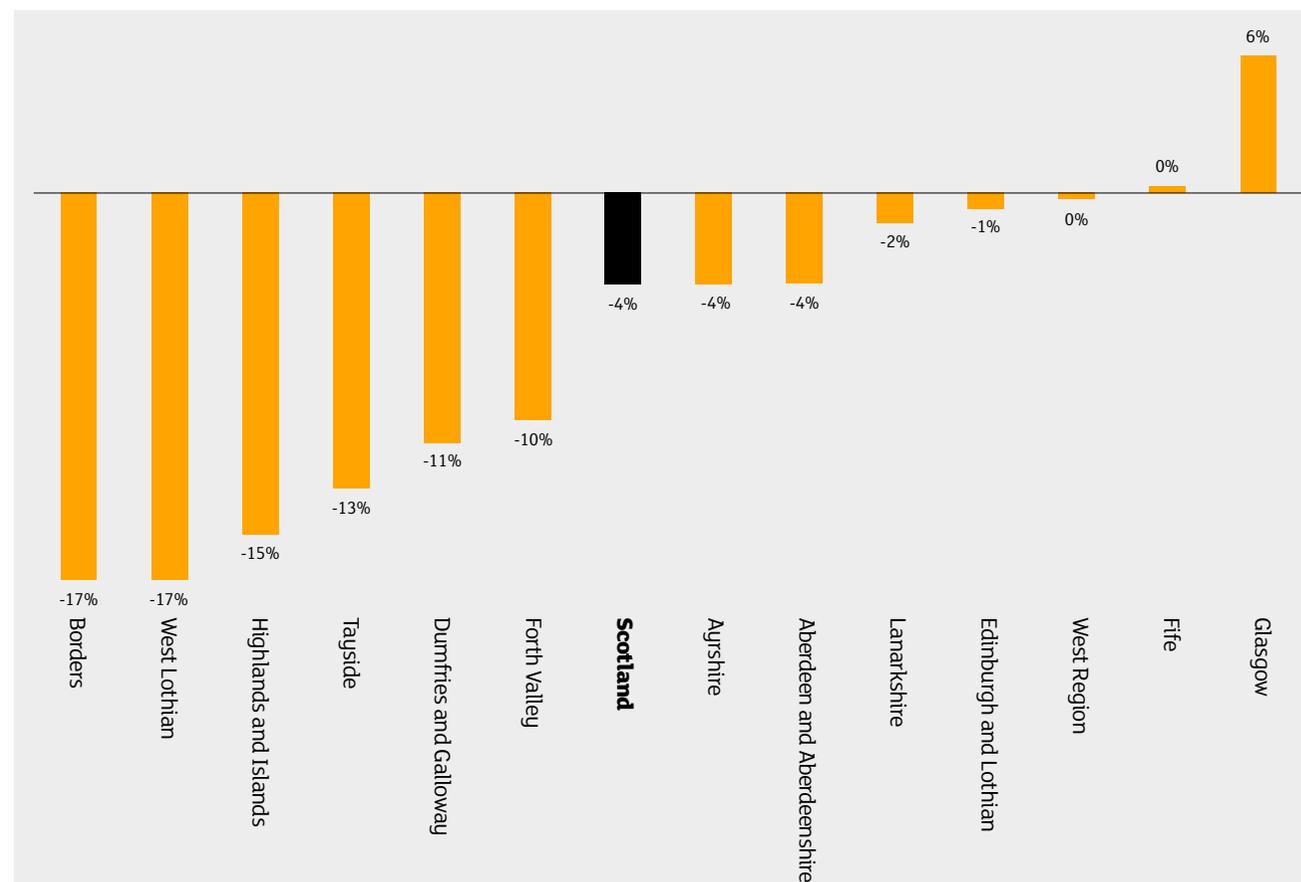
Region	Public sector employment 2008	Public sector employment 2016	% change 2009-2016
Glasgow	102,600	108,700	6%
Lanarkshire	100,900	99,100	-2%
Edinburgh and Lothian	88,600	87,900	-1%
Highlands and Islands	78,500	67,000	-15%
West Region	62,200	61,900	<-1%
Aberdeen City and Shire	55,200	53,000	-4%
Tayside	56,800	49,300	-13%
Fife	47,600	47,700	<1%
Ayrshire	45,000	43,000	-4%
Forth Valley	40,200	36,300	-10%
West Lothian	23,900	19,900	-17%
Dumfries and Galloway	17,400	15,500	-11%
Borders	15,900	13,200	-17%
Scotland	702,800	671,300	-4%

5.10 There were significant regional variations in public sector employment across Scotland's regions:

- public sector employment falls were greatest – and approximately four times the Scottish average – in the Scottish Borders (-17%), West Lothian (-17%) and Highlands and Islands (-15%). Highlands and Islands also experienced the largest absolute fall in public sector employment of Scotland's regions of around 11,500 jobs
- the other regions which also experienced bigger falls in public sector employment than the Scottish average were Tayside (-13%), Dumfries and Galloway (-11%), and Forth Valley (-10%)
- Ayrshire and Aberdeen City and Shire had a similar decline to Scotland as a whole (-4%). Edinburgh and Lothian (-1%) and Lanarkshire (-2%) both experienced smaller declines in public sector employment compared to the Scottish average
- Fife and West Region had very limited change and Glasgow (6%) was the only region to record an increase in public sector employment (see Figure 5.5).

Figure 5.5
Percentage change in public sector employment, by region, 2008-2016

Source: ONS, Annual Population Survey
Note: Annual periods are January to December



5.11 Ayrshire was the only region to record a decline in public and private sector employment suggesting economic and labour market challenges have been particularly acute in this region. Fife had a similar trend although public sector employment was flat from 2008 to 2016 compared to a decline in most Scottish regions. In the south of Scotland Dumfries and Galloway and the Borders both had large decreases in public sector employment and flat or limited private sector increases.

Full time employment

5.12 The total number of working age people (aged 16-64) in full time jobs in Scotland stood at 1,855,400 in 2016, a decrease of around 31,400 from 2008, or 2% (see Table 5.4). Much of this decline occurred during or immediately after the recession. Since 2013 full time jobs have grown by 5% with increases year on year.

Table 5.4
Change in full time employment, by region,
2008-2016, ranked by level in 2016

Source: ONS, Annual Population Survey
Note: Annual periods are January to December

Region	Full time employment 2008	Full time employment 2016	Percentage change 2008-2016
Lanarkshire	269,700	283,500	5%
Glasgow	269,100	274,400	2%
Edinburgh and Lothian	247,700	249,000	1%
Aberdeen City and Shire	179,900	180,300	<1%
Highlands and Islands	173,900	163,400	-6%
West Region	154,200	147,800	-4%
Tayside	138,500	135,700	-2%
Fife	128,700	125,900	-2%
Ayrshire	126,200	112,000	-11%
Forth Valley	108,900	101,500	-7%
West Lothian	67,900	65,400	-4%
Dumfries and Galloway	49,500	47,000	-5%
Borders	40,900	36,600	-11%
Scotland	1,886,800	1,855,400	-2%

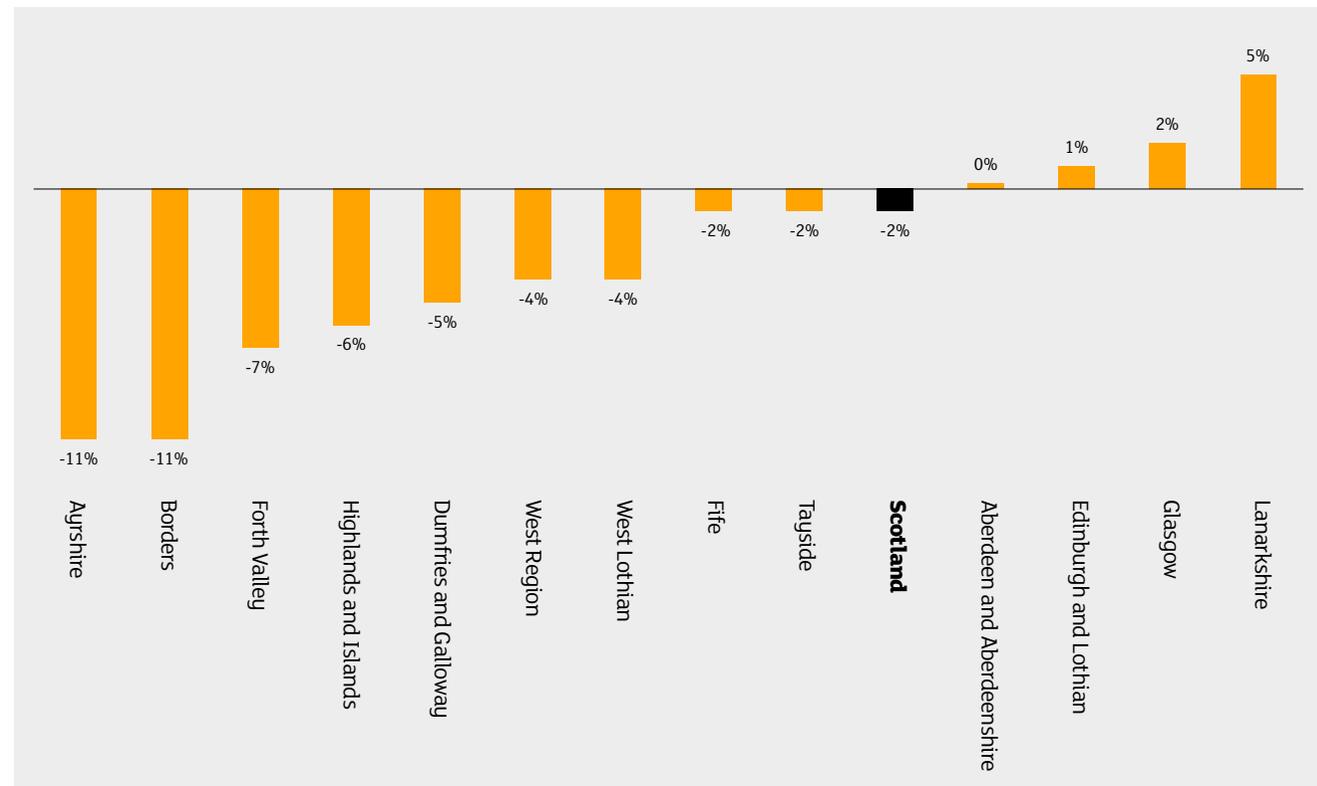
5.13 Regional differences in full time jobs change between 2008 and 2016 are shown in Figure 5.6.

5.14 The key messages are:

- full time employment growth was strongest in Lanarkshire (5%) and Glasgow (2%)
- there was also above average full time employment growth in Edinburgh and Lothian (1%) and full time jobs were static in Aberdeen City and Shire
- full time employment had not recovered to 2008 levels in more than two thirds of the regions with the greatest declines in Ayrshire (-11%), the Borders (-11%), Forth Valley (-7%), and Highlands and Islands (-6%).

Figure 5.6
Change in full time employment, by region, 2008-2016

Source: ONS, Annual Population Survey
 Note: Annual periods are January to December



Part time employment

5.15 Total part time employment of working age people in 2016 in Scotland stood at 627,900 in 2016, an increase of 33,200 jobs since 2008, or a growth rate of 6% (see Table 5.5). The growth in part time jobs resulted from the recession and since 2012 they have been in decline, falling by 3% (2012-2016).

Table 5.5
Change in part time employment, by region, 2008-2016, ranked by level in 2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December

Region	Part time employment 2008	Part time employment 2016	Percentage change 2008-2016
Glasgow	74,100	96,400	30%
Edinburgh and Lothian	76,000	81,600	7%
Lanarkshire	80,200	79,000	-1%
Highlands and Islands	62,000	64,100	3%
Aberdeen City and Shire	61,700	62,000	<1%
West Region	48,400	54,200	12%
Tayside	47,900	51,000	6%
Fife	42,200	39,700	-6%
Ayrshire	41,300	38,600	-7%
Forth Valley	31,300	36,600	17%
West Lothian	19,200	20,600	7%
Dumfries and Galloway	19,400	18,500	-5%
Borders	13,700	13,100	-4%
Scotland	594,700	627,900	6%

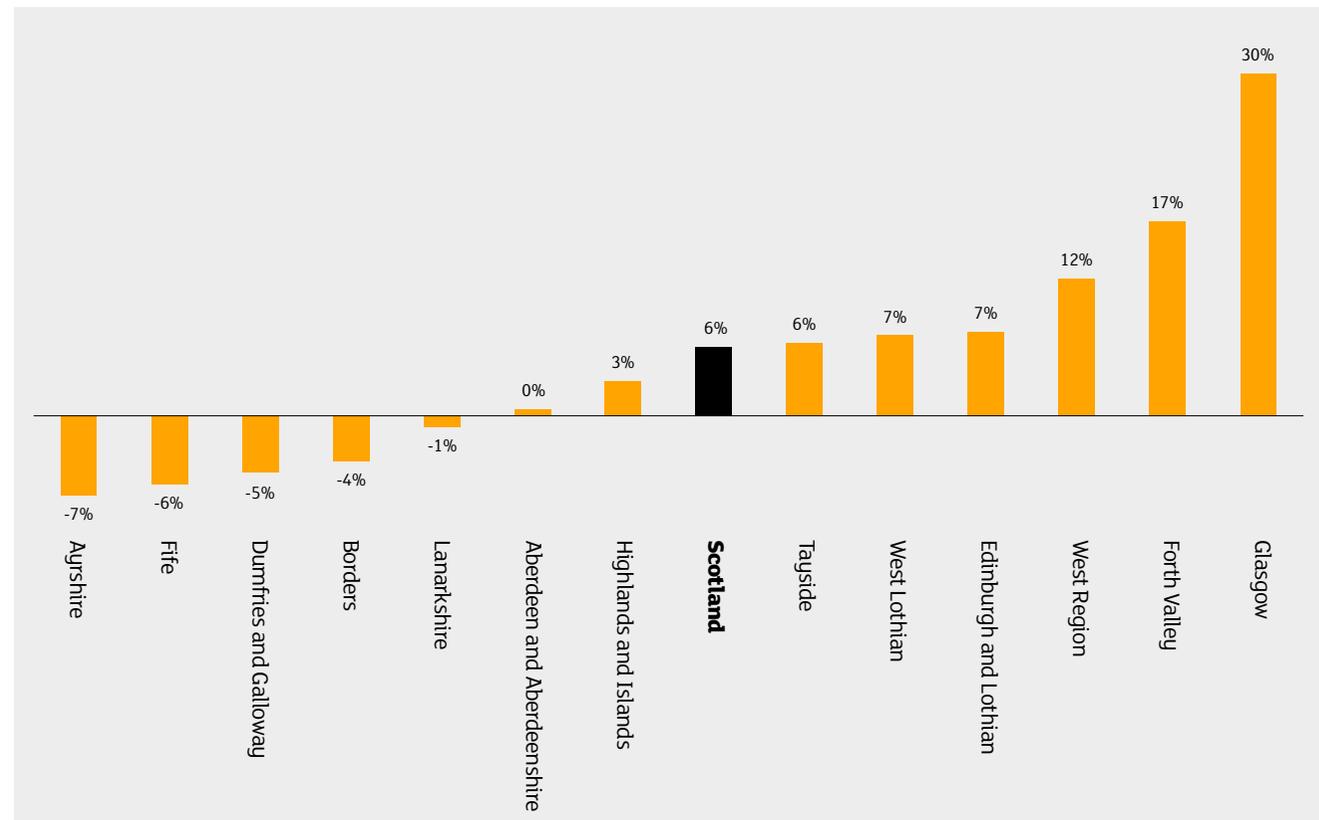
5.16 The growth rate of part time employment (6%) was in contrast to the 2% decline that occurred in full time employment. If we look at the changes in levels of full time and part time jobs then in absolute terms, approximately, for every full time job lost, two part time jobs were created in Scotland between 2008 and 2016.

5.17 Figure 5.7 shows the regional variations in part time employment change:

- there was strong part time employment growth in Glasgow (30%), most of this growth occurred during and immediately after the recession
- part time employment growth was also above average in Forth Valley (17%) and West Region (12%) and West Lothian (7%), and Edinburgh and Lothian (7%)
- Tayside had 6% growth, which was in line with the national average and the Highlands and Islands had growth (3%) but it was below the national average
- Ayrshire (-7%), Fife (-6%), Dumfries and Galloway (-5%), Borders (-4%) and Lanarkshire (-1%) were the five regions that had declines in part time employment between 2008 and 2016.

Figure 5.7
Percentage change in part time employment,
by region, 2008-2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December



Productivity

5.18 In Chapter 2, productivity was shown as GVA per hour worked. This is considered to be the best measure of GVA as it appropriately accounts for full and part time employment patterns. This measure is however unavailable based on Scotland's regions. To show productivity for the regions an alternative measure, GVA per job, has been used.

5.19 Scottish productivity as measured by GVA per job stood at £43,100 in 2014. This was up 7% from 2009 when it was £40,300.

5.20 Productivity was highest in Scotland's three largest city regions, Aberdeen City and Shire (£50,400), Edinburgh and Lothians (£47,400) and Glasgow Region (£43,300). These were the only three regions where productivity was above the Scottish average (see Table 5.6).

Table 5.6
Change in productivity (GVA per job), by region,
2009-2014, ranked by levels in 2014

Source: RSA data matrix, Oxford Economics, 2014

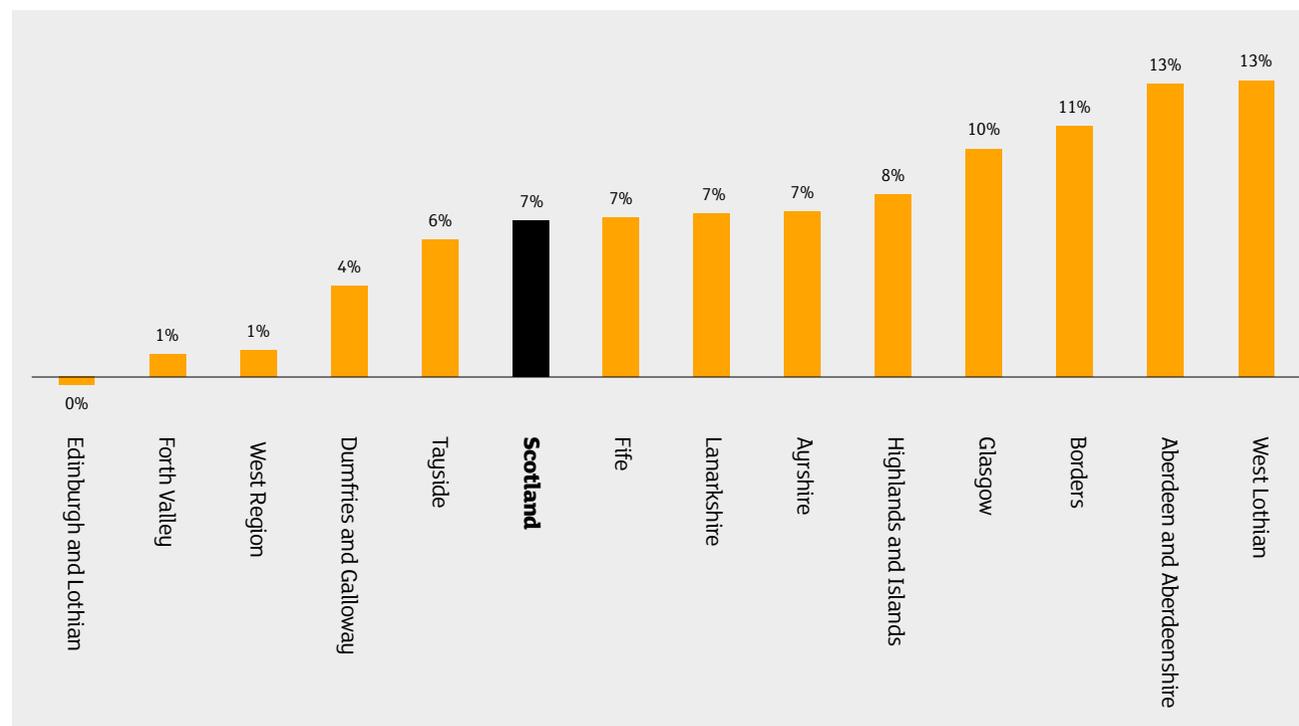
Region	GVA per job 2009	GVA per job 2014	Absolute change 2009-2014
Aberdeen City and Shire	£44,600	£50,400	£5,800
Edinburgh and Lothians	£47,600	£47,400	-£200
Glasgow	£39,500	£43,300	£3,800
Fife	£39,000	£41,700	£2,700
West Lothian	£36,600	£41,400	£4,800
West	£40,800	£41,200	£400
Lanarkshire	£38,000	£40,700	£2,700
Ayrshire	£37,700	£40,600	£2,900
Forth Valley	£40,100	£40,300	£200
Tayside	£37,600	£39,800	£2,200
Highlands and Islands	£36,400	£39,200	£2,800
Borders	£33,400	£36,900	£3,500
Dumfries and Galloway	£35,100	£36,400	£1,300
Scotland	£40,300	£43,100	£2,800

5.21 In terms of regional variations in productivity growth:

- Aberdeen City and Shire and West Lothian (both 13%) had the strongest growth rate of GVA per job – almost twice the Scottish average. This productivity growth took place at the same time as growth in overall employment, of around 1% in Aberdeen City and Shire and 3% in West Lothian (2008/9-2015/16)
- GVA per job also increased strongly in rural regions; Borders (11%) and the Highlands and Islands (8%). In each of these areas though total employment fell over a similar period, so some of this productivity increase is likely to be due to falling employment levels while maintaining output
- the growth in GVA per job was weakest in Edinburgh and the Lothians (no change), West Region (1%), Forth Valley (1%), Dumfries and Galloway (4%) and Tayside (6%) (see Figure 5.8).

Figure 5.8
Percentage change in productivity (GVA per job),
by region, 2009-2014

Source: RSA data matrix, Oxford Economics



Resident earnings⁶

5.22 Median resident earnings for full time workers⁷ in Scotland stood at £537 per week in 2016, an increase of 14% from 2009. The areas with the highest median resident earnings were distributed across Scotland. East Renfrewshire in the west was highest (£688) followed by the Shetland Islands in the north (£650), East Dunbartonshire in the west (£631) and Stirling in the central belt (£573). In East Renfrewshire and East Dunbartonshire the earnings are explained by the workplace of residents, many commute to higher paid jobs in Glasgow City. Earnings were lowest in the rural areas of Dumfries and Galloway (£462), Argyll and Bute (£472) and Eilean Siar (£476) (see Table 5.7).

Table 5.7

Change in median resident earnings, by local authority, 2009-2016, ranked by levels in 2016

Source: Annual Survey of Hours and Earnings, 2016

Region	Median weekly resident earnings 2009	Median weekly resident earnings 2016	Percentage change 2009-2016
East Renfrewshire	£597	£688	15%
Shetland Islands	£508	£650	28%
East Dunbartonshire	£552	£631	14%
Stirling	£499	£573	15%
Aberdeenshire	£533	£567	6%
East Lothian	£482	£565	17%
Edinburgh, City of	£514	£560	9%
Orkney Islands	£434	£558	28%
Aberdeen City	£500	£554	11%
Renfrewshire	£499	£551	11%
Falkirk	£463	£550	19%
East Ayrshire	£481	£550	14%
South Lanarkshire	£497	£543	9%
South Ayrshire	£554	£539	-3%
Inverclyde	£449	£535	19%
Fife	£465	£534	15%
Highland	£453	£529	17%

⁶ Data is not available for RSA regions.

⁷ Full time workers are those who work more than 30 paid hours per week or those in teaching professions working 25 paid hours or more per week. It is standard practice to report on the earnings of full time workers rather than all workers. This is consistent with ONS reporting.

Table 5.7 cont'd
Change in median resident earnings, by local authority, 2009-2016, ranked by levels in 2016

Source: Annual Survey of Hours and Earnings, 2016

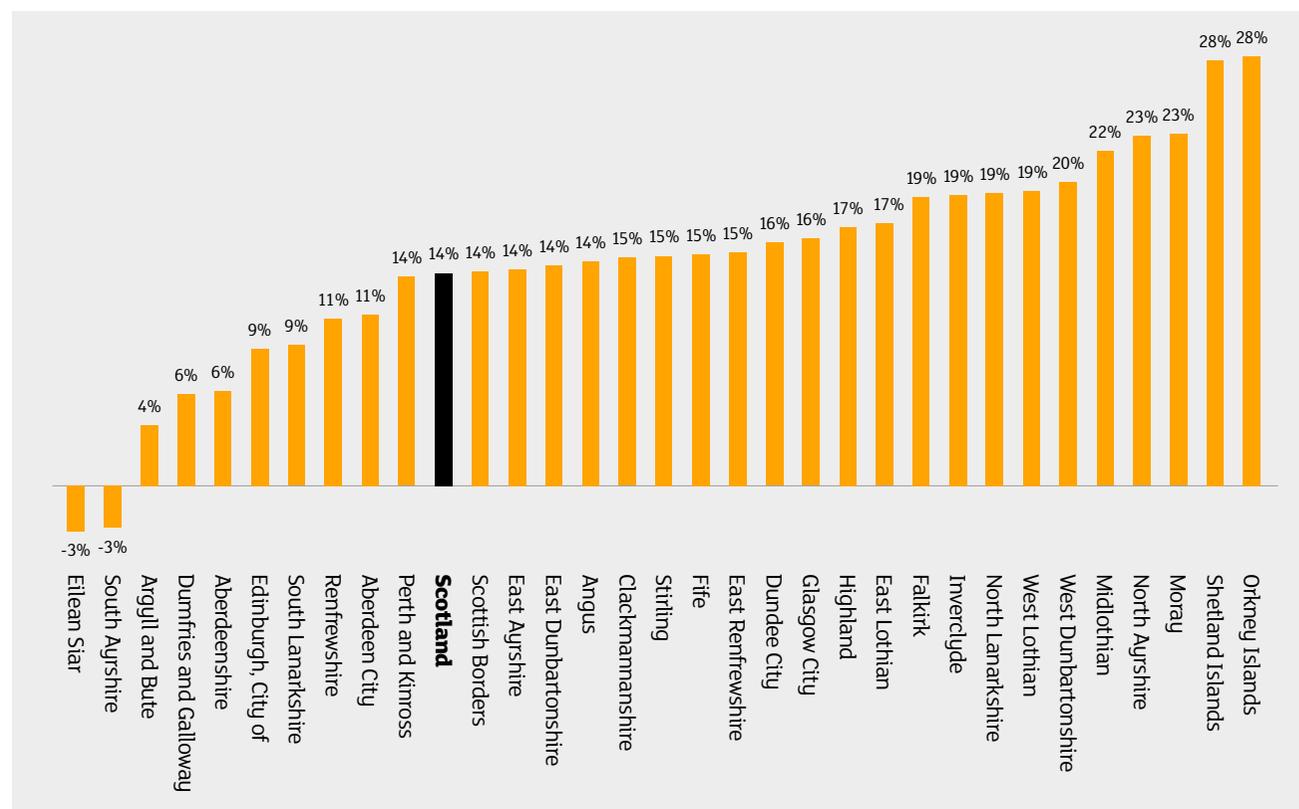
Region	Median weekly resident earnings 2009	Median weekly resident earnings 2016	Percentage change 2009-2016
Perth and Kinross	£464	£528	14%
Angus	£461	£528	14%
Glasgow City	£452	£524	16%
North Ayrshire	£426	£523	23%
West Dunbartonshire	£432	£519	20%
Midlothian	£424	£517	22%
North Lanarkshire	£429	£512	19%
West Lothian	£425	£507	19%
Moray	£406	£499	23%
Scottish Borders	£437	£499	14%
Clackmannanshire	£430	£492	15%
Dundee City	£419	£484	16%
Eilean Siar	£493	£476	-3%
Argyll and Bute	£453	£472	4%
Dumfries and Galloway	£435	£462	6%
Scotland	£471	£537	14%

5.23 As Figure 5.9 shows, there were regional variations in the pattern of resident wages growth:

- resident median wages growth (2009-2016) was highest in the Northern Isles. The Orkney Islands and Shetland Islands both had an increase of 28%. Both local authorities have experienced a decline in employment and an increase in productivity over a similar period, wages growth is likely to have been driven by this and proportionally high levels of employment in construction which is a high value added sector
- Highland (Inverness), Glasgow City, Dundee City and Stirling all had similar levels of growth in resident median wages from 2009 to 2016. Growth ranged from 17% in the Highlands, 16% in both Glasgow City and Dundee City and 15% in Stirling. Aberdeen City (11%) and the City of Edinburgh (9%) both had earnings growth below that of the national average (14%). Resident median wages growth in Perth and Kinross (Perth) was the same as the national average
- South Ayrshire and Eilean Siar were the only local authority areas to have a reduction in full time resident median wages over the period. Both had a 3% decline.

Figure 5.9
Change in median workplace earnings, by local authority, by region, 2009-2016

Source: Annual Survey of Hours and Earnings, 2016



Unemployment

5.24 The ILO unemployment rate for Scotland stood at 5% in 2016, a slight increase from 4.9% in 2008 (although ILO unemployment actually peaked in 2011). Ayrshire had the highest rate of ILO unemployment in 2016 at 7.9% followed by Aberdeen City and Shire (6.5%), Borders (5.9%) and Glasgow (5.2%), all with a rate above the national average (see Table 5.8). West Lothian had the lowest ILO unemployment rate of all the regions in 2016 (3.8%). Lanarkshire had a similarly low unemployment rate (3.9%).

Table 5.8
Change in unemployment rate, by region, 2008-2016, ranked by levels in 2016

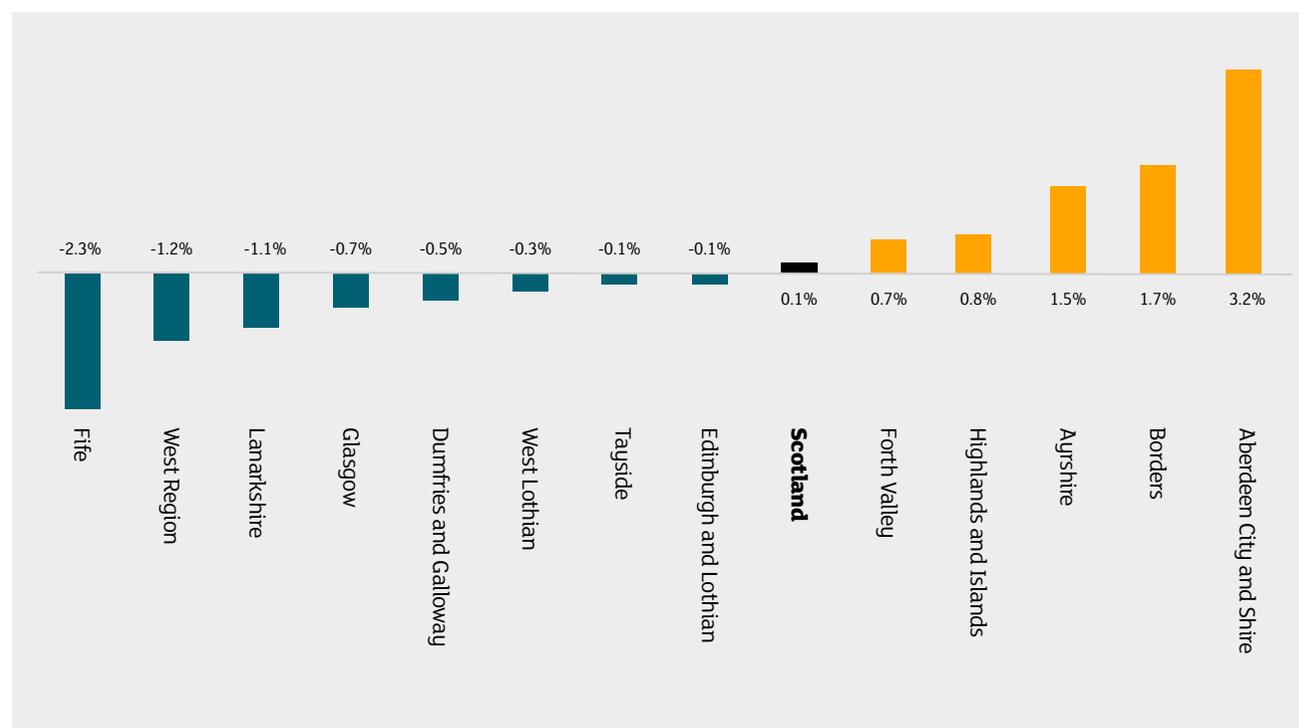
Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December

Region	Unemployment rate (%) 2008	Unemployment rate (%) 2016	Ppt change 2008-2016
Ayrshire	6.4	7.9	1.5
Aberdeen City and Shire	3.3	6.5	3.2
Borders	4.2	5.9	1.7
Glasgow	5.9	5.2	-0.7
Forth Valley	4.3	5	0.7
Tayside	5	4.9	-0.1
Dumfries and Galloway	5.1	4.6	-0.5
West Region	5.8	4.6	-1.2
Fife	6.7	4.4	-2.3
Edinburgh and Lothian	4.3	4.2	-0.1
Highlands and Islands	3.2	4	0.8
Lanarkshire	5	3.9	-1.1
West Lothian	4.1	3.8	-0.3
Scotland	4.9	5	0.1

5.25 There were five regions that had an increase in the unemployment rate. The largest increase was in Aberdeen City and Shire, a rise of 3.2 percentage points (ppt), a result of the downturn in the oil and gas sector. Fife had the greatest decrease in the unemployment rate, declining by 2.3 ppt (see Figure 5.10).

Figure 5.10
Change in unemployment rate (percentage points), by region, 2008-2016

Source: ONS, Annual Population Survey, 2017
Note: Annual periods are January to December



A summary of the regions – strong, moderate and weak performance/recovery

5.26 Finally, Table 5.9 provides a summary of key performance at regional level.

Table 5.9
Summary of regional performance

Source: SDS RSA Data Matrix, 2016

Region	Economic performance
Strong economic performance/recovery	
Aberdeen City and Shire Employment (2016): 243,100 Change in employment (2008-2016): 1%	<ul style="list-style-type: none"> • Employment growth similar to the national average (1%) • Private sector employment growth has offset public sector employment losses • No growth in part time or full time jobs • Highest productivity in Scotland (£50,400) and joint largest growth in productivity (2009-2014) at almost double the national average (13%), although this might not fully capture the oil and gas downturn • High resident earnings, although the wage growth rate (2009 -2016) is below the national average • ILO unemployment rate of 6.5%, the second highest in Scotland, which reflects the oil and gas downturn • The data available suggests that the Aberdeen City and Shire economy has performed well and remains prosperous. The data does not fully capture the effect of the recent downturn in the oil and gas market, if the data reflected this it is possible that the region would not feature in this strong performance category. The ILO unemployment data is the first indicator that provides an insight to the extent of the impact of the oil and gas downturn
Edinburgh and the Lothians Employment (2016): 330,600 Change in employment (2008-2016): 2%	<ul style="list-style-type: none"> • Strong employment growth, driven by strong private sector employment growth • Private sector employment growth (12,100) has more than offset public sector employment losses (-4,700) • Higher growth of part time employment (7%) than full time employment (1%), however both were above the national average • High productivity (£47,400), second only behind the Aberdeen region although productivity has shown no growth from 2009-2014 • High resident earnings and high earnings growth across the region • Low, and declining, ILO unemployment rate
Glasgow Employment (2016): 371,900 Change in employment (2008-2016): 8%	<ul style="list-style-type: none"> • Strong employment growth, driven by strong private sector employment growth (of almost 25,000 jobs) • Strong growth in both part time (30%) and full time (2%) employment • High productivity (£43,300), in line with Scotland as a whole and strong growth since 2009 of 10% • Highest resident earnings (£688 weekly) in Scotland within East Renfrewshire and third highest in East Dunbartonshire (£631), both are within the region • Falling ILO unemployment rate
Lanarkshire Employment (2016): 363,800 Change in employment (2008-2016): 4%	<ul style="list-style-type: none"> • Above average employment growth • Private sector employment growth is above the national average and public sector declines are below the national average • Growth in the full time workforce which has declined nationally, and declines in the part time workforce which has growth nationally • Productivity is below the national average and is growing at the same rate as Scotland as a whole • Wages across the region vary from £631 in East Dunbartonshire to well below the national average in North Lanarkshire (£512) • As a result of falling unemployment since 2008, the region in 2016 had an unemployment rate below the national average

Table 5.9
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Region	Economic performance
Moderate economic performance/recovery	
Fife Employment (2016): 166,700 Change in employment (2008-2016): -3%	<ul style="list-style-type: none"> • Overall decline in employment driven by losses in the private and public sector • Proportionally more losses amongst part time workers than full time workers • Productivity in Fife is £41,700; only Aberdeen City and Shire, Edinburgh and the Lothians and Glasgow have higher productivity • Resident weekly earnings are similar to the national average and wages growth has been slightly above the national average • Fall in the ILO unemployment rate, of 2.3 percentage points between 2008 and 2016
Forth Valley Employment (2016): 140,200 Change in employment (2008-2016): -1%	<ul style="list-style-type: none"> • Slight decline in employment • 5% growth in private sector employment, but a greater decline in public sector employment (-10%) than nationally (-4%) • Full time employment is yet to return to pre-recession levels and has recently declined, while there has been strong part time employment growth. Only Glasgow had greater growth in part time employment • Weak growth in productivity (1%), well below the national average (7%) • Within the region Stirling had the highest median weekly resident earnings at £573. Clackmannanshire had the lowest at £492, this was one of the lowest levels across all local authorities • ILO unemployment similar to the national average (5%), down 0.7 percentage points in 2016 from 2008
Tayside Employment (2016): 187,000 Change in employment (2008-2016): No change	<ul style="list-style-type: none"> • Employment has been static, compared to growth nationally • Growth in private sector employment has offset losses in the public sector • Full time employment is yet to return to pre-recession levels, while part time employment has grown in line with the national average (6%) • Below average productivity, and productivity growth lags behind Scotland (6% vs. 7%) • Dundee City has the fourth lowest resident earnings (£484) of all 32 local authorities, well below the national average. Perth and Kinross and Angus are also below the national average. Wages growth in all three local authorities is broadly similar to the national average • High ILO unemployment rate (4.9%) which has only marginally declined (-0.1 percentage points) since 2008
West Lothian Employment (2016): 86,300 Change in employment (2008-2016): -1%	<ul style="list-style-type: none"> • Slight decline in employment (-1%) • Above average growth in private sector employment has off-set declines in public sector employment which has declined at a faster rate than Scotland as a whole • Good growth in full time employment compared to decline nationally, some losses in part time workers compared to growth nationally • Ranks fifth of the thirteen regions in terms of productivity at £41,400. The region has had productivity growth of 13% which is the joint highest with Aberdeen City and Shire • Despite one of the highest rates of wage growth in Scotland between 2008/09 and 2015/16 (of 19%), resident earnings remain low • The rate of unemployment had fallen by 0.3 percentage points (2008-2016), and the region has the lowest rate of all thirteen regions (3.8)
West Region Employment (2016): 202,000 Change in employment (2008-2016): No change	<ul style="list-style-type: none"> • Above average employment growth • Growth in private sector employment (1%) and no change in public sector employment • 4% decline in full time employment, greater than the trend nationally. Part time employment has grown by 12% which is the third greatest growth of all 13 regions and greater than the national average • One of the lowest productivity growth rates of all the regions, well below average growth across Scotland • Wages in the region range from the highest nationally (£688 in East Renfrewshire) to below the national average of £519 in West Dunbartonshire • ILO unemployment rate of 4.6% is below the national average and is declining

Table 5.9
Con'td...

Region	Economic performance
Weak economic performance/recovery	
Ayrshire Employment (2016): 152,500 Change in employment (2008-2016): -10%	<ul style="list-style-type: none"> • Employment is yet to return to pre-recession levels • Largest decline in private sector employment (-9%) compared to national growth while public sector employment has also declined (-4%) • Full time employment is also yet to return to pre-recession levels and has had the joint greatest decline of all regions (-11%) as well as the greatest decline in part time employment (-7%) • Productivity was below the national average and growing at the same rate as Scotland as a whole • Resident wages varied by local authority, East Ayrshire had the highest wages (£550), growing in line with the national average. Wages in North and South Ayrshire were lower. North Ayrshire had strong growth in wages (23%), whereas South Ayrshire was one of only two local authorities to have a decline (-3%) • Highest ILO unemployment rate (7.9) of all the regions
Borders Employment (2016): 49,600 Change in employment (2008-2016): -9%	<ul style="list-style-type: none"> • Employment is yet to return to pre-recession levels • Growth in private sector employment was 1%, below the national average (4%). Public sector employment has declined, by much more than the national average (-17% vs. -4%) • The region has had the joint greatest decline in full time employment (-11%) and has also seen a decline in part time employment (-4%) • Above average growth in productivity • Below the national average for resident earnings, and wages growth has been the same as the national average • One of the highest ILO unemployment rates in Scotland (5.9%)
Dumfries and Galloway Employment (2016): 66,700 Change in employment (2008-2016): -4%	<ul style="list-style-type: none"> • Employment is yet to return to pre-recession levels • Private sector employment has grown, albeit at a slower rate than nationally and there have been large losses in the public sector (-13%) • Full time employment is below pre-recession levels as is part time employment • Below average productivity and although growing, the rate of growth is slower than the national average • Lowest resident earnings in Scotland (£462 weekly), and low earnings growth, of 6% for 2008/09-2015/16 • Below average unemployment (4.6 vs. 5.0), which has declined marginally since 2008 by 0.5 percentage points
Highlands and Islands Employment (2016): 227,900 Change in employment (2008-2016): -4%	<ul style="list-style-type: none"> • Employment is yet to return to pre-recession levels • Private sector employment has grown slightly faster than the overall growth in Scotland (5% vs. 4%). However there has been a large decline in public sector employment (-15%) – more than triple the rate of national decline (-4%) • Full time employment is yet to return to pre-recession levels, and part time employment growth has been below the national average (3% vs. 6% nationally) • The region has below average productivity levels, but productivity growth is outpacing Scotland (8% vs. 7%) • Large variances in wages. The Shetland Islands had the second highest wages of all 32 local authorities (£650), however Argyll and Bute had the second lowest (£472). The Shetland and Orkney Islands had the joint highest growth in wages (28%), the rate of growth was double that of Scotland as a whole • A low ILO unemployment rate of 4%, below the national rate (5.0)

Supply of skills in Scotland

6

6.1 This section of the report focuses on supply side issues in the labour market, focusing on:

- supply of people – demography
- participation of people in the labour market
- qualification and attainment levels of people in the labour market.

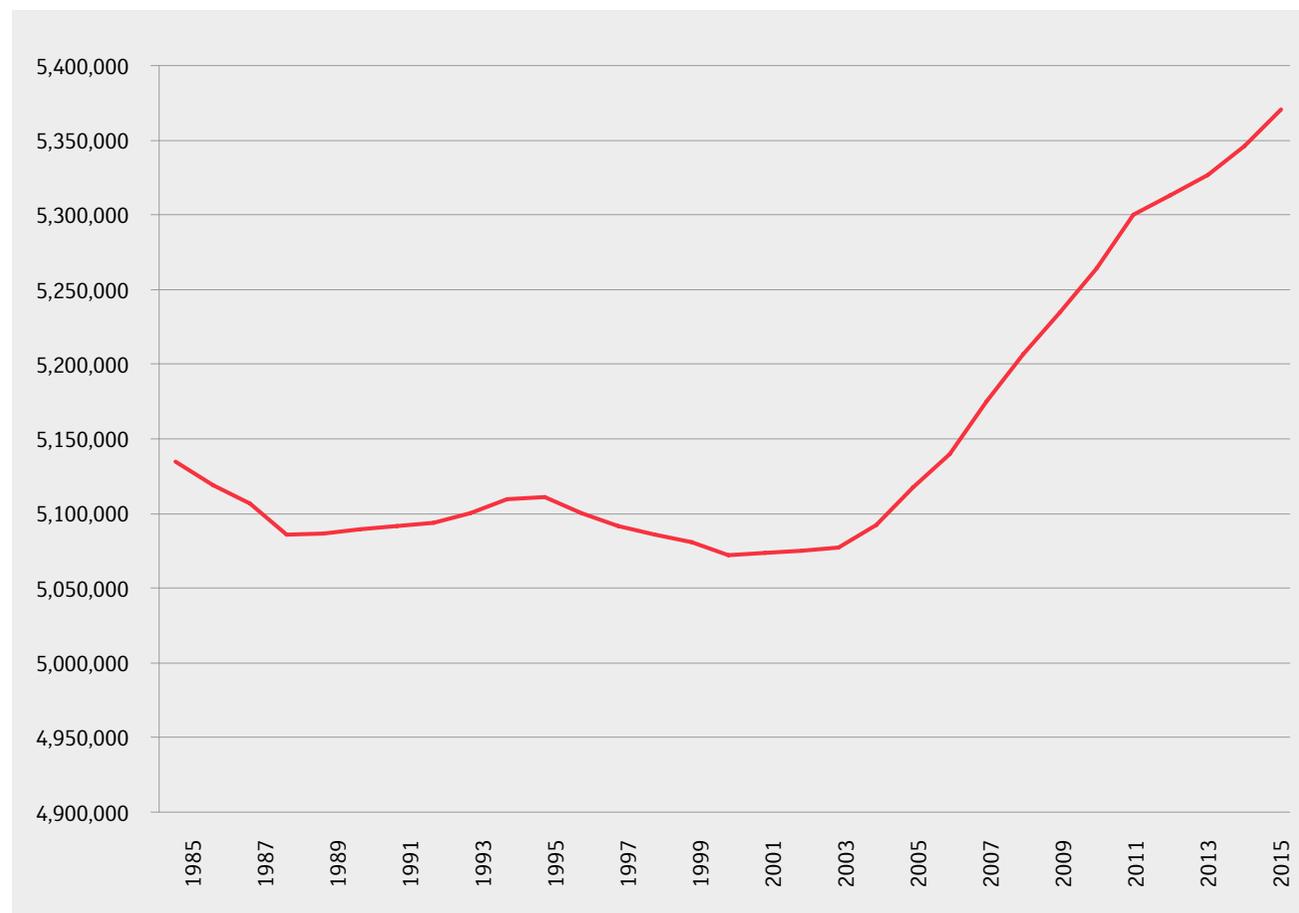
Demography

Population growth

6.2 In 2016, Scotland's population was estimated to be 5,404,700, an increase of 31,700 on the previous year (see Figure 6.1). Since 2006, Scotland's population has grown by 5% (c. 270,000 people). By comparison, the UK's population grew by around 7% over the same period.

Figure 6.1
Mid year population estimates, 1985-2016

Source: National Registers of Scotland, 2017



6.3 The population growth across Scotland has been driven mostly by net in-migration, and to a much lesser extent by natural growth (i.e. more births than deaths). This puts Scotland's population at a record high. The sharp increase from 2004 follows a period when Scotland's population had remained relatively stable for more than 50 years.⁸

6.4 Net in-migration has largely come from two sources:

- the rest of the UK: which in 2015/2016 accounted for a net gain of 8,800 people
- overseas: which in 2015/2016 accounted for a net gain of 22,900 people.

6.5 Looking at the age composition of in-migrants to and out-migrants from Scotland, the largest net migration gain was for ages 16-24, with net losses for those aged 75+. The 16-34 age group accounted for 65% of net migration in 2015, the population gains from other age groups were smaller particularly from older age groups. Those aged 45 or over accounted for 10% of net migration. The peak age gain (age at which there is greatest in-migration) was 19, whilst peak losses (greatest out-migration) were at ages 23 and 24; these figures may be partly explained by student movements, and young people coming to study at Scotland's universities.

⁸ National Records of Scotland (NRS).

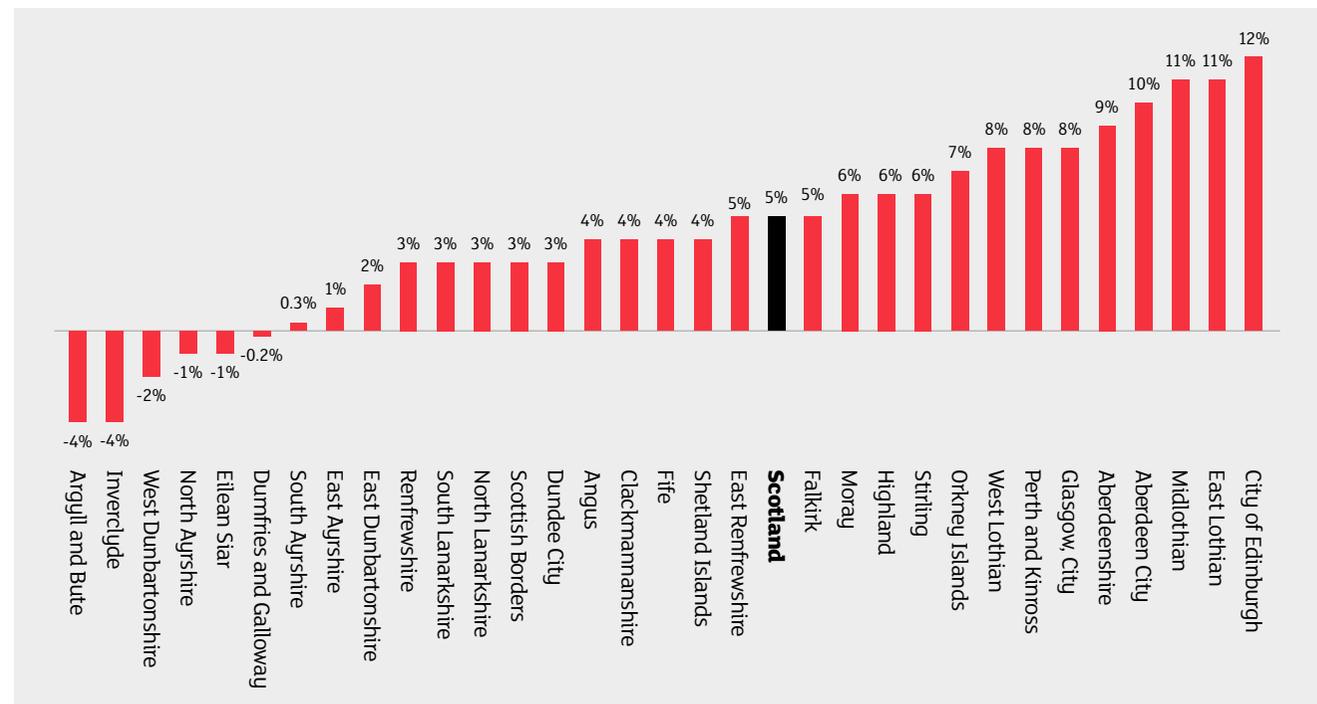
Population change by local authority area

6.6 Whilst the overall population of Scotland has increased relatively steadily since 2006 (5% over the decade), growth has not been experienced in all parts of the country. Figure 6.2 shows the change in population across all 32 local authority areas in Scotland. The headlines are:

- population growth has been strongest in and around the cities of Edinburgh, Aberdeen, and Glasgow; in parts of the Highlands and Islands (Highland, Moray and Orkney); and in central Scotland (Falkirk, Stirling and Perth and Kinross)
- the local authorities with the lowest levels of population growth are typically in the west and south west of Scotland and/or have struggling local economies. Inverclyde, Argyll and Bute, West Dunbartonshire, and North Ayrshire fall into both these groups and have indeed experienced population decline over the last ten years.

Figure 6.2
Population change (percentage) 2006-2016, by local authority

Source: National Registers of Scotland, 2017

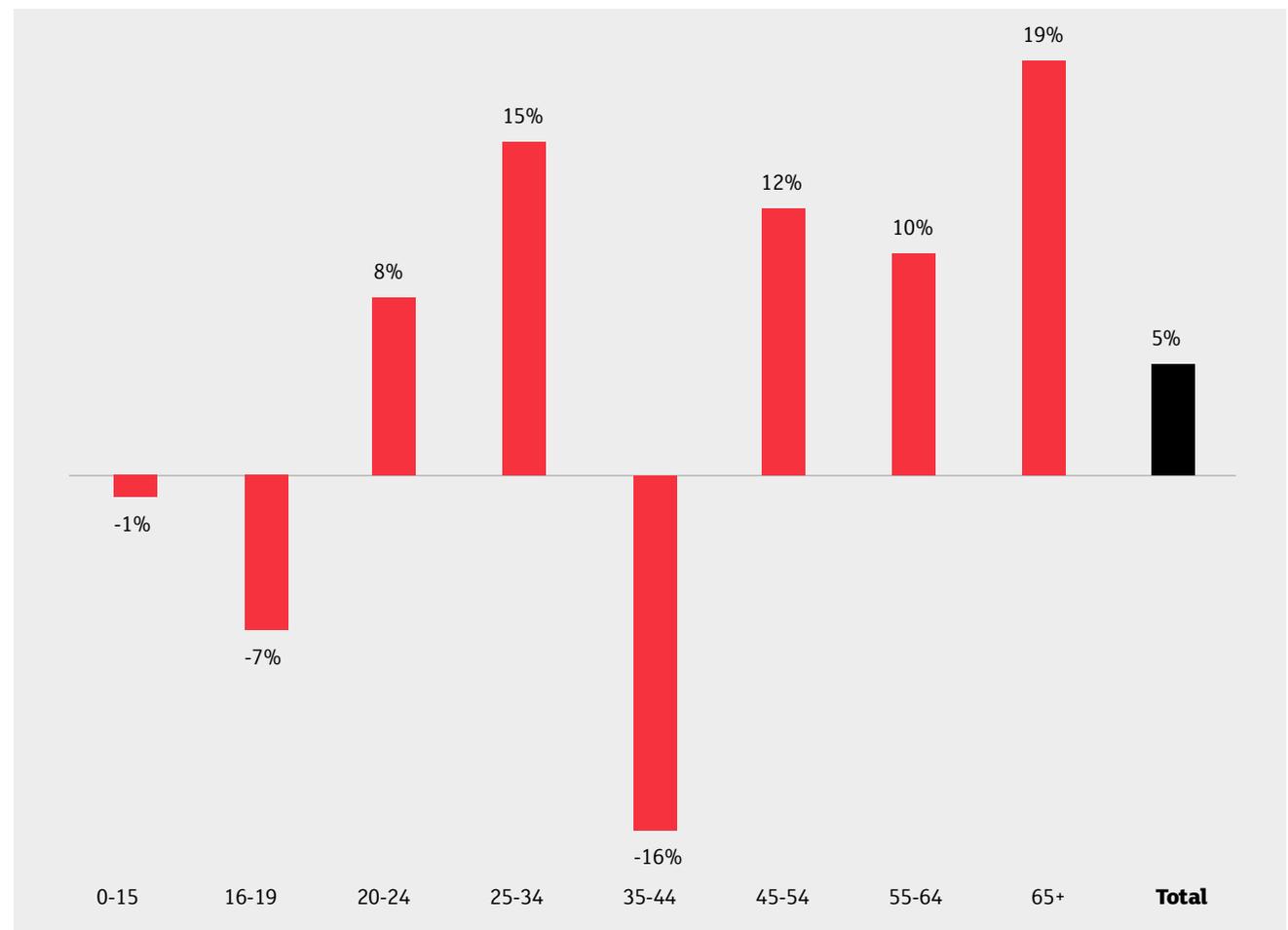


Population change by age

6.7 Although there has been an increase in Scotland's population overall, this is not consistent across age ranges, as Figure 6.3 illustrates. There has been a large decrease in the proportion of people aged 35-44, a fall of 16% since 2006. There has also been a small decrease in the proportion of children aged 15 and under (-1%). Over the same period, there have been significant increases in older age groups – those of older working age increased by 12% in those aged 45-54 and 10% among 55-64 year olds, despite the low levels of net-migration as described above. However, for those aged 65+, the increase has been higher still at 19%. This was the largest percentage change of any age group.

Figure 6.3
Population change by age, 2006-2016

Source: National Registers of Scotland, 2017



Labour market participation

Employment rates

6.8 As Table 6.1 illustrates, Scotland's employment rate has not recovered to the pre-recession rate and is at 72.9% (2016), after falling to approximately 70% in 2011. It is now one percentage point behind the UK as a whole (see Table 6.1). This masks variation within Scotland. For example the employment rate was highest in the Highlands and Islands (77.9%), West Lothian (75.5%) and Lanarkshire (75.3%). It is lowest in Ayrshire (67.2%) and the Glasgow region (69.4%).

Table 6.1
Employment rates, 2008-2016
(% of the working age population)

ONS, Annual Population Survey, 2017
Note. Annual periods are January to September

	Scotland	UK
2008	73.6	72.1
2009	72.0	70.6
2010	71.0	70.1
2011	70.5	69.8
2012	70.5	70.5
2013	70.8	71.2
2014	72.6	72.2
2015	73.1	73.5
2016	72.9	73.9

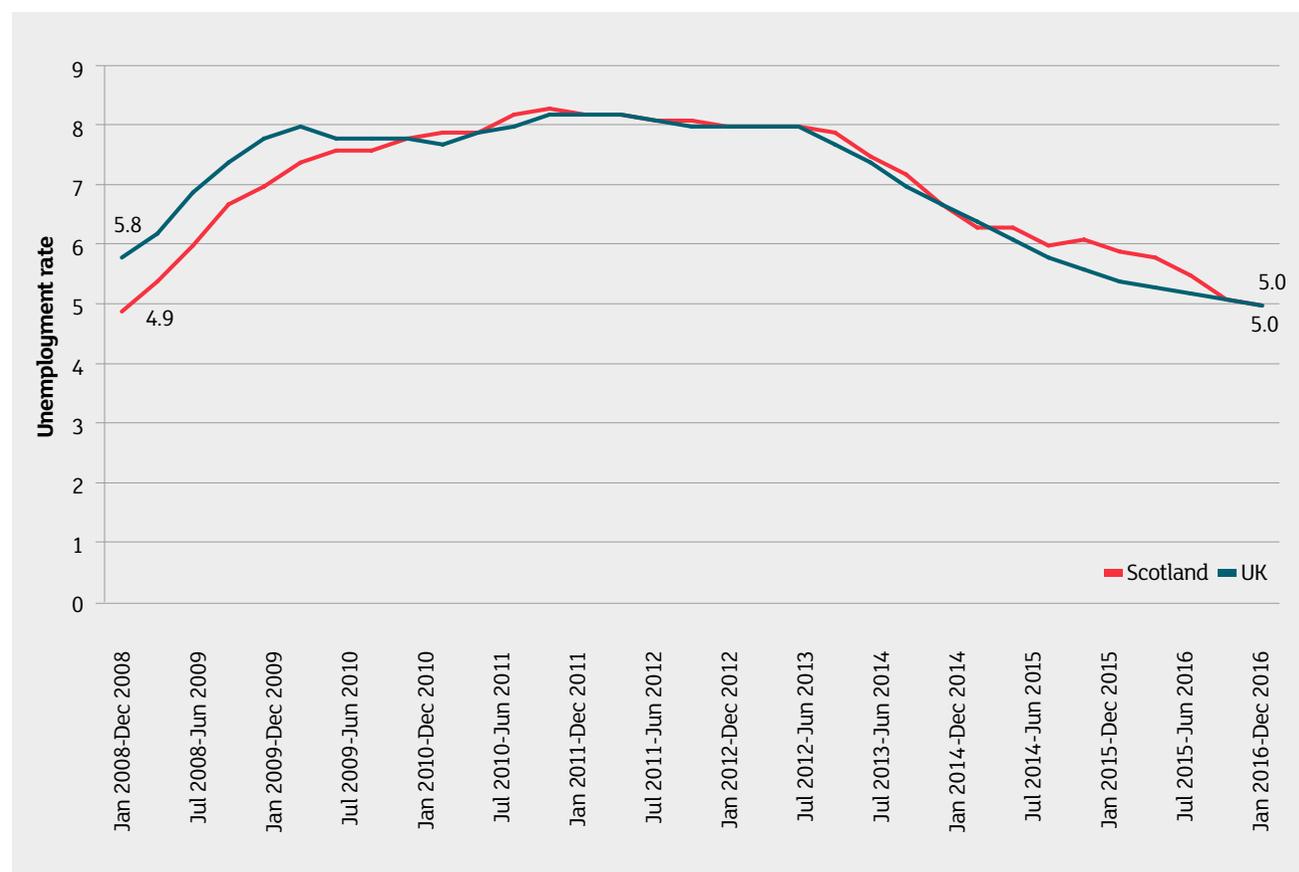
Unemployment

6.9 As would be expected, there was a rise in the unemployment rate over the period of the recession. This rise was steeper in Scotland than in the UK, reaching a peak of 8.3% but, like the UK, has since fallen, standing at 5% for the full year to December 2016, the same rate as the UK as a whole (see Figure 6.4). Further information on unemployment by region is available in Chapter 5.

6.10 Recent data prior to the time of reporting indicates that unemployment is lower in Scotland than the rest of the UK, and at a record low level (3.8% March-May 2017, ONS). This is despite lower than UK average employment rates. The low unemployment and low employment rate phenomenon is due to higher levels of economic inactivity in Scotland i.e. those out of work but not seeking employment (Fraser of Allander, 2017).

Figure 6.4
Unemployment, 2008-2016, UK and Scotland

Source: ONS, Annual Population Survey, 2017



Economic inactivity

6.11 Economic inactivity covers individuals who are neither in employment nor unemployed. There are many reasons why people may be inactive. For example, they may have a long-term illness or disability, be studying for a qualification, staying at home to look after their family, or have retired. The economically inactive population is not part of the supply of labour. However, the labour market is dynamic, with people continuously moving between different categories. Therefore it is important to consider inactivity figures as they include those who may make up the labour supply in the future and those who were part of the labour supply in the past.

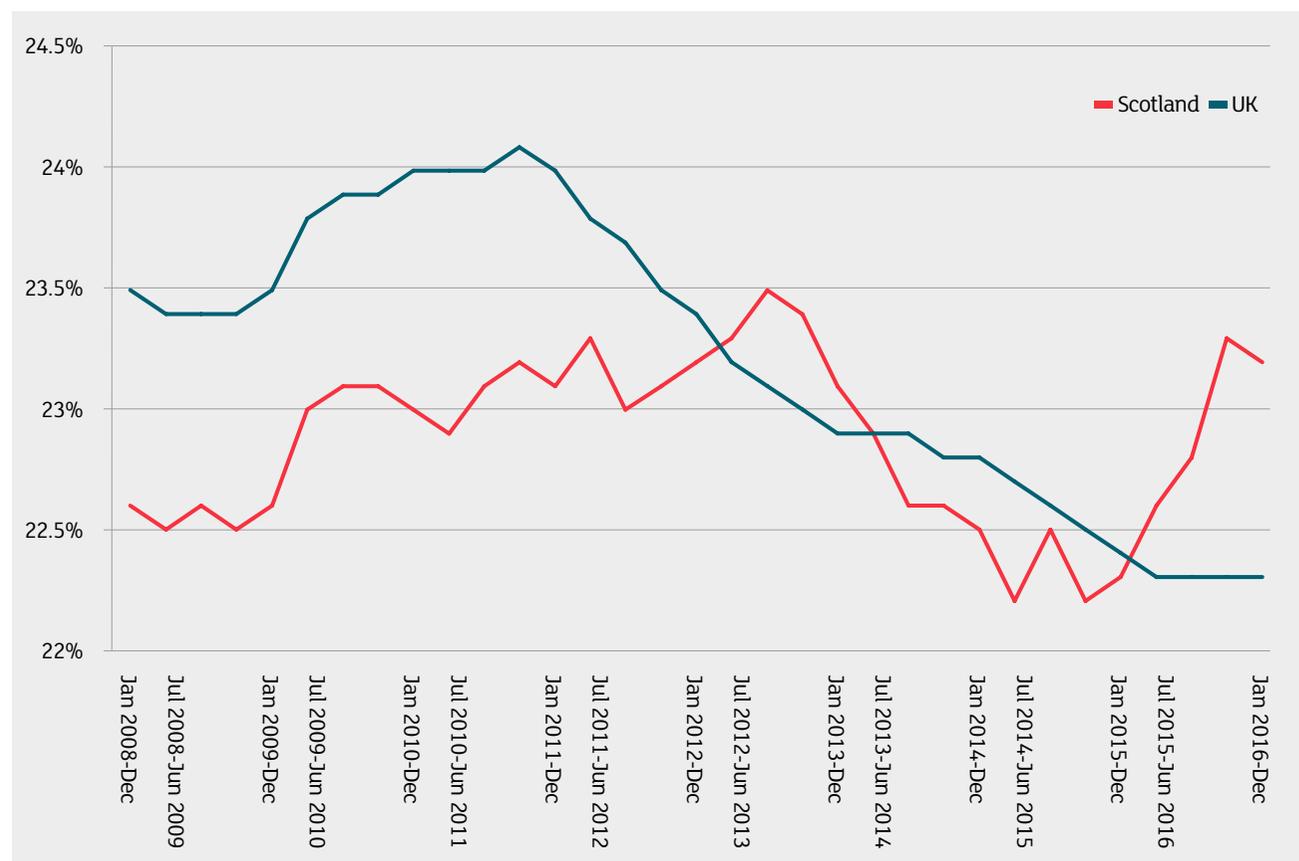
6.12 The economic inactivity rate in Scotland has historically been below that of the UK. During the twelve months from April 2015 to March 2016 the economic inactivity rate in Scotland surpassed that of the UK as a whole. Since then it has continued to rise sharply, and for the year January 2016 to December 2016 the inactivity rate was one percentage point greater than the UK rate. This reflects in part the recent decline in the employment rate in Scotland (see Figure 6.5).

Figure 6.5

Inactivity rates, 2008-2016, UK and Scotland

Source: ONS, Annual Population Survey, 2017

Note. The headline inactivity rate is the number of economically inactive people aged 16 to 64 divided by the population aged 16 to 64



6.13 In 2016, 16% of all those aged 16-64 in Scotland were work-limited through disability, affecting some 555,300 people, and this was one percentage point above the UK rate.⁹ By region, this is lowest in Aberdeen City and Shire (12%) and Borders (13%), and highest in Ayrshire (21%), Forth Valley, and Lanarkshire (both 18%).

Qualifications

6.14 The evidence analysed here includes the qualification levels of the working age population, the destinations of school leavers from Scottish secondary schools and the 16-19 Participation Measure. As Table 6.2 illustrates, 9% of the working age population (those aged 16-64) in Scotland have no qualifications and 43% have higher level qualifications.

Table 6.2
Qualifications of the working age population (aged 16-64) in Scotland, 2015

Source: Labour Force Survey, 2016

Qualification (SCQF level)	Type of qualification	Percentage of 16-64 population with qualification
SCQF 7-12	HNC to Doctoral Degree	43%
SCQF 6	Higher level	19%
SCQF 5	National 5	14%
SCQF 1-4	National 1 to National 4	9%
Other qualifications	Job specific qualifications	6%
No qualifications		9%

⁹ Source: NOMIS Annual Population Survey (2016) (% of those aged 16-64 who are work-limited core disabled).

6.15 There are, however, regional variations in qualifications. As examples:

- the proportion of those with no qualifications is highest in Ayrshire (13%), Dumfries and Galloway (11%) and Glasgow (11%) and lowest in Aberdeen and Aberdeenshire (5%) and Edinburgh and Lothians (6%)
- the proportion of those with high level qualifications is highest in Edinburgh and Lothians (53%), Glasgow (48%) and Aberdeen and Aberdeenshire (47%). The proportion is lowest in Dumfries and Galloway (32%).

6.16 In terms of the qualification levels of 16 to 24 year-olds in Scotland, 6% have no qualifications. This is highest in Dumfries and Galloway and the Highlands and Islands (both 9%) and lowest in Aberdeen and Aberdeenshire (2%). In contrast, more than one quarter (26%) have high level qualifications (SCQF 7-12). This is highest in Aberdeen and Aberdeenshire (32%) and Glasgow (29%) (see Table 6.3).

Table 6.3
Qualifications of young people (aged 16-24) in Scotland, 2015

Source: Labour Force Survey, 2016

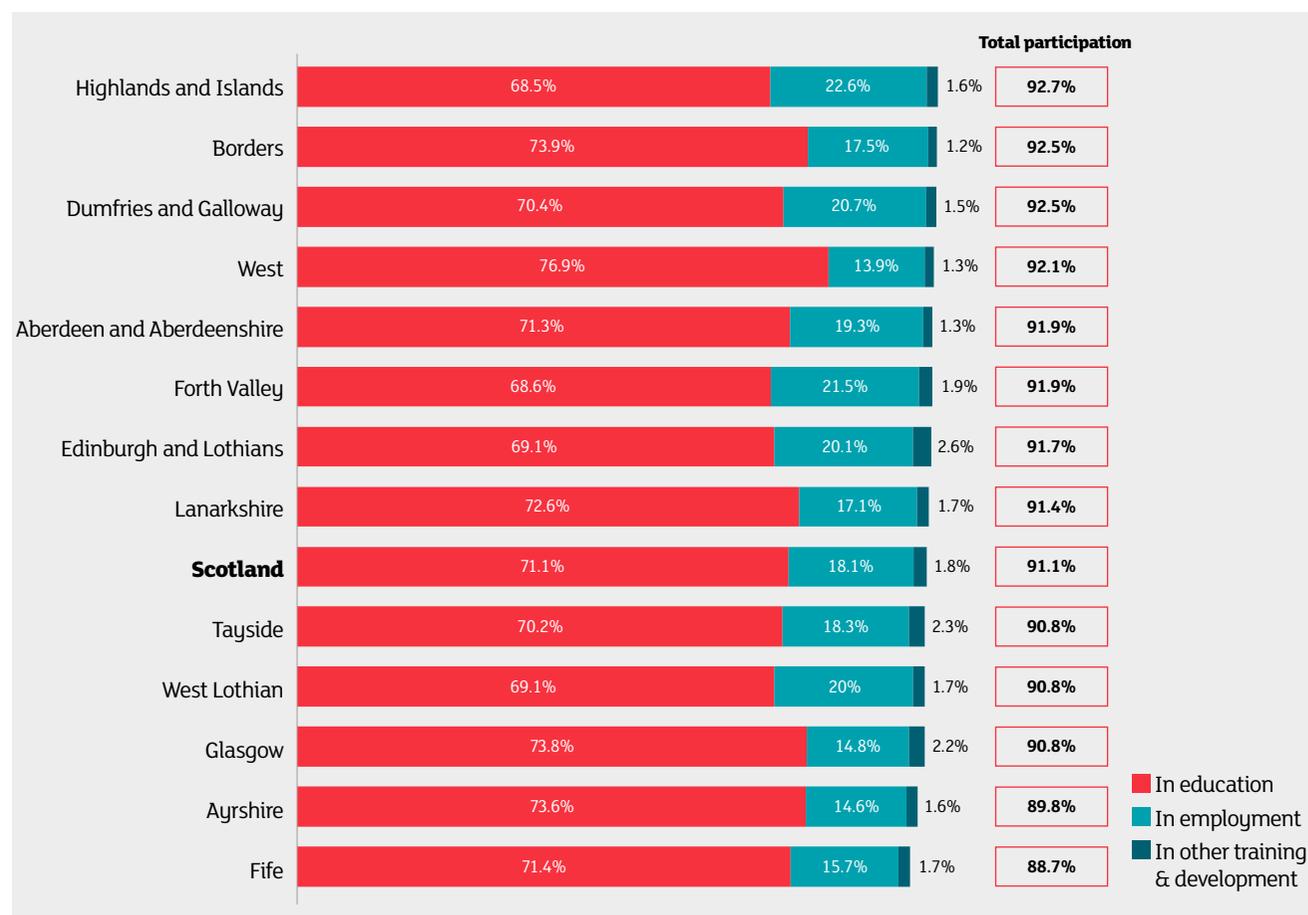
Qualification	Type of qualification	Percentage of 16-24 population with qualification
SCQF 7-12	HNC to Doctoral Degree	26%
SCQF 6	Higher level	27%
SCQF 5	National 5	27%
SCQF 1-4	National 1 to National 4	9%
Other qualifications	Job specific qualifications	4%
No qualifications		6%

Participation Measure

6.17 In 2017, 91.1% of 16 to 19 year-olds were participating in education, employment or other training and development. The proportion of 16 to 19 year-olds participating was greatest in the Highlands and Islands (92.7%) and lowest in Fife (88.7%). Of the young people participating, the majority (71.1%) were in education. The West region had the greatest proportion of participating 16 to 19 year-olds in education (76.9%) and the Highlands and Islands had the lowest (68.5%). A further 18.1% of young people were in employment, Highlands and Islands had the highest proportion of all the regions (22.6%) and the Ayrshire and West had the lowest (13.9%) (see Figure 6.6).

Figure 6.6
Participating 16-19 year olds in Scotland
by activity, 2017

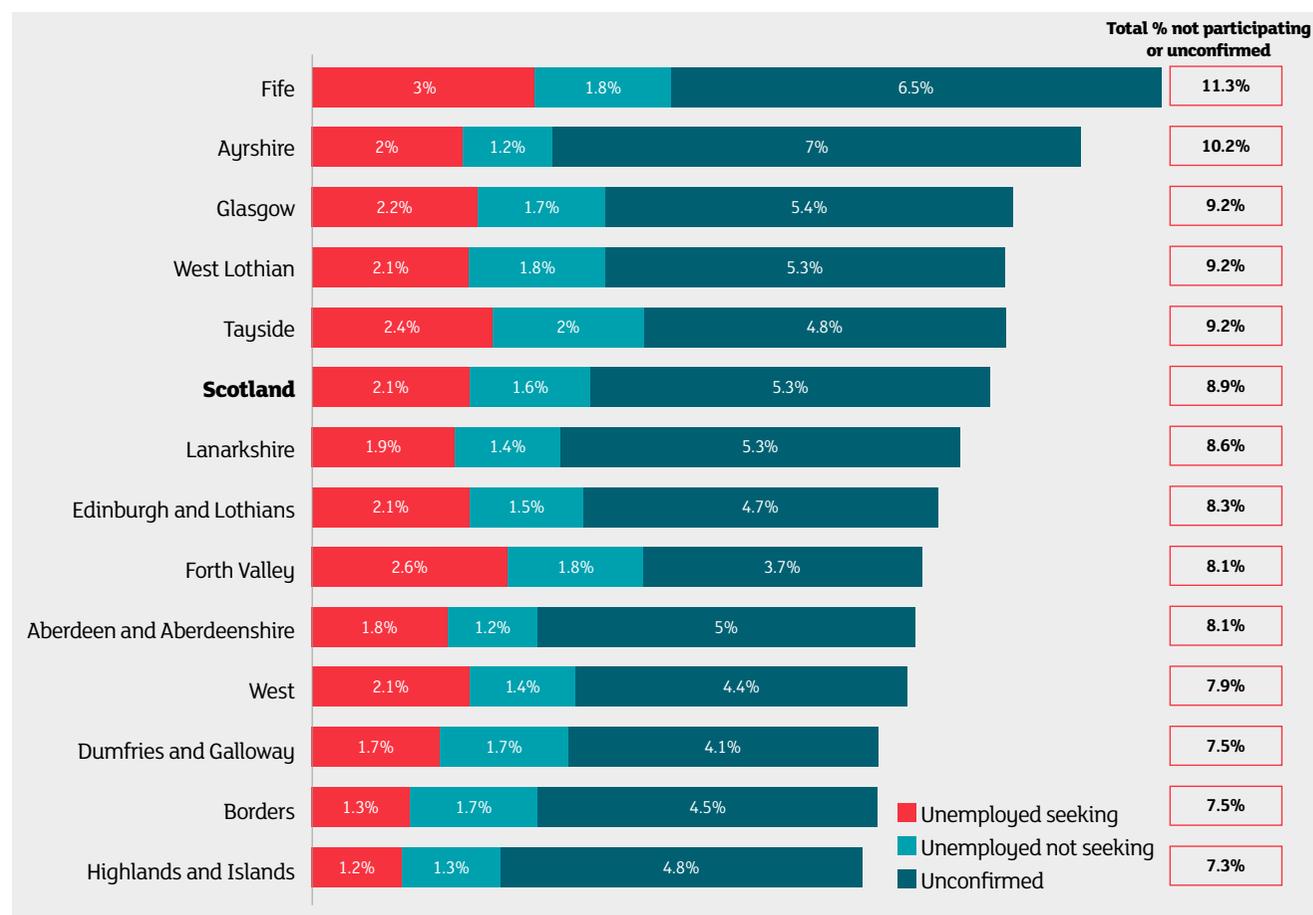
Source: SDS Participation Measure, 2017



6.18 Of the young people not in education, employment or other training and development, 3.7% were not participating and the status of 5.3% was not confirmed. Most of the 16 to 19 year-olds not participating were unemployed and seeking work (2.1% of all 16 to 19 year-olds), whilst a smaller proportion were unemployed but not seeking work (1.6%). Fife had the greatest proportion of young people unemployed and seeking, which suggests a shortage of suitable employment opportunities for young people in the region (see Figure 6.7).

Figure 6.7
Non-participating 16-19 year olds in Scotland by activity, 2017

Source: SDS Participation Measure, 2017



School leaver destinations

6.19 With regard to school leavers, across Scotland, 37% entered Higher Education in 2015/2016 – the same proportion as in 2014/2015. On a regional basis, this rate was highest in Glasgow (50%), Lanarkshire (44%) and the West Region (43%).

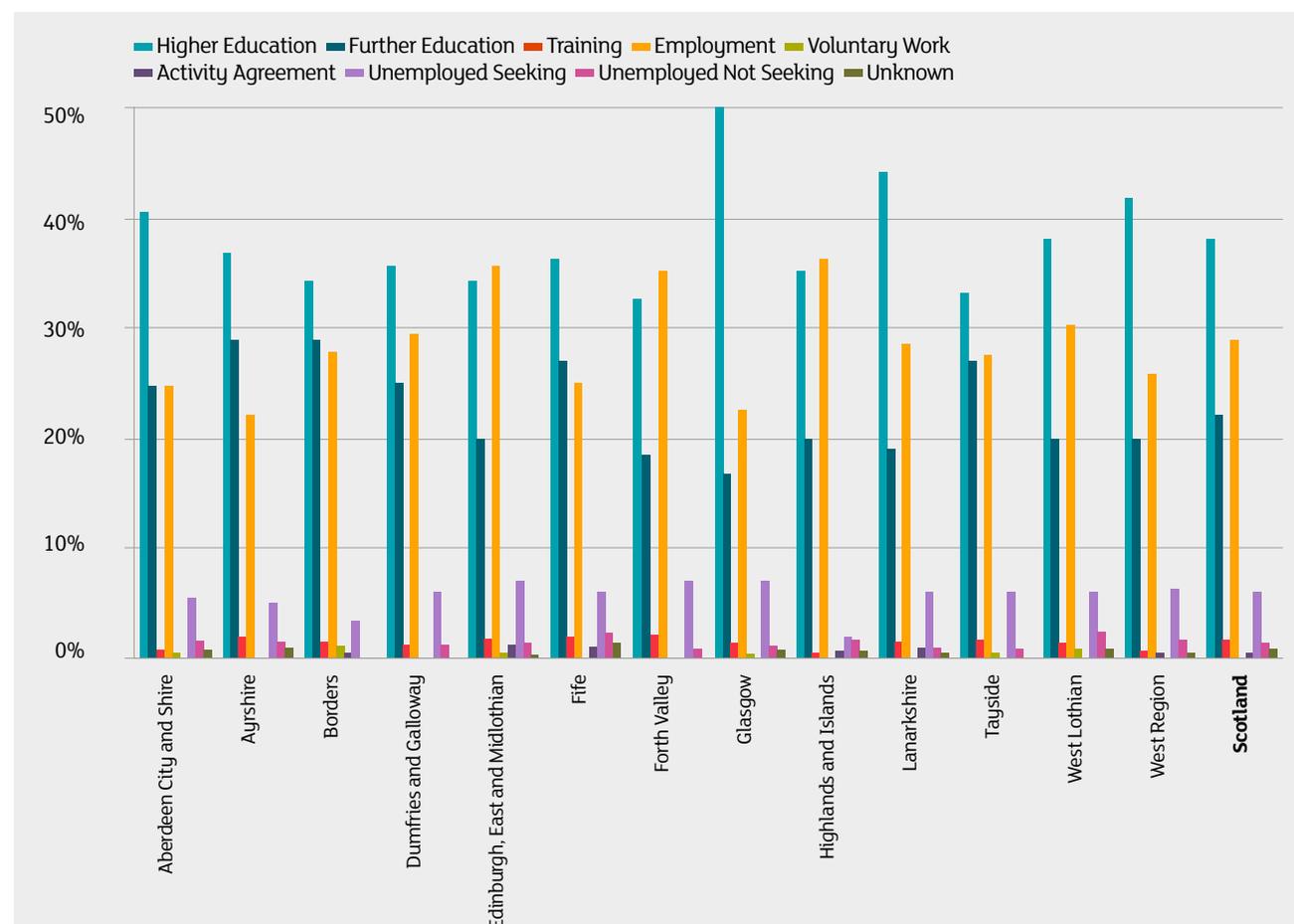
6.20 The proportion entering Further Education decreased slightly from the previous year, by one percentage point to 22%.

6.21 The proportion directly entering employment increased slightly from the previous year to 29%. The proportion of unemployed (seeking or otherwise) did, however, increase to 8% from 7% the previous year, however, still marks a decrease on the 14% in 2009/2010.

6.22 The areas with the lowest shares of school leavers becoming unemployed were the Scottish Borders and the Highlands and Islands (3 and 4%, respectively). Figure 6.8 provides a full regional breakdown.

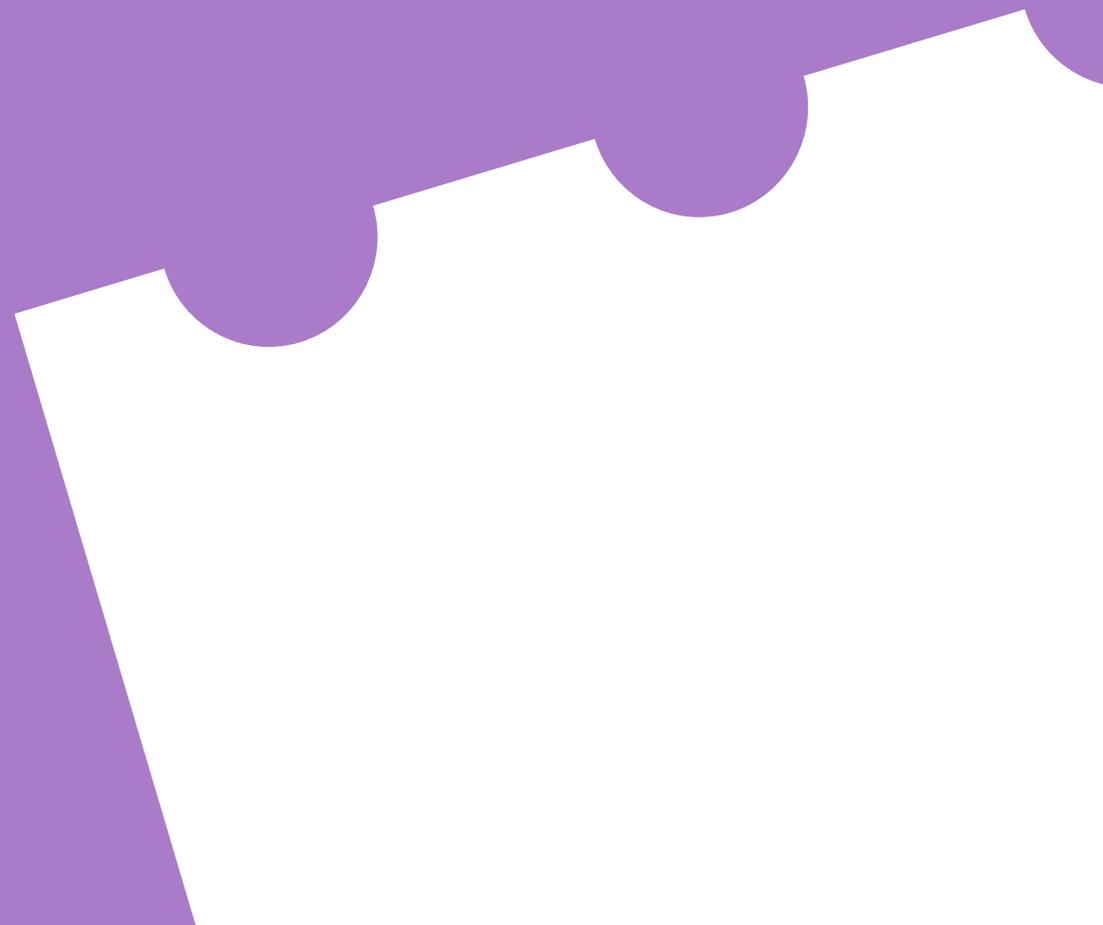
Figure 6.8
School leaver destinations, 2015-2016

Source: Scottish Government Attainment and School Leavers Destination Dataset, 2016



7

Skills challenges in Scotland



Current skills challenges facing employers

7.1 The previous section of the report described the jobs market from recession until now. Utilising, primarily, the most recent Employer Skills Survey commissioned by UKCES in 2015, this section focuses on the current skills challenges facing employers and the wider labour market including a description of skills shortages, skills gaps, issues relating to underemployment and employer investment in skills.

Table 7.1
Incidence and density of skill-shortage vacancies (SSVs) Scotland and UK

Source: UKCES Employer Skills Survey, 2015

Country	Unweighted base	% of establishments with an SSV (incidence)			% of vacancies that were SSVs (density)		
		2011	2013	2015	2011	2013	2015
UK	91,210	3	4	6	16	22	23
Scotland	6,035	3	4	6	15	25	24

Skills shortages

7.2 The 2015 Employer Skills Survey found that there had been a steep rise in vacancy levels among employers in Scotland – from 54,000 vacancies at the time of the survey in 2013 to 74,000 in 2015 – reflecting higher demand for labour. This represented an increase of 37% which is a lesser rate of growth of vacancies than at UK level (which was 42%).

7.3 Skills Shortage Vacancies (SSVs) represented a growing issue for employers in filling vacancies. As Table 7.1 shows:

- the proportion of establishments in Scotland reporting SSVs rose from 3% in 2011 to 4% in 2013 and 6% in 2015. This was in line with UK trends
- the density of SSVs (i.e. the proportion of vacancies that were hard-to-fill because of skill shortages) in Scotland increased from 15% to 25% from 2011 to 2013 and reduced slightly in 2015 to 24%. This remains slightly higher than the UK level at 23%.

Vacancies and skills shortages by region

7.4 The Employer Skills Survey in 2015 also provided, for the first time, a breakdown of vacancies and SSVs by the Regional Skills Assessment geographies. The data showed that 17% of establishments had a vacancy at the time of the survey. Establishments in Glasgow, Edinburgh and Forth Valley were most likely to report a vacancy, followed by establishments in the Highlands and Islands and Fife (see Figure 7.1 on next page).

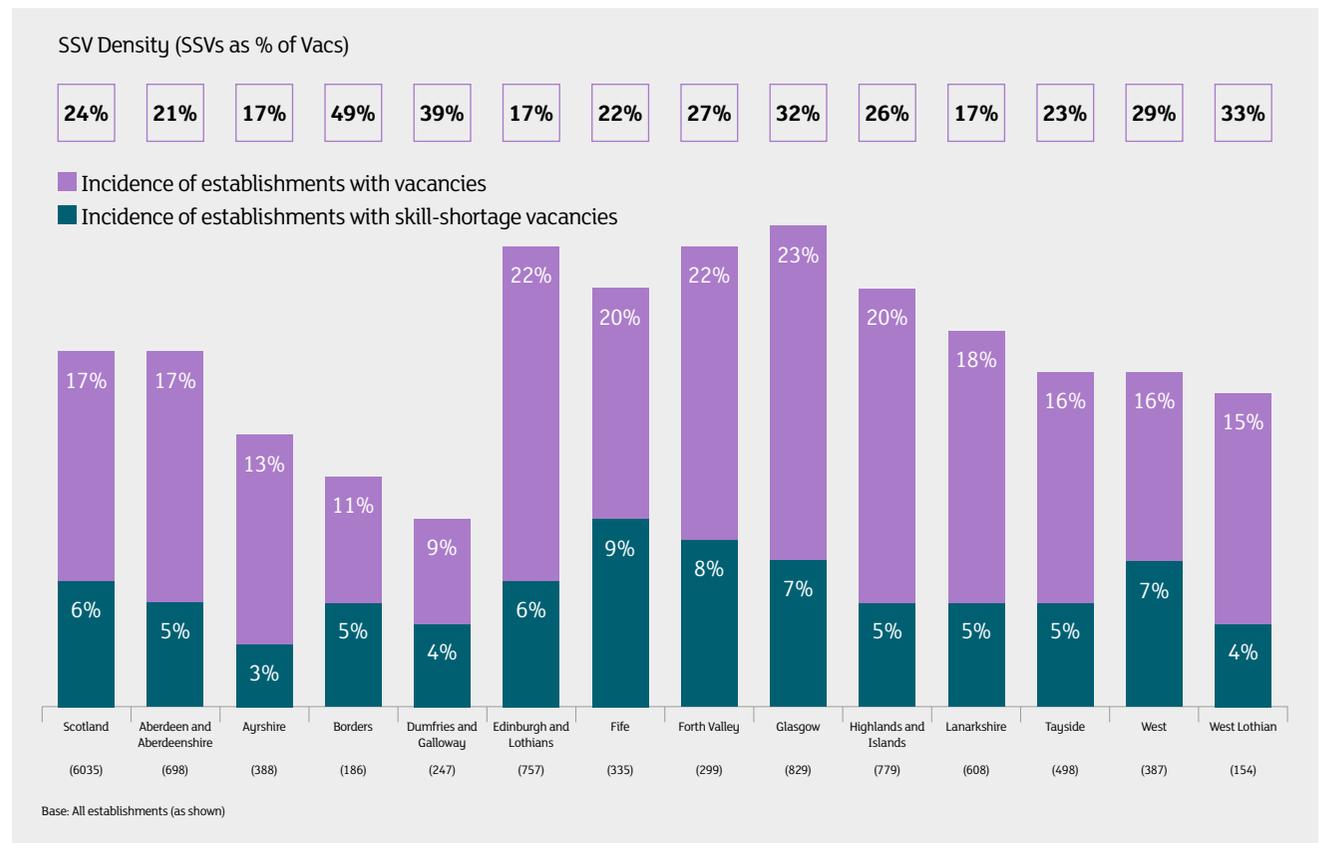
7.5 There were much lower proportions of establishments with vacancies in the far south and south west of Scotland, notably Dumfries and Galloway (9%), Borders (11%) and Ayrshire (13%). Establishments with vacancies were also below average in West Lothian (15%).

7.6 The extent to which these vacancies were the result of SSVs presents a different story. The highest density of SSVs was reported in the Borders (49%), Dumfries and Galloway (39%) and West Lothian (33%) where there were also low levels of establishments reporting vacancies. SSVs were also above the Scottish average in the West Region (29%), Forth Valley (27%) and Highlands and islands (26%).

7.7 There were also a number of regions where SSVs were lower than the Scottish average, notably in Edinburgh and Lothians, Ayrshire and Lanarkshire (all 17%), Aberdeen City and Shire (21%) and Fife (22%).

Figure 7.1
Incidence and density of Skills Shortage Vacancies by region

Source: UKCES Employer Skills Survey, 2015



Skills shortages by sector

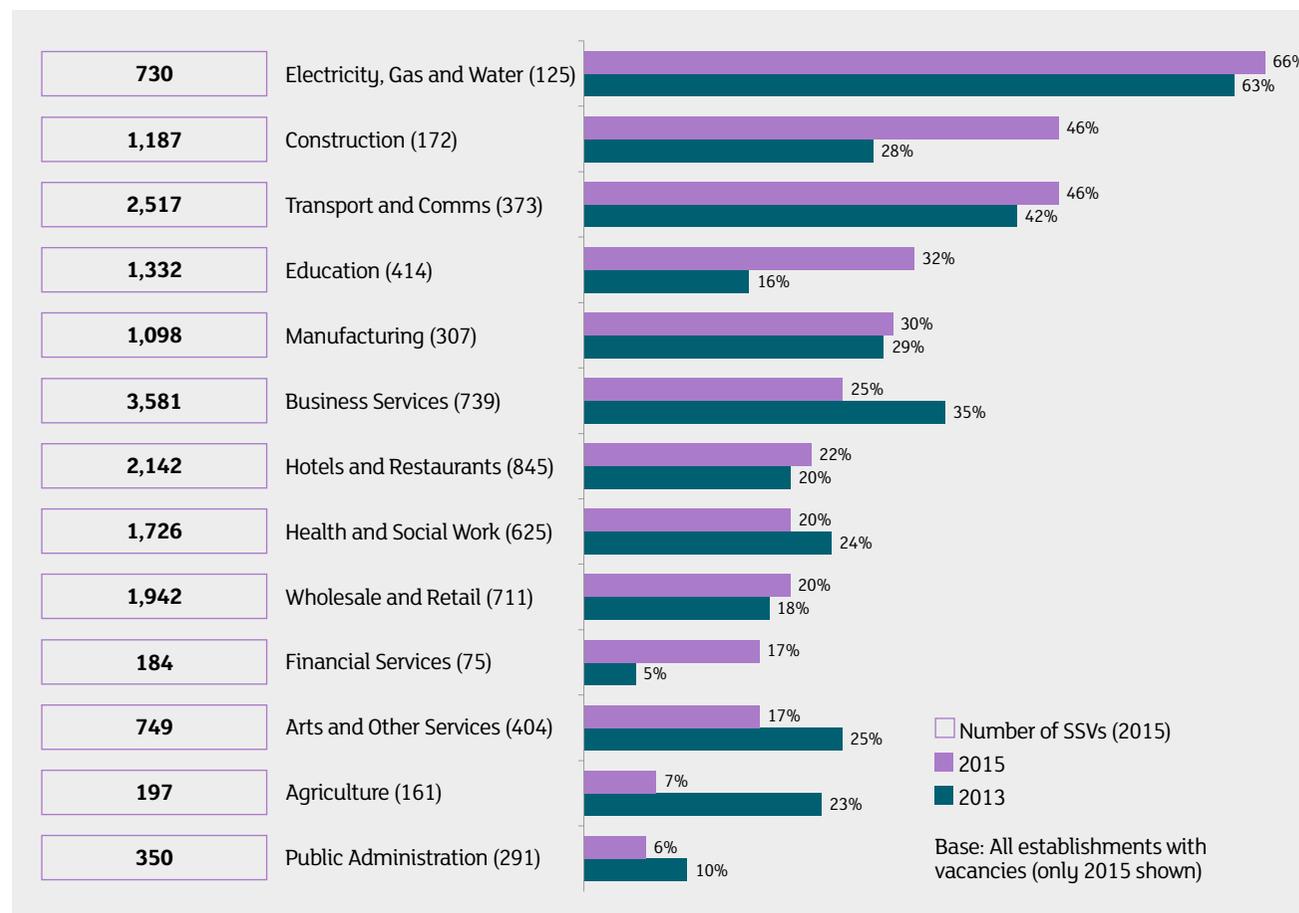
7.8 In analysing Skills Shortage Vacancies (SSV) by sector, as Figure 7.2 illustrates, the top 5 sectors with the highest density of SSVs were Electricity, Gas and Water (66%); Construction (46%); Transport and Communications (46%); Education (32%); and Manufacturing (3%). Of this group both the Construction (+18 percentage points) and Education (+16 percentage points) sectors saw large increases in the percentage of vacancies that were caused by skills shortages between 2013 and 2015. The other three sectors in this group saw only modest increases in the density of SSVs.

7.9 A number of sectors saw significant falls in the density of SSVs. These included Agriculture (down 16 percentage points); Business Services (down 10 percentage points); Arts and other services (down 8 percentage points); Health and Social Work (down 4 percentage points); and Public Administration (down 4 percentage points).

7.10 Finally, the density of SSVs increased significantly in Financial Services, from 5% in 2013 to 17% in 2015.

Figure 7.2
Density of Skills Shortage Vacancies by sector

Source: UKCES Employer Skills Survey, 2015



Vacancies and skills shortages by occupation

7.11 Data is also available on the density of SSVs by occupation from the Employer Skills Survey – going back over four years from 2011 to 2015 (Figure 7.3). Comparative analysis of the data throws up some interesting messages. The highest proportion of SSVs in 2015 were in Skilled Trades (40%), Machine Operatives (36%), Professionals (29%) and Sales and Customer Service (28%). Vacancies were much less likely to be SSVs in Administrative and Clerical roles (11%), Elementary Occupations (14%) and Managers (16%).

7.12 There have been some sharp increases in vacancies that are SSVs in a number of occupations most notably Machine Operatives (+21 percentage points), Associate Professionals (+17 percentage points), Sales and Customer Service (+16 percentage points), Skilled Trades (+9 percentage points) and Caring and Leisure (+8 percentage points). Only in Managerial occupations and elementary roles has the proportion of vacancies that were SSVs fallen between 2011 and 2015.

Figure 7.3
Density of Skills Shortage Vacancies by occupation

Source: UKCES Employer Skills Survey, 2015

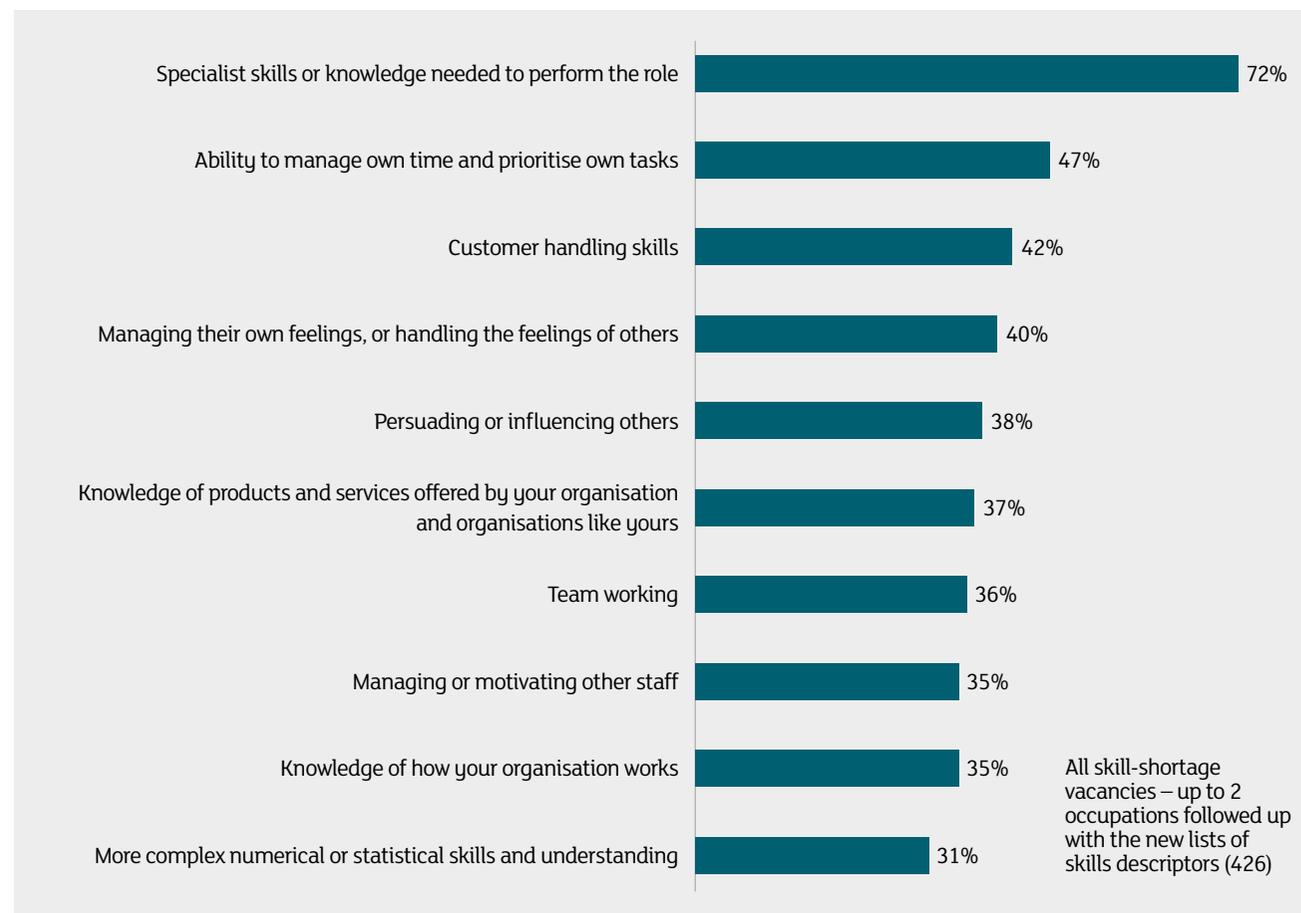


Main causes of skills shortages

7.13 Specialist skills or knowledge needed to perform the role was the most common skill employers found difficult to obtain from applicants. Overall 72% of employers reported that this was the main skill lacking. Almost half of employers found applicants to be lacking the ability to manage and prioritise their own tasks, this was the most common softer skill to be absent. Other softer skills such as dealing with customers and self-management were also frequently lacking (see Figure 7.4).

Figure 7.4
Ten most common skills lacking in applicants

Source: UKCES Employer Skills Survey, 2015



Skills gaps

7.14 The proportion of establishments reporting skills gaps in Scotland was 14% in 2015 (Table 7.2). This was the same as at UK level; although Scotland has seen a large reduction since 2011 which was at a high of 21% compared to 17% for the UK.

7.15 The proportion of staff not fully proficient in their job (i.e. the skills gap density) was 5% in Scotland in 2015; the same as in the UK. The density of skills gaps in the UK has fallen consistently since 2011 whilst in Scotland there was a sharp increase in 2013 (5.9%) and then falling to 5%.

Table 7.2
Incidence and density of skills gaps,
Scotland and UK

Source: UKCES Employer Skills Survey, 2015

Country	% of establishments with Skills Gap			Density-% of all staff with a Skills Gap		
	2011	2013	2015	2011	2013	2015
UK	17	15	14	5.5	5.2	5.0
Scotland	21	19	14	5.2	5.9	5.0

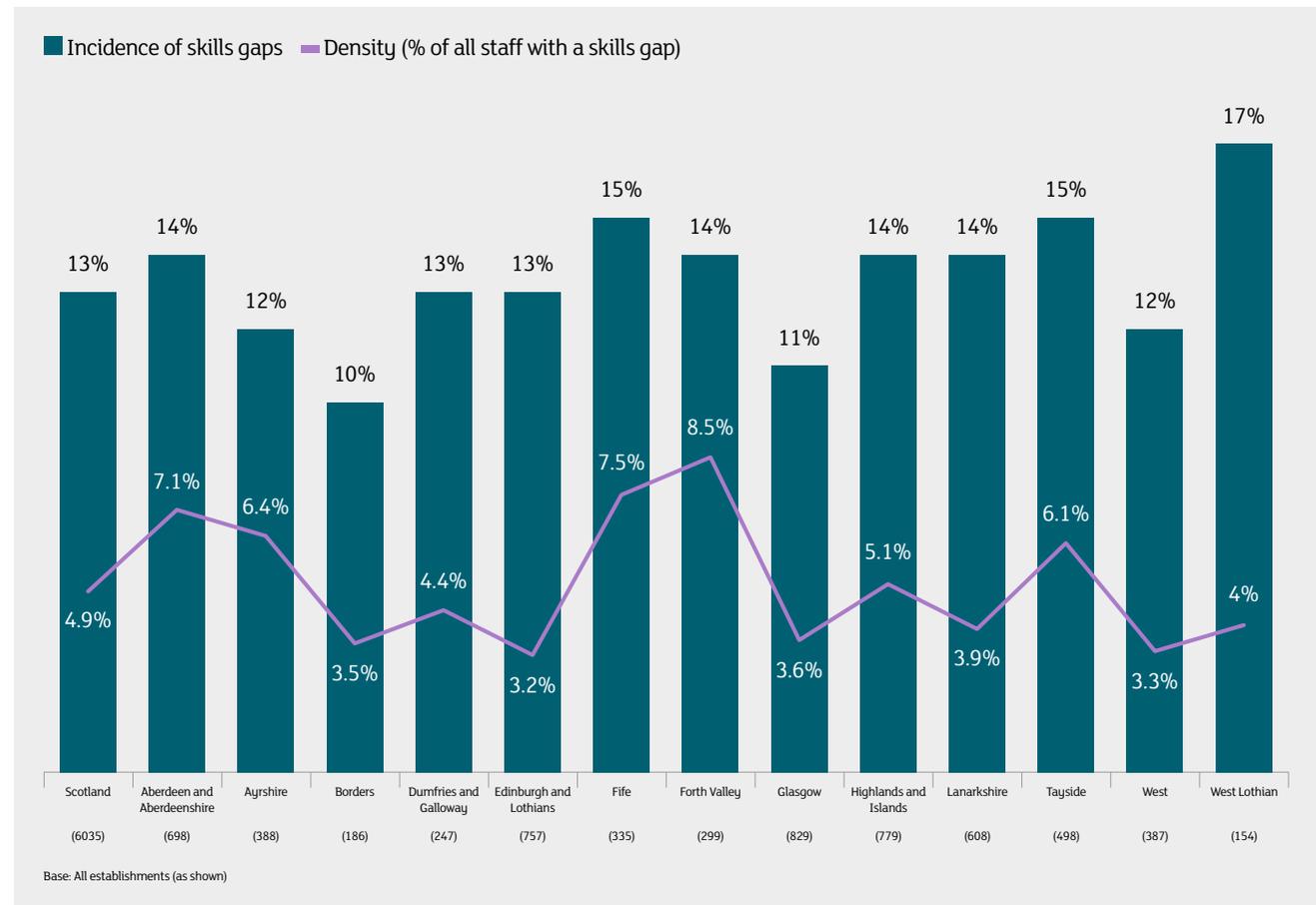
Skills gaps by region

7.16 The regions with the highest proportion of establishments with skills gaps (Figure 7.5) were West Lothian (17%) and Fife and Tayside (both 15%). The regions with the lowest proportion of establishments with skills gaps were Borders (10%), Glasgow (11%) and Ayrshire and West (both 12%).

7.17 The regions with the highest density of skills gaps were Forth Valley (8.5%), Fife (7.5%) and Aberdeen City and Shire (7.1%). The regions with the lowest density of skills gaps were Edinburgh and Lothians (3.2%), West (3.3%) and Borders (3.5%).

Figure 7.5
Incidence and density of skills gaps by region

Source: UKCES Employer Skills Survey, 2015



Skills gaps by sector

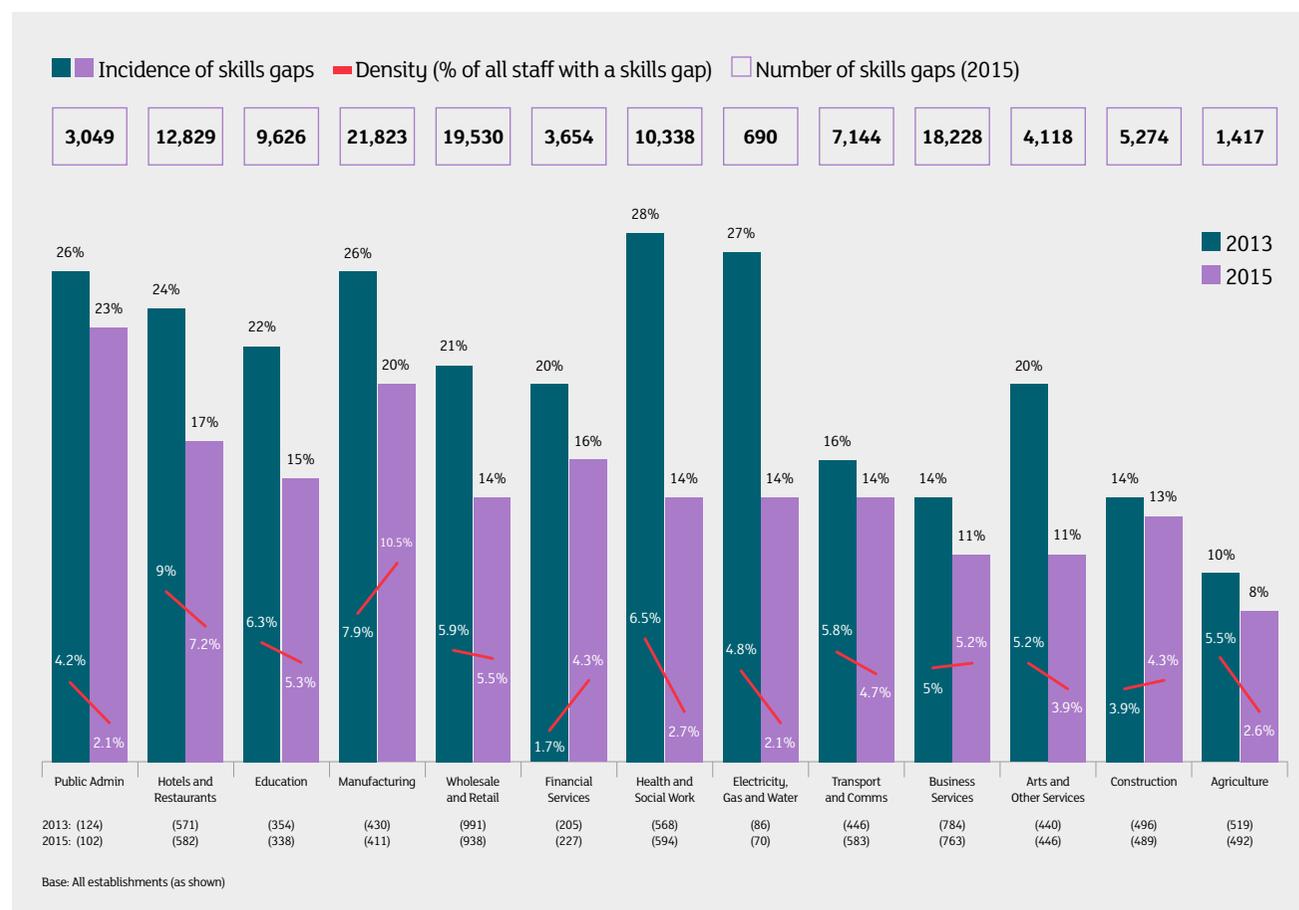
7.18 Figure 7.6 illustrates that the sectors with the highest proportion of establishments with skills gaps in 2015 were Public Administration (23%), Manufacturing (20%) and Hotels and Restaurants (17%). The sectors with the lowest proportion of establishments with skills gaps were Agriculture (8%) and Business Services and Arts and other services (both 11%). All sectors experienced a fall in the proportion of establishments with skills gaps between 2013 and 2015.

7.19 The sectors with the highest density of skills gaps in 2015 were Manufacturing (10.5%), Hotels and Restaurants (7.2%) and Wholesale and Retail (5.5%). The sectors with the lowest density of skills gaps were Public Administration and Electricity, Gas and Water (both 2.1%). Changes in density of skills gaps between 2013-2015 varied. Of note was the fact that:

- there was a large increase in the density of skills gaps in Manufacturing
- there was a large decrease in Health and Social Work and Agriculture.

Figure 7.6
Incidence and density of skills gaps by sector

Source: UKCES Employer Skills Survey, 2015



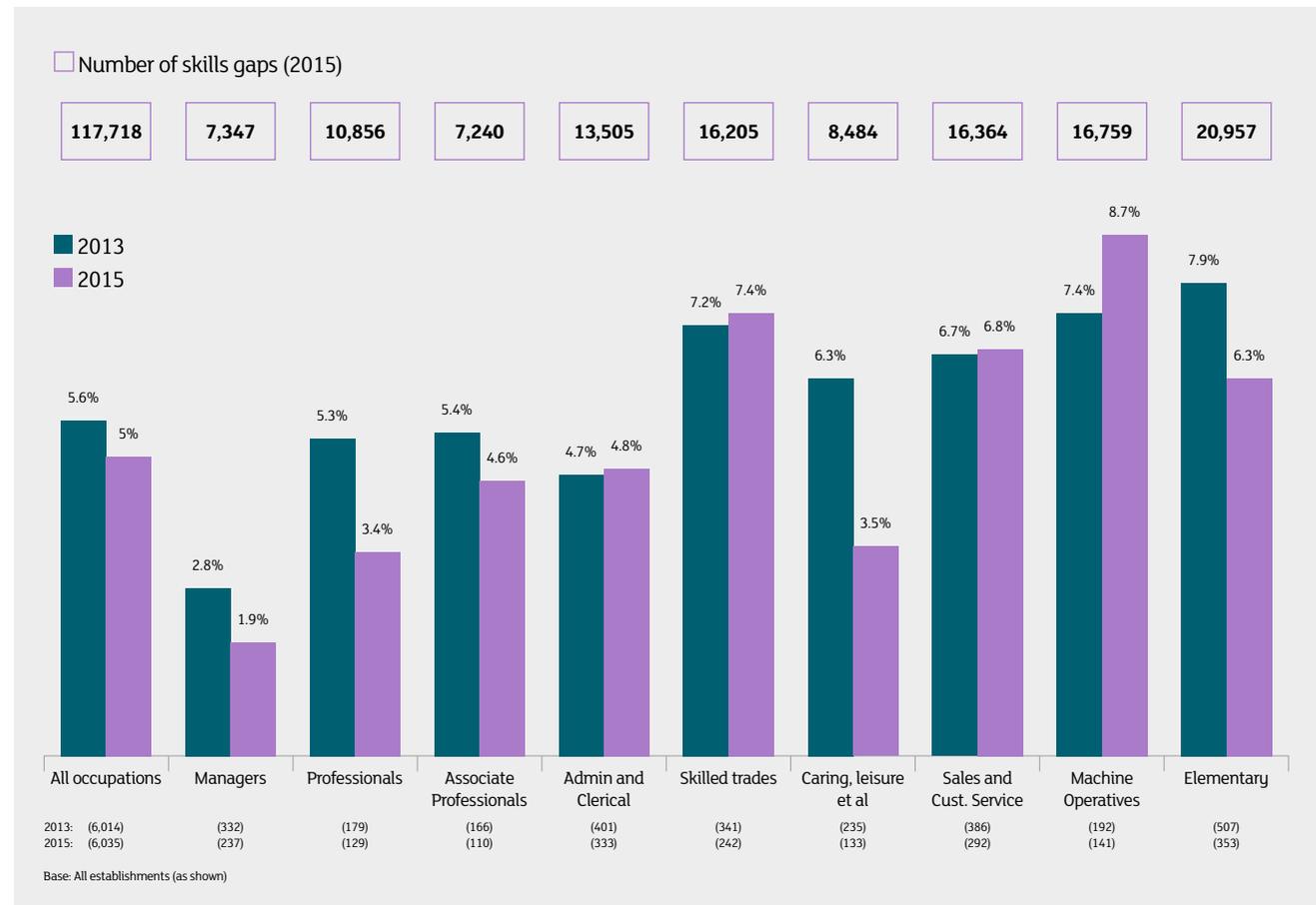
Skills gaps by occupation

7.20 Figure 7.7 shows that the occupations that had the highest numbers of skills gaps were Elementary Occupations (20,957), followed by Machine Operatives (16,759) and Sales and Customer Service (16,364). The occupations with the highest proportion of skills gaps were Machine Operatives (8.7%), Skilled Trades (7.4%) and Elementary Occupations (6.3%).

7.21 There was a decrease in reported skills gaps across all occupations from 5.6% to 5%, though there was an increase in skills gaps for Administration and Clerical, Skilled Trades and Machine Operatives.

Figure 7.7
Skills gaps density by occupation

Source: UKCES Employer Skills Survey, 2015

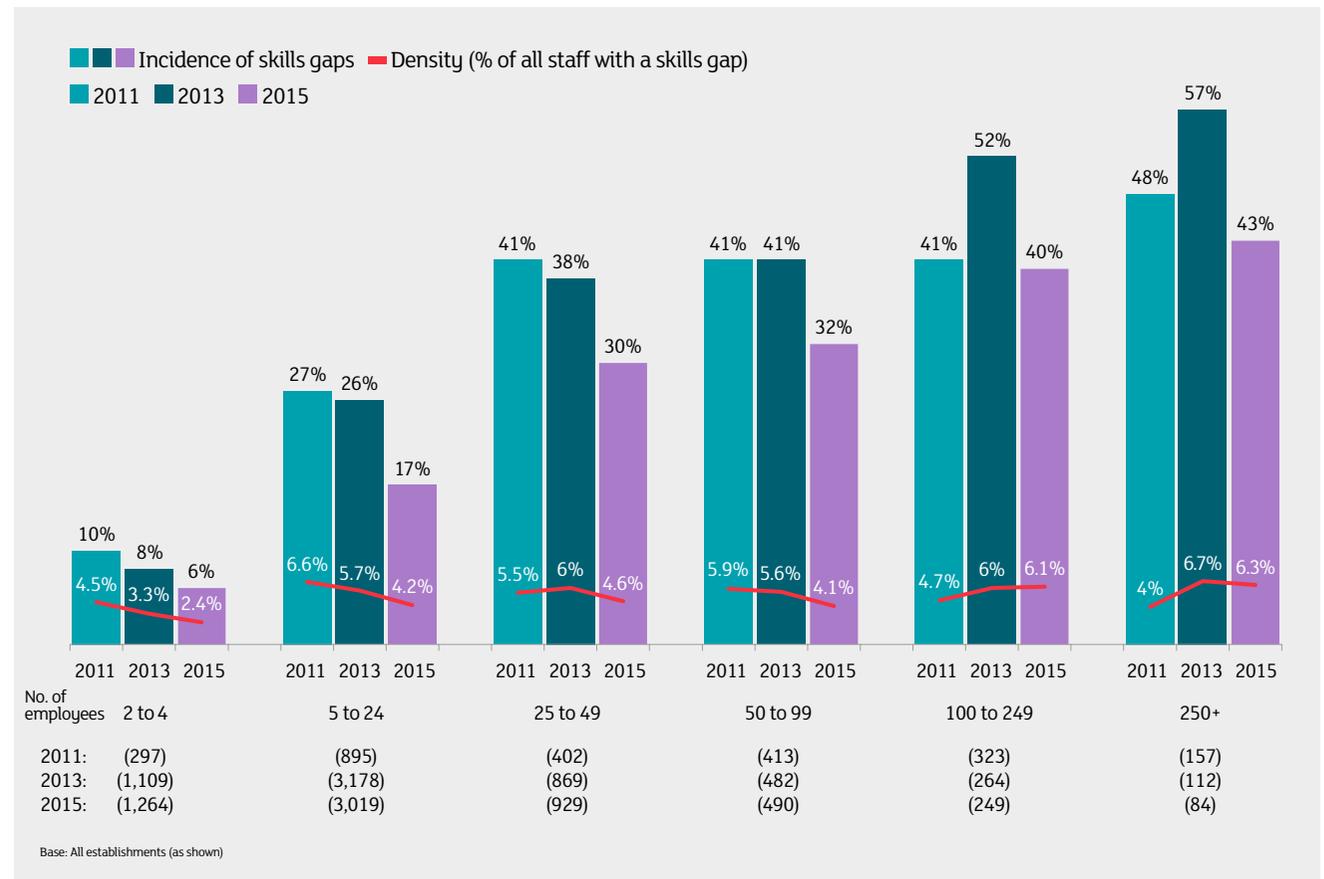


Skills gaps by establishment size

7.22 Figure 7.8 illustrates the incidence and density of skills gaps in Scotland by establishment size showing that larger companies had a higher incidence and higher density of skills gaps than smaller companies as was the case in 2011, 2013 and 2015.

Figure 7.8
Incidence and density of skill gaps by establishment size

Source: UKCES Employer Skills Survey, 2015

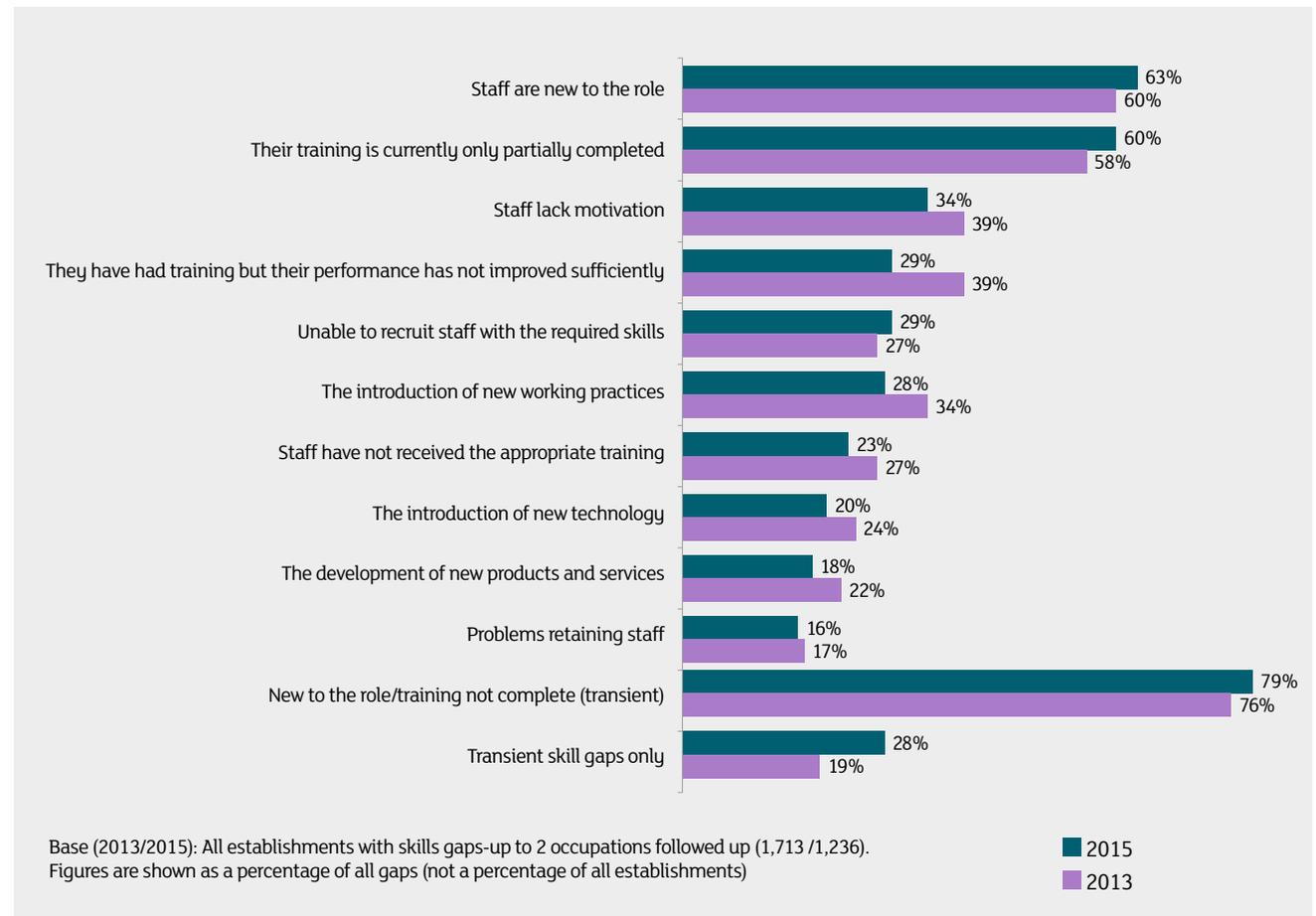


Main causes of skills gaps

7.23 Figure 7.9 outlines that the most common causes of skills gaps in 2015 was as a result of staff being new to the role were due to the fact that their training had only been partially completed. These causes have increased in proportion since 2011 as has the ability to recruit staff with the required skills.

Figure 7.9
Main causes of skills gaps

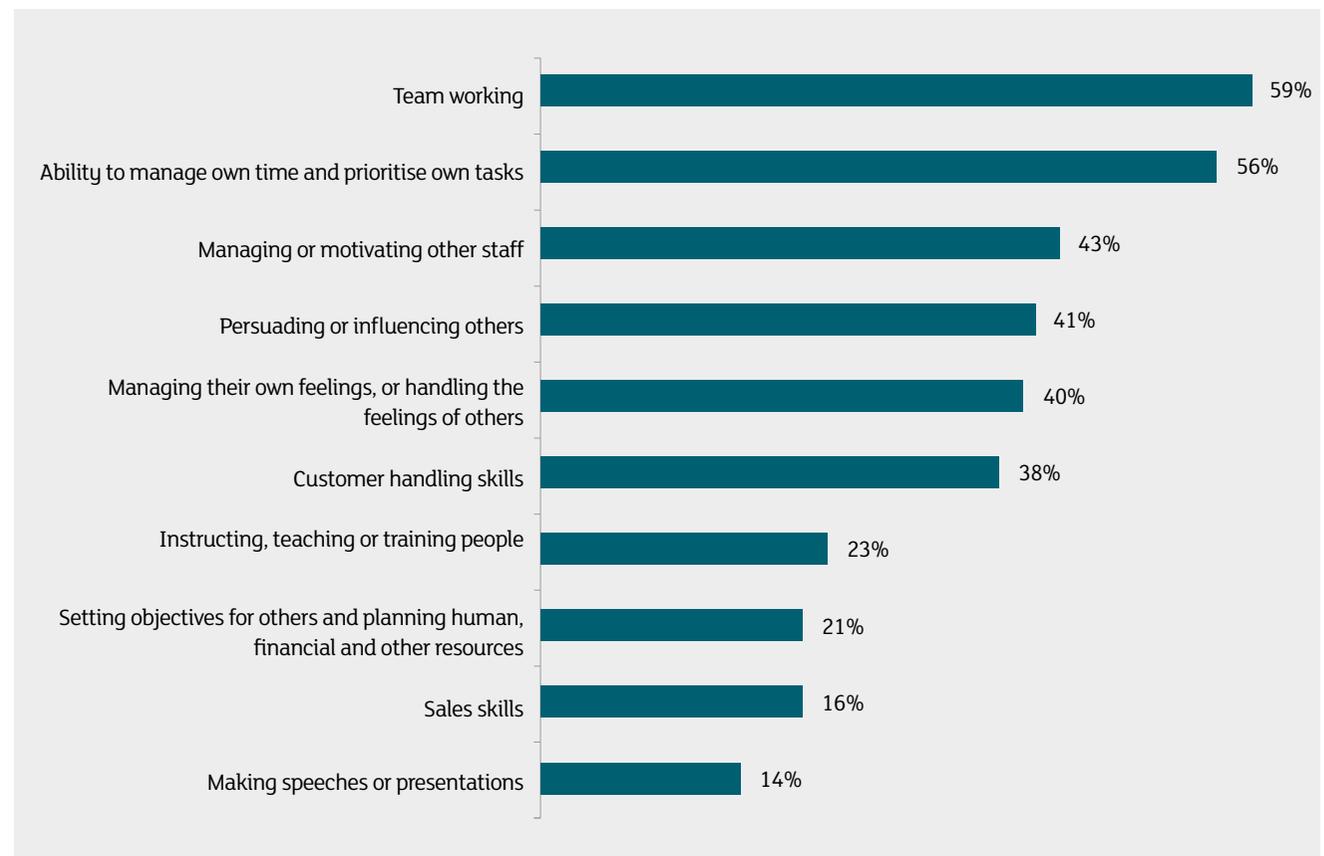
Source: UKCES Employer Skills Survey, 2015



7.24 In addition, Figure 7.10 outlines other people and personal skills that need to be improved among staff with skills gaps. As can be observed the top skill that needs to be improved is team working.

Figure 7.10
People and personal skills improvements required

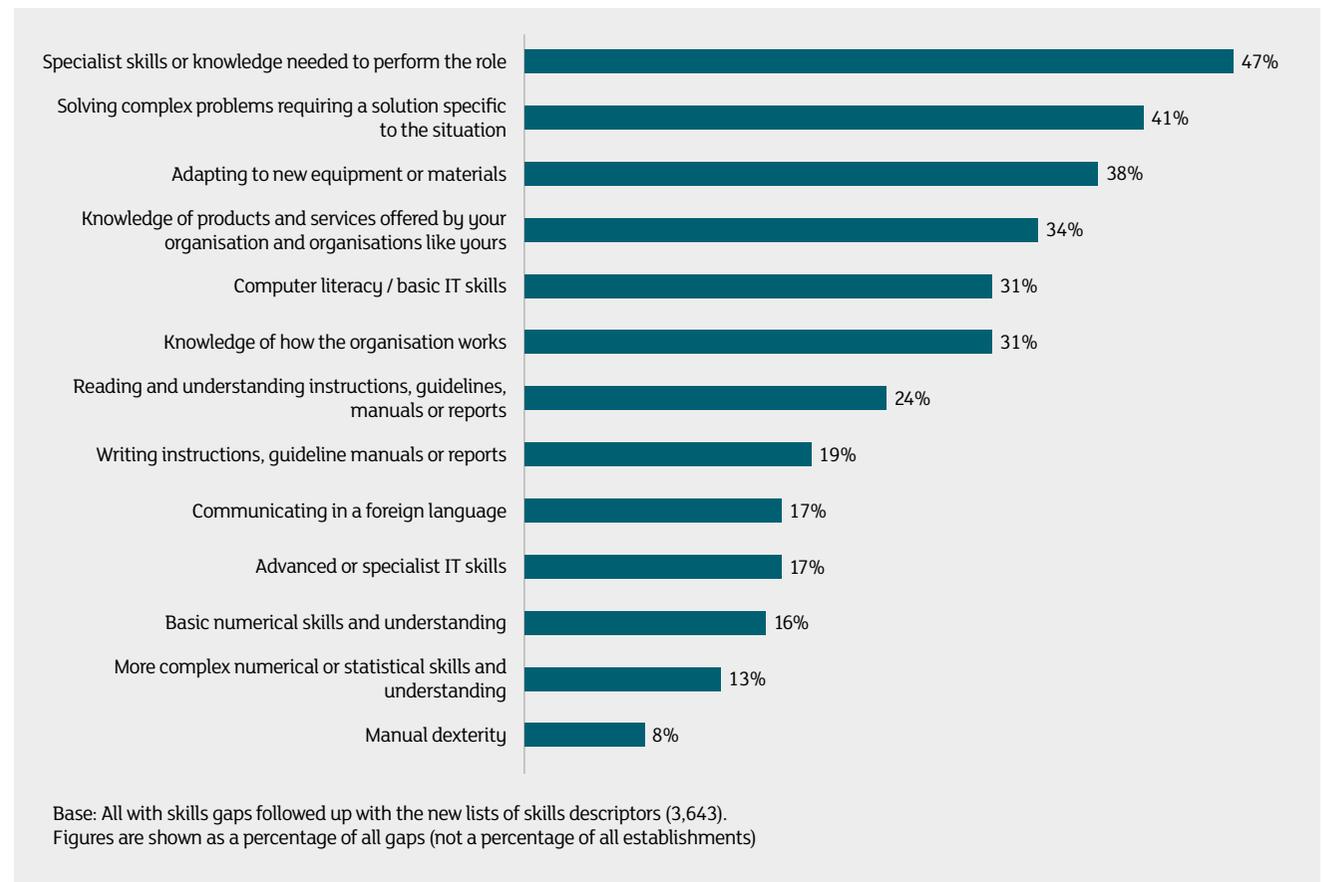
Source: UKCES Employer Skills Survey, 2015
 Base: All skills gaps followed up with the new lists of skills descriptors (3,643)



7.25 In addition to people and personal skills, there were gaps in technical skills. The main skills lacking were specialist skills needed for the role and the ability to solve complex problems (see Figure 7.11).

Figure 7.11
Technical and practical skills improvements needed

Source: UKCES Employer Skills Survey, 2015

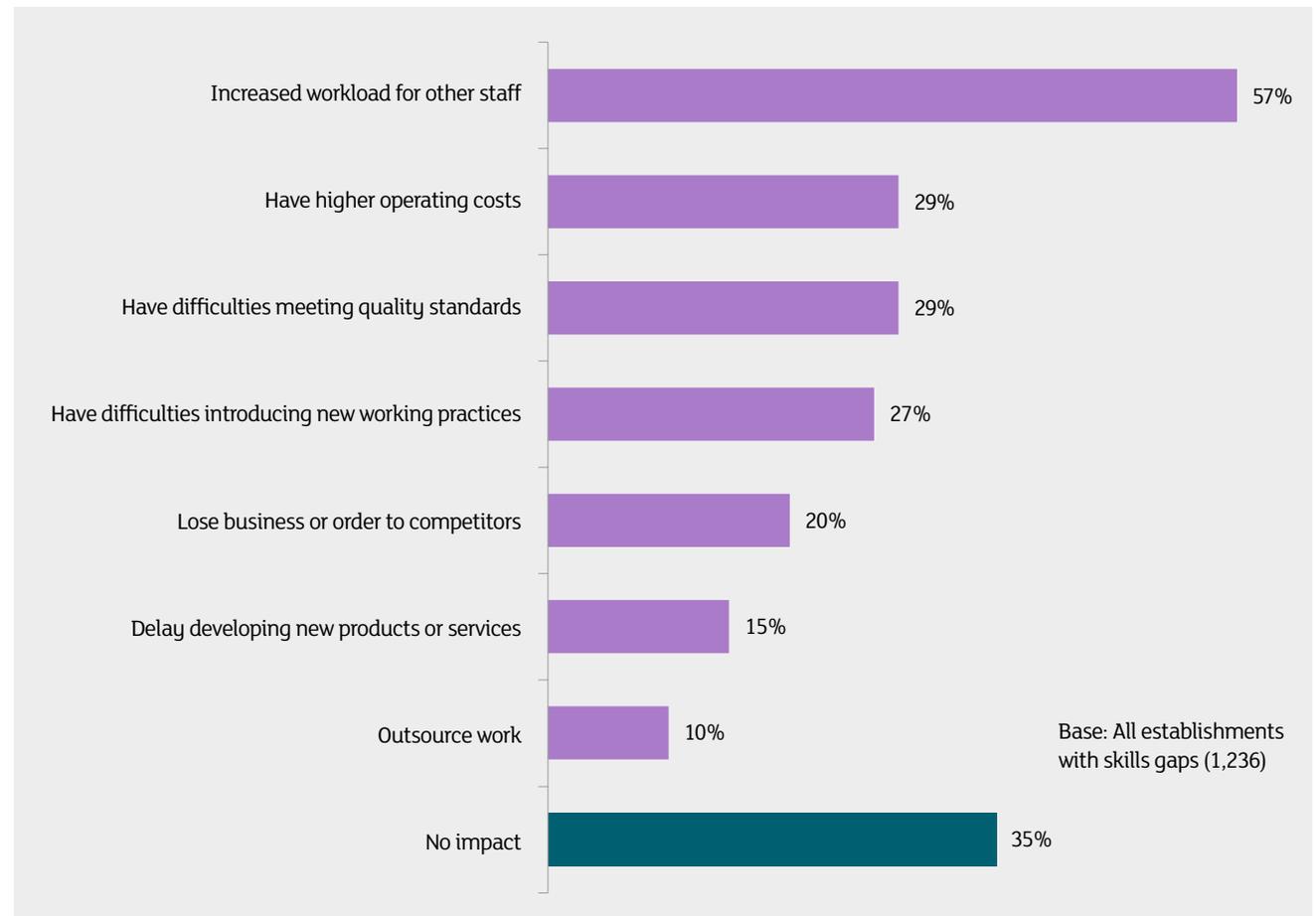


Impact of skills gaps

7.26 Finally, when asked in the Employer Skills Survey as to the impact of skills gaps on their business, just over a third of establishments (35%) reported no impact (Figure 7.12). Of those that did report an impact, the most common impact was an increased workload for other staff.

Figure 7.12
Impact of skills gaps

Source: UKCES Employer Skills Survey, 2015

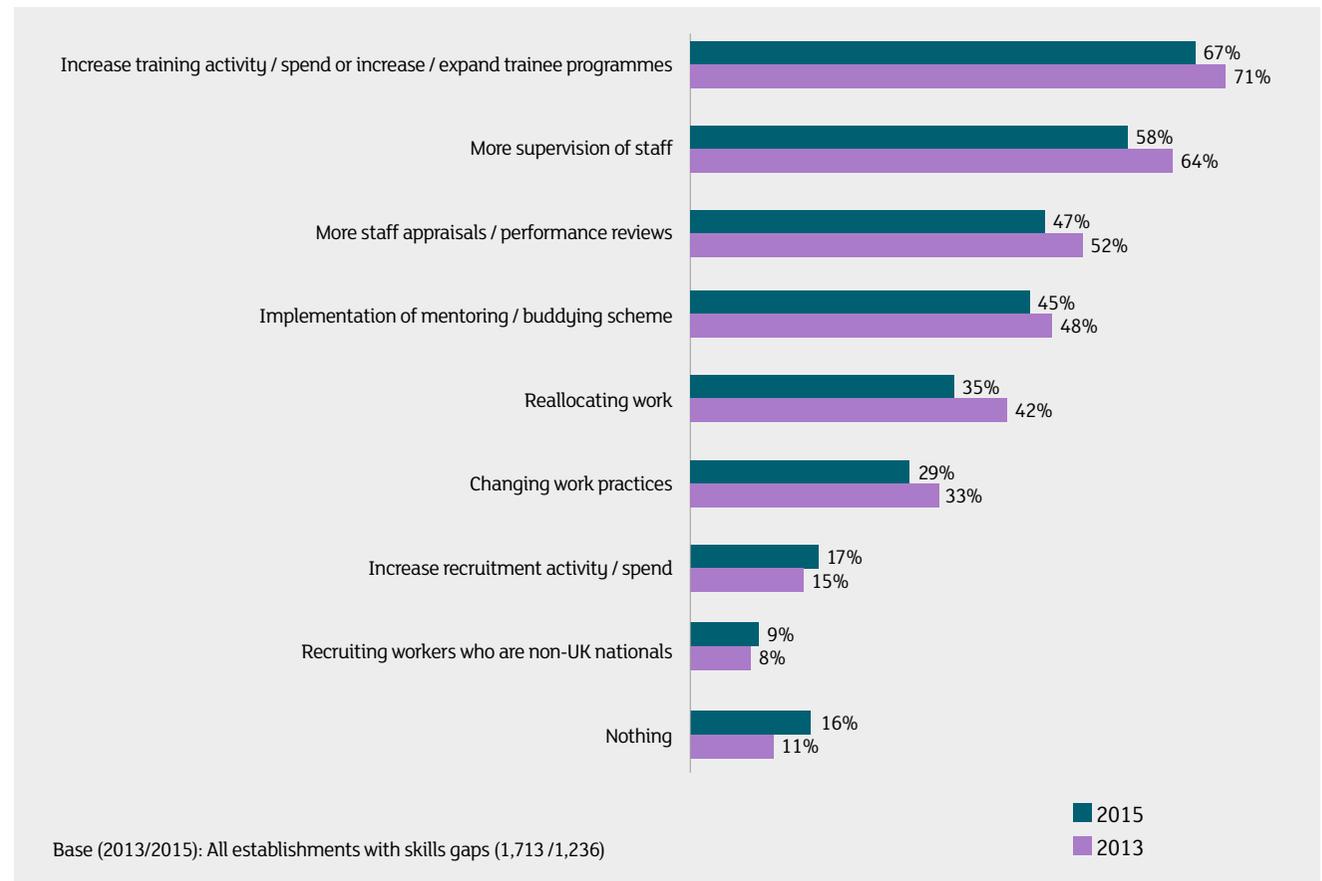


Response to skills gaps

7.27 The most common response to overcoming skills gaps in 2015 was to increase training activity and/or trainee programmes. In 2015, there were proportionally more employers who sought new workers to address skills gaps in their current workforce, either by increasing recruitment activity and/or seeking migrant workers. There were also proportionally more employers in 2015 who took no action to address skills gaps; this suggests that these skills gaps will remain and could impact on productivity as employees may not be fully proficient (see Figure 7.13).

Figure 7.13
Actions taken by employers to overcome skills gaps

Source: UKCES Employer Skills Survey, 2015



Investment in skills

7.28 The Employer Perspectives Survey (EPS) (2014) found that 72% of Scottish employers invested in the skills of their workforce by offering training to their staff. A year later, the Employer Skills Survey (ESS, 2015) found that a similar proportion, approximately three out of every four (71%), of employers in Scotland had offered training to their employees over the last 12 months. This was higher than the proportion across the UK as a whole; across the UK approximately two thirds (66%) of employers had offered training.

7.29 In total the training offered by employers meant that 62% of the Scottish workforce received training (2014/2015). This was the lowest rate across all UK nations and one percentage point below the UK average (63%). Employees of businesses based in Scotland received slightly less training than workers across the UK, despite more employers in Scotland offering training (UKCES, 2016).

7.30 The proportion of large Scottish employers offering training to their employees was almost double that of smaller businesses. Nearly all (97%) large employers (100+ employees) had offered training to their employees in the last 12 months, compared to micro-firms (2-4 employees) where the proportion offering training was 56%. Compared to smaller employers, larger employers trained a greater proportion of their workforce. Employers with 2-4 employees trained, on average, 43% of their workforce. Whereas large employers (100-249 employees) trained 67% and the largest employers (250+ employees) trained 70%. The evidence suggests that the size of the business influences whether they offer training, and to what extent training is offered throughout the workforce. The industry and occupation of the employee were also factors that influenced training.

7.31 Of those that offered training, the most common training offer was job specific training (86%). Almost half (49%) of employers also offered training in new technology. Non-job specific training was also common with 74% of employers offering health and safety/first aid training and 66% provided basic induction training to employees (UKCES, 2016).

7.32 Of the employers in Scotland that offered no training, all staff being fully proficient or no need for training was the most common reason for not offering training. Overall 67% of employers not offering training thought this. In addition to a lack of need to train there were barriers to a small proportion of employers that prohibited training. These included:

- no money for training (6%)
- no training available in relevant subject area (4%)
- employees too busy to undertake training (3%)
- managers lack time to organise training (3%).

7.33 Of all the businesses in Scotland that responded to the ESS, 47% wanted to offer more training to their employees. The remaining 53% of employers were in a 'training equilibrium' and did not intend to offer more training. The desire to offer more training was higher amongst the employers that already offered training. Of all the employers who would have provided more training if they could the inability to spare more staff time (54%), and lack of funds (53%) were the most prevalent barriers (see Figure 7.14).

7.34 The majority of employers who invested in their workforce funded the training in full. Overall 69% of training sourced from commercial organisations, 53% from Further Education (FE) Colleges and 51% from Universities/Higher Education Institutions (HEIs) was fully funded by employers. Approximately one quarter of the training employers sourced from commercial organisations was part or not at all funded by the employer. This proportion of no cost or co-funded training was higher in FE Colleges and Universities at 44% for both types of provider (UKCES, 2014).

Figure 7.14
Employer interest in training

Source: UKCES Employer Skills Survey, 2015
Note: Training employers responding 'Don't know' have been included in the group 'Wanted to undertake more training' on final measure



7.35 As the EPS results suggest, and also identified by BIS research (2016), employers are the largest investors in skills and training for adults. In 2015, UK employer expenditure on training was £45.4 billion. This equates to £2,600 per person trained or £1,600 per employee. Investment in skills and training by employers in Scotland was below the UK average. Total expenditure was £3.4 billion, which was equal to £2,300 per person trained or £1,400 per employee. The expenditure of Scottish employers on training has gradually declined since 2011, which is in contrast to increasing spend across the UK. The overall spend of Scottish employers declined by 8% from 2011 to 2015. However employers are not the only source of investment with other private, public and voluntary sector organisations also investing in skills and training at the local, national and European level. It is also known that individuals invest in their own training.

Underemployment

7.36 Earlier in the report, we outlined evidence in relation to the rise of non-standard jobs. This has resulted in a strong focus on the notion of underemployment over the last eight years. Underemployment provides a broader measure of latent capacity within the labour market (Bell and Blanchflower, 2013). There are two dimensions to underemployment. The first relates to people wanting to work more hours than they are currently working (sometimes referred to as involuntary underemployment) and the second relates to the under utilisation of their skills.

Involuntary underemployment

7.37 Measuring underemployment was recognised as difficult by a Scottish Parliamentary Inquiry (2013) due to the lack of a robust time series of statistical evidence on underemployment. However, by drawing on a range of complementary data sources a picture of underemployment can be built up for Scotland. The data suggests an increase in underemployment in recent years, with trends in Scotland for 2007-2013 indicating a doubling of individuals working part time reporting that they 'could not find a full time job' since the beginning of the recession (Women in Scotland's Economy Research Centre, 2014).

7.38 This is supported by Scottish Government analysis that suggests that recent increases in part time employment have been driven primarily by those unable to secure full time employment (Scottish Government, 2014). Rises in underemployment may also be related to the phenomenon of labour hoarding, in which employers hold onto their labour force e.g. in times of recession, by offering them part time or temporary contracts rather than paying them off (Bell and Blanchflower, 2013).

7.39 Furthermore, Scottish Government (2013) evidence suggests that:

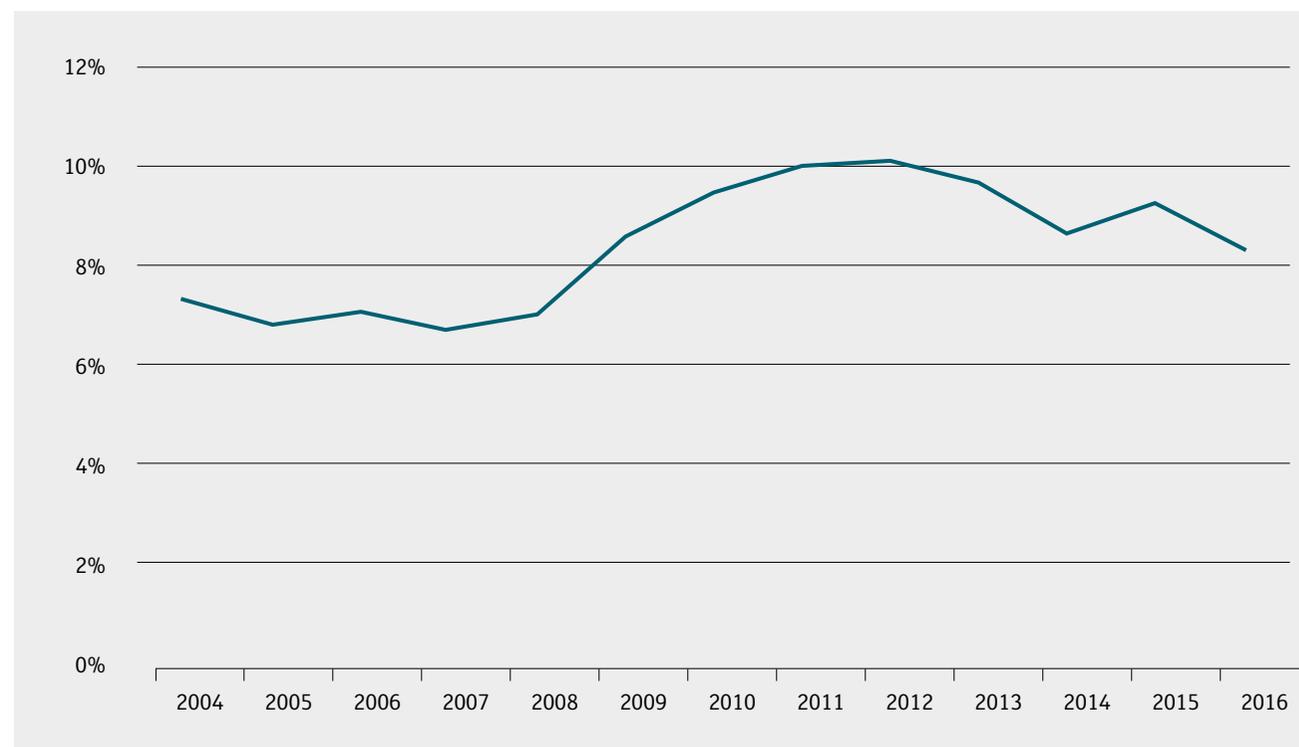
- young people aged 16 to 24 make up a large percentage of the underemployed, with men aged 16 to 24 making up 32% of the total number of male underemployed workers and women aged 16 to 25 making up 26% of the total number of female workers

- those who are self employed are more likely than their employed counterparts to class themselves as underemployed (ONS, 2012). Whilst increases in self employment can be seen on the one hand as a proxy for economic dynamism, it needs to recognise that some individuals become self employed because no other options are available to them. Significant increases in self employment have been a feature of the most recent recession and in part relate to limited opportunities (Bell and Blanchflower, 2013)
- part time workers are more likely to report being underemployed than full time workers at 23% versus 5% respectively and private sector workers are more likely to be underemployed than public sector workers
- the challenges associated with care responsibilities make women more likely to be affected by involuntary underemployment.

7.40 Reducing underemployment is one of the Scottish Government's National Indicators. Underemployment peaked in 2012, when 10% of workers thought that they were underemployed; it has generally declined since, and, despite increasing in 2015, decreased again in 2016 at 8.4%. The rate of underemployment in Scotland remains above pre-recession levels (see Figure 7.15).

Figure 7.15
Proportion of workers underemployed in Scotland, 2004-2016

Source: Scottish Government, Annual Population Survey, 2017



Underutilisation of skills

7.41 To better understand the use that organisations make of the pool of skills at their disposal UKCES (2016) sought to identify the proportion of employers that have employees with both skills and qualifications above the level that they require for the job. In Scotland in 2015, 32% of establishments reported that they had at least one member of staff in this position.

7.42 Focusing on all establishments reporting skill underutilisation amongst their staff, it is interesting to note that the incidence and density varies considerably by sector, occupation, establishment size and region:

- **sector** – the highest incidence of skills underutilisation is reported by establishments in hotels and restaurants (41%), public administration (40%) and education (39%) and the lowest in financial services (26%), construction (26%) and agriculture (20%)

- **occupation** – the top three occupational groups amongst all establishments with underutilised staff are managers (33%), administration and clerical staff (16%) and sales and customer service staff and associate professionals (10%). The lowest incidence is amongst professionals (6%)
- **establishment size** – the incidence of skills underutilisation rises as establishments grow in size from 32% of establishments with two to four employees and 42% of establishments at 250+
- **region** – the incidence of skill underutilisation is highest in Borders (39%), Edinburgh and Lothians (38%) and Glasgow (38%) and lowest in Highlands and Islands (29%), Ayrshire (27%) and Dumfries and Galloway (20%)
- **gender** – most likely as a consequence of care responsibilities and exacerbated by limited child care options, women are left taking on part time roles often characterised by lower skill levels
- **qualifications** – poor skills utilisation is also an issue within the graduate labour market, with individuals taking on jobs below their level of skills.

7.43 The top five reasons why employers believe that employees are working in roles in which they have more skills and qualifications than they need are a combination of personal choice with regards to taking on more skilled roles and working hours and a lack of demand for the level of skills on offer and include:

- a lack of interest in taking on a higher level role (28%)
- a lack of jobs in higher level roles (13%)
- the working hours of their current role suit them better (13%)
- to gain experience to move to a higher level role in same industry (10%)
- a temporary role or stop gap (8%).

Graduate underemployment

7.44 In terms of graduate underemployment, evidence provided to the Scottish Government shows that although those with college and university qualifications are less likely to be unemployed, they often find themselves working in jobs that do not match their qualifications. Evidence also highlighted underemployment leaves young people demoralised in the same way as unemployment, and can lead to difficulty for graduates in finding future employment due to lack of experience in their field of study. There is also a concern that high levels of graduate underemployment has led to some young people suffering from in-work poverty as a result (Scottish Government, 2013).

7.45 This is supported by evidence from Citizens Advice Scotland (CAS). A 2012 survey carried out by them showed that 24.8% of respondents saw themselves as underemployed. This is compared to final quarter 2011 ONS figures which showed 35.9% of those who had graduated in the last six years were employed in “lower skilled jobs” (CAS, 2012).

7.46 Whilst graduates obviously find underemployment frustrating, there are wider consequences for the labour market as a whole. The displacement of graduate employment prospects can have an effect on the labour market and the economy in two ways: employment displacement and skills displacement. The immediate threat to the labour market is as a result of job displacement where graduates fill positions at a lower entry level than they might have expected with their qualifications, which in turn displaces those who would normally fill those roles, thus affecting the employment opportunities of the lower skilled (CAS, 2012).

7.47 Whilst skills underutilisation does not necessarily present a problem for an employer, it represents an untapped potential for growth and a waste of skills investment in an individual whose talents are not being used. There is also the danger that periods of underemployment lead to the degradation of skills, impacting on an individual’s labour market progression and productivity.

7.48 The economic downturn and consequent decline in output led to a reduction in the demand for labour, which has contributed to the increase in underemployment. However there is a risk that the legacy of recession will be an increase in work insecurity over the longer term in relation to increased involuntary part time working and self employment, an increased use of temporary contracts and recruitment agencies.

7.49 Alongside this, the ‘hourglass labour market’ which offers disproportionate opportunities at the top and the bottom of the labour market and fewer opportunities for those in the middle, is forecast to continue. This presents a serious challenge to progression and may exacerbate underemployment and skills underutilisation.

8

Forecasting for
the future

Demand – output growth

- 8.1** Globally, the World Bank (June 2017) expects the strengthening of the world economy in 2017 to continue into 2018/2019, rising from 2.7% to 2.9%. This is principally a result of a recovery in emerging markets and developing economies where growth for 2018/2019 is expected to average 4.6%, rather than in advanced economies where the accelerating growth of 1.9% in 2017 is expected to moderate. Investment in advanced economies has firmed, global manufacturing and trade are up, and there is increasing confidence. At the same time, “risks are tilted to the downside in the medium term” (World Bank 2017), which include increased trade protectionism and economic policy uncertainty.
- 8.2** In Europe, economic growth forecasts have also improved, with steady growth expected. The European Commission (EC) expects that growth in the EU as a whole, which is in the fifth year of recovery, will be 1.9% in 2017 and 1.9% in 2018 (EC, 2017), up from 1.8% in the previous forecasts.
- 8.3** For the UK, there are signs that the UK economy is losing momentum. Growth in the first half of 2017 has slowed from that recorded in 2016, and, for some commentators, this is likely to be a precursor of below par growth for a number of years (Oxford Economics, 2017). Slower consumer spending as a result of higher inflation was a contributory factor. According to the IMF, growth is predicted to be steady in the UK for both 2017 and 2018, although below 2016 levels, slowing from 2% in 2015 to 1.7% in 2017 (IMF, 2017).
- 8.4** The Office for Budget Responsibility (OBR) expects that UK economic growth in 2017 will be better than previously expected, with slower but recovering growth thereafter. The OBR forecasts (March 2017) a rate of GDP growth in the UK of 2% in 2017, 1.6% in 2018, 1.9% in 2019 and 2% to 2020 (OBR, 2017). The OBR forecasts assume that the UK will leave the EU in April 2019. Risks to growth continue to be weighted downside in the short term due to ongoing economic and political uncertainty created by Brexit (PWC, 2017). And for some, growth of 1.5% is expected in 2017 and 1.4% in 2018 (PWC, 2017). As of August 2017, the average for independent forecasts made in the previous three months for 2017 was 1.6%.
- 8.5** The forecast growth for the UK of 1.6% in 2017 and lower growth in 2018 means that the UK’s economic growth will lag behind that of Europe and the rest of the world. Rising inflation and Brexit related uncertainty are likely to restrict the pace of economic development in the short term, and this will curtail job creation (Oxford Economics, 2017).
- 8.6** Economic growth in the UK has been driven primarily by the service sector since the recovery began in 2009, and this continued during 2016 and into 2017. The trends in manufacturing and construction have been erratic since 2009 and output from both sectors declined towards the end of 2016 (PWC, 2016).
- 8.7** The service sector is expected to continue to be the main driver of economic growth in the UK although, overall, the drivers of growth are convoluted, with lower private investment being offset by increases in spending and the weaker pound which has enabled some growth in net trade. The sources of economic growth are also likely to be a little more ‘balanced’ than has been seen in recent years, as a stronger contribution from net trade is accompanied by a slowdown in consumer spending (Oxford Economics, 2017).

Demand – Scotland’s output growth

8.8 The economic outlook for Scotland is inevitably influenced by wider developments in the UK economy. Table 8.1 details the central forecasts by Fraser of Allander (September 2017) on Scotland’s growth which proposes that overall growth from 2017-2019 is forecast as modest with annual increases of 1.2% to 1.7%. In the short term, these are below the UK growth rate forecasts. However, the recent better than expected Q1 growth figures for Scotland of 0.7% are an example of why the Fraser of Allander Institute says “in such uncertain times, we continue to recommend that just as much attention is given to the range of estimates that underpin this outlook as well as our central estimates” (Fraser of Allander, June 2016).

Table 8.1
Scottish GVA growth (percentage)
by sector, 2017-2019

Source: Fraser of Allander Institute forecasts, September 2017 ©

Sector	2017	2018	2019
GVA	1.2	1.4	1.7
Production	1.3	1.6	1.9
Construction	0.7	0.9	1.1
Services	1.2	1.4	1.7

8.9 Oxford Economics forecasts also indicate lower GVA growth rates in Scotland in the short-term, before peaking at 2.1% in 2021, and settling at growth of around 1.5% per annum thereafter (see Table 8.2). These are based on three factors:

- national/regional outlooks – all the forecasting models operated by Oxford Economics are fully consistent with the broader global and national forecasts which are updated on a monthly basis
- historical trends in an area (which implicitly factor in supply side factors impinging on demand), augmented where appropriate by local knowledge and understanding of patterns of economic development
- fundamental economic relationships which interlink the various elements of the outlook.

That said, forecasts are based on current information and may change due to changing circumstances.

Table 8.2
Forecast GVA for Scotland, 2014-2024,
£m, at 2013 constant prices

Source: Oxford Economics

Year	GVA (at constant prices 2013) £m	Change from previous year (%)
2017	127,391.0	1.3
2018	128,878.2	1.2
2019	130,591.0	1.3
2020	132,898.2	1.8
2021	135,589.9	2.0
2022	138,393.2	2.1
2023	141,117.7	2.0
2024	143,623.9	1.8
2025	145,877.4	1.6
2026	148,069.9	1.5
2027	150,322.4	1.5

8.10 The key drivers of the short term outlook for the Scotland and UK are:

- higher inflation squeezing consumers: household budgets are now coming under pressure from rising inflation, government welfare reforms and a loss of momentum from the labour market. Very low savings ratios are likely to translate to a sharp slowdown in consumer spending growth
- uncertainty subduing business investment: business investment faltered badly in 2016. Although the corporate sector continues to enjoy a strong financial position, Brexit-related uncertainty is likely to persist with some firms set to postpone capital spending until the UK's future trading relationship with the EU becomes clearer
- weaker pound giving a boost to net exports: Sterling's depreciation since the referendum vote has helped to improve the competitive position of the UK, making a positive contribution to net trade (Oxford Economics).

8.11 The Scottish GVA forecast growth of 1.3% and 1.2% in 2017 and 2018 respectively is lower than that for the UK. This underperformance in Scotland is expected to continue over the next decade, with Scottish growth averaging 1.7% per year. This means Scotland is likely to be one of the UK's slowest growing areas, albeit on par with the other devolved regions and on a par to parts of the north of England (Oxford Economics, 2017).

Forecast productivity

8.12 As trailed elsewhere in the report, low productivity is a serious issue for the Scottish economy. Table 8.3 on the next page shows the forecast productivity for the period 2017-2027. GVA per worker forecasts by Oxford Economics indicate an increase in productivity following the current period of uncertainty to 1.5% growth in 2019, fluctuating between 1.3% and 1.4% annual growth thereafter.

8.13 Overall, slower GVA growth in Scotland is largely explained by its industrial mix. Scotland's economy is more reliant than the UK on a number of sectors that are expected to grow slower than the overall economy, including the public sector and manufacturing. Further, the recovery of the extraction sector is likely to be slow to gain traction, and the sector as a whole is unlikely to make a significant contribution to GVA growth over the next decade (Oxford Economics, 2017). Alongside this, more dynamic sectors, such as high value business services and digital sectors, are under-represented in Scotland compared with the UK.

8.14 GVA growth in Scotland will still be reliant on private services to support growth over the next decade, with around three quarters of GVA growth provided by this part of the economy (notably from professional, scientific and technical services, wholesale and retail trade, real estate and information and communications sector).

Table 8.3
Forecast productivity for Scotland, 2017-2027,
at 2013 constant prices (£'000s)

Source: Oxford Economics, 2017

Year	Productivity ('000's) (at constant prices 2013)	Change from previous year (%)
2017	46.3	1.4
2018	46.9	1.3
2019	47.6	1.5
2020	48.3	1.4
2021	49.0	1.3
2022	49.6	1.4
2023	50.3	1.3
2024	51.0	1.4
2025	51.7	1.3
2026	52.4	1.3
2027	53.0	1.3

Employment forecasts

8.15 The Fraser of Allander Institute provides short-term forecasts for jobs for the period 2017-2019, see Table 8.4.

8.16 These forecasts are lower than pre-EU referendum forecasts, although they continue to be revised upwards. This partly reflects short-term uncertainty connected with the result and its implications. As we discussed earlier in the report, Scotland level jobs forecasts have been affected by the downturn in the oil and gas sector, although output in the last quarter of 2016 show that all of Scotland's principal manufacturing sectors have been affected.

Table 8.4
Forecast change in employee jobs in Scotland,
2017-2019

Source: Fraser of Allander Institute Forecasts, June 2016 ©

Indicator	2017	2018	2019
Employee jobs	2,448,600	2,481,900	2,523,700
% employment growth over the year	+0.8	+1.4	+1.7

Total employment forecasts

8.17 The latest Oxford Economics (2017) forecasts indicate there will be a net increase in total employment in Scotland from 2,748,900 in 2017 to 2,833,800 in 2027; an increase of 84,900, representing a 3% increase over the period.

8.18 The forecasts predict further jobs losses in Scotland through 2017, 2018 and 2019 (-0.1% in each year) in line with short-term economic growth prospects, and partly a result of continuing challenges expected for the oil and gas sector and the associated supply chain (see Table 8.5). This is likely to be accompanied by an increase in unemployment (Oxford Economics, 2017). The forecasts thereafter anticipate steady (if limited) annual growth from 2020 onwards, just slightly below the rate of UK jobs growth.

Forecast employment change by industry

8.19 Figure 8.1 on the next page illustrates the forecast change in employment by industry between 2017 and 2027. It shows the greatest absolute anticipated employment growth over the period being in administration and support services (29,800), professional, scientific and technical activities (26,400) and construction (23,200). Overall, employment is forecast to grow in 11 sectors.

8.20 That said, employment is predicted to decrease in eight sectors – the largest being manufacturing (-23,400) and with notable losses forecast in public administration and defence (-13,400) and mining and quarrying (-7,900), reflecting ongoing challenges to public sector budgets and in the oil and gas sector respectively.

Table 8.5

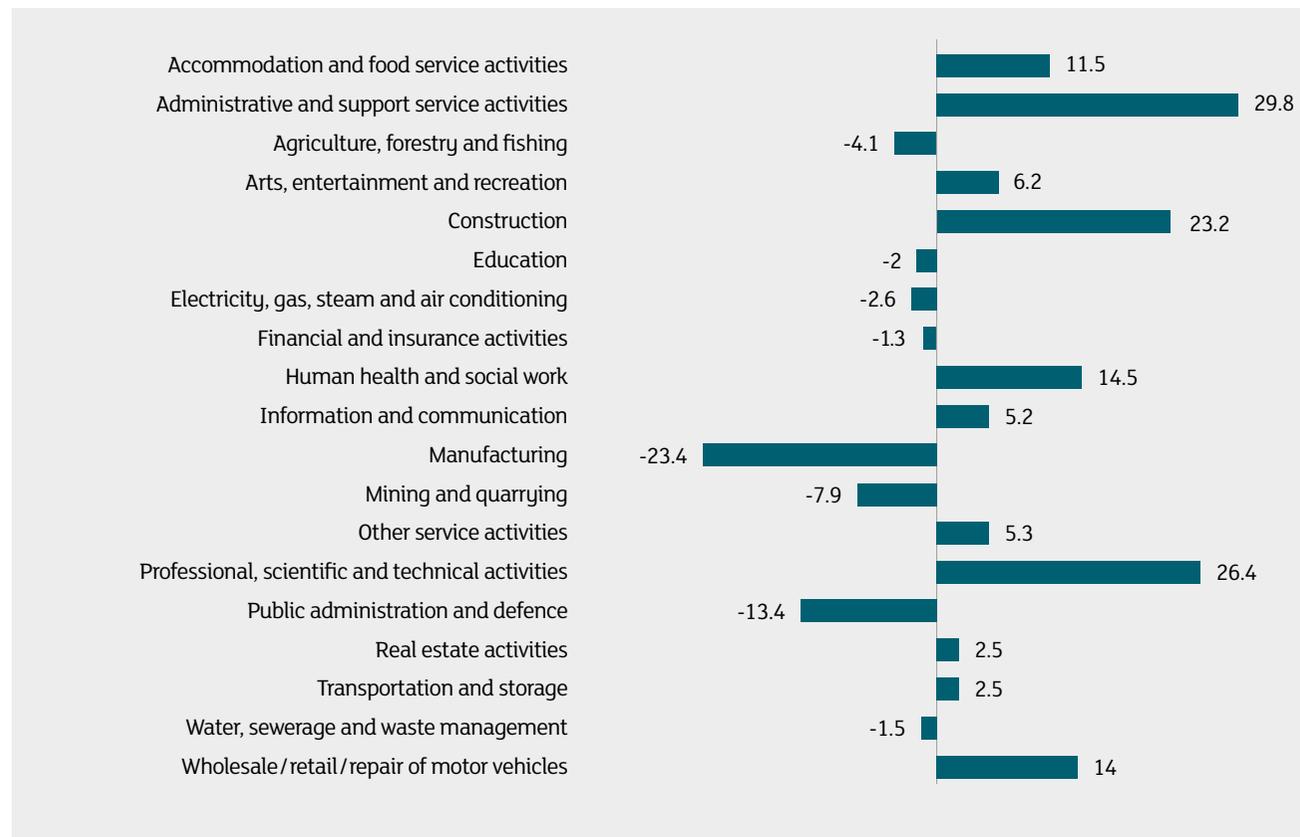
Forecast change in total workforce jobs in Scotland, 2017-2027

Source: Oxford Economics, 2017

Year	Total employment	Change from previous year (%)
2017	2,748,900	-0.1
2018	2,745,200	-0.1
2019	2,741,600	-0.1
2020	2,750,300	0.3
2021	2,768,800	0.7
2022	2,788,200	0.7
2023	2,805,400	0.6
2024	2,817,000	0.4
2025	2,823,400	0.2
2026	2,828,400	0.2
2027	2,833,800	0.2

Figure 8.1
Net change in employment by industry
in Scotland, 2017-2027 (000's)

Source: Oxford Economics, 2017



8.21 Overall, there is forecast to be a notable further shift towards private services jobs. Administrative and support services and professional, scientific and technical services are forecast to grow on average by more than 1% per year. Wholesale and retail trade, the second largest sector for jobs in Scotland, behind health and social work will also grow, albeit modestly, adding 14,000 net new jobs. Most other private service industries are forecast to achieve employment growth above the total economy average over the next decade.

8.22 The pressures on public sector finances is reflected in the forecasts, with job losses expected in public administration and defence and in education, although there is forecast to be a need for net new jobs in human health and social work activities. The notable job losses in manufacturing reflect the long term and well-established shift towards higher value production methods and innovation (Oxford Economics, 2017).

Key sector forecasts

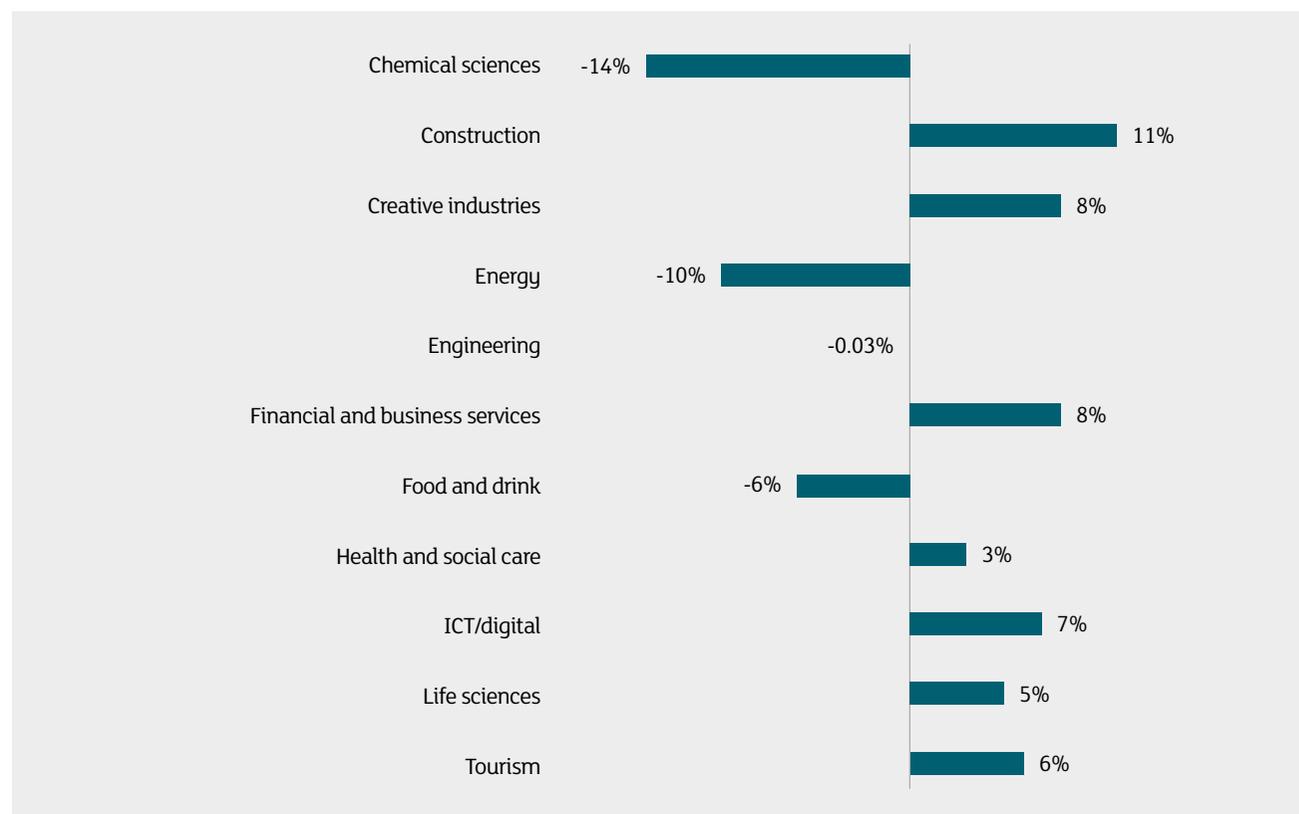
8.23 Forecasts are also available for the key sectors. Figure 8.2 shows the forecast change in employment for the key sectors, between 2017 and 2027.

8.24 The greatest proportionate increase in employment over the period is forecast for construction (11%), followed by creative industries and financial and business services (8% each), see Figure 8.2. Overall, employment in seven of the 12 key sectors is forecast to increase over the period. Employment is forecast to decline by 14% in the chemical sciences sector, by 10% in the energy sector, and by 6% in the food and drink sector.

8.25 In absolute terms, jobs growth is highest in construction (31,700). Although a significant level of jobs growth it should be seen in the context of a loss of more than 40,000 following the global financial crisis. Despite recovering a little since then, the forecast increase in construction jobs over the period to 2027 simply returns employment in the sector to pre-financial crisis 2007 levels (Oxford Economics, 2017). Jobs growth is also expected in tourism (22,900). The largest absolute decrease is forecast for energy (7,700).

Figure 8.2
Net change in employment by key sector in Scotland, 2017-2027 (percentage change)

Source: Oxford Economics, 2017



8.26 The employment sub-sectors forecast to experience the largest increase in jobs are detailed in Table 8.6. There are forecast to be 12,900 more jobs within the specialised construction activities, with an additional 12,600 jobs within the services to buildings and landscape sector by 2027.

Table 8.6
Forecast fastest growing employment sub-sectors (2 digit SIC), 2017-2027

Source: Oxford Economics, 2017

Sub-sector	Net employment change 2017-2027	Percentage change 2017-2027
Specialised construction activities	12,900	13%
Services to buildings and landscape	12,600	14%
Architectural and engineering	9,900	14%
Human health activities	8,700	4%
Retail trade (except motor vehicles)	8,400	3%
Food and beverage service activities	8,100	6%
Construction of buildings	7,700	15%
Employment activities	6,600	16%
Office administrative, office support	6,200	15%
Activities of head offices	5,600	16%
Legal and accounting activities	5,300	11%

8.27 Table 8.7 shows the sub-sectors where employment is forecast to fall by more than 2,000 jobs by 2027. The greatest of these reductions is in public administration and defence, where employment is forecast to decrease by 9% across Scotland – over 13,000 jobs. There are significant further job losses expected in specific oil and gas sub-sectors, the most substantial of which is crude petroleum extraction, which is forecast to contract by 3,600 jobs, over one-quarter of the workforce.

Table 8.7
Forecast reduction in employment sub-sectors
(2 digit SIC), 2017-2027

Source: Oxford Economics, 2017

Sub-sector	Net employment change 2015-2024	Percentage change 2015-2024
Public administration and defence	-13,400	-9%
Extraction of crude petroleum	-3,600	-27%
Mining support service activities	-3,500	-23%
Crop and animal production	-3,300	-7%
Manufacture of fabricated metal	-3,000	-15%
Electricity, gas, steam and air con	-2,600	-12%
Manufacture of machinery and equipment	-2,200	-14%
Education	-2,000	-1%
Manufacture of computers, electronics	-2,000	-17%

Regions

8.28 Future jobs growth is expected to be driven by the cities of Edinburgh and Glasgow. Between them, these two RSA regions are expected to account for 85% of the net additional jobs in Scotland to 2027. The 39,600 extra jobs in Edinburgh and Lothians represents a 9% increase; the 32,400 in Glasgow a 7% increase (see Table 8.8). Their industrial mix means they are also best placed to create jobs over the period to 2027 (Oxford Economics, 2017).

8.29 At the same time, rural areas are expected to have fewer jobs in 2027, including Highlands and Islands, Dumfries and Galloway and Borders. There are also forecast to be fewer jobs in Ayrshire by 2027. The weakest outlook tends to be in areas with the lowest representation of professional, scientific and technical services and administrative and support services, and high exposure to public sector employment and traditional manufacturing (Oxford Economics, 2017).

Table 8.8
Net forecast change in employment by region, 2017-2027

Source: Oxford Economics, 2017

Region	2017	2027	Change	% Change
Aberdeen City and Shire	310,000	310,600	600	0.2%
Ayrshire	142,800	141,500	-1,300	-0.9%
Borders	50,700	50,300	-400	-1%
Dumfries and Galloway	69,700	67,600	-2,100	-3%
Edinburgh and Lothians	424,300	463,800	39,600	9%
Fife	150,300	152,200	1,900	1%
Forth Valley	140,800	145,200	4,300	3%
Glasgow	488,200	520,600	32,400	7%
Highlands and Islands	261,400	260,900	-500	-0.2%
Lanarkshire	307,100	312,400	5,300	2%
Tayside	200,000	201,800	1,800	1%
West	174,800	176,000	1,200	1%
West Lothian	84,900	89,000	4,100	5%

Forecast employment by occupation

8.30 There is forecast to be an increase in skilled occupations, most notably in the professional occupations, with an additional 15,700 people in employment by 2027. At the other end of the skills spectrum, there are forecast to be 10,300 more people in elementary occupations by 2027, a 4% increase. The other significant growth occupation is caring, leisure and other service occupations, forecast to increase by 7,400 jobs by 2027 (see Table 8.9).

8.31 The increase in elementary occupations is entirely in clerical and service occupations, rather than plant and trade, reflecting the forecast growth in professional and support business services. The occupational profile will continue to shift towards roles most closely aligned to the growth sectors (Oxford Economics, 2017), and changes in the types of work within sectors, such as increased demand for IT-based roles.

Table 8.9
Net forecast change by occupation (people),
2017-2027 ('000's)

Source: Oxford Economics, 2017

Occupation	2017	2027	Change	% Change
SOC 1 - Managers, directors and senior officials	223.2	227.5	4.3	2%
SOC 2 - Professional occupations	530.9	546.6	15.7	3%
SOC 3 - Associate professional and technical occupations	339.7	347.1	7.4	2%
SOC 4 - Administrative and secretarial occupations	263.5	263.2	-0.3	-0.1%
SOC 5 - Skilled trades occupations	277.7	283.0	5.3	2%
SOC 6 - Caring, leisure and other service occupations	246.4	256.6	10.1	4%
SOC 7 - Sales and customer service occupations	228.8	235.0	6.2	3%
SOC 8 - Process, plant and machine operatives	160.8	157.7	-3.1	-2%
SOC 9- Elementary Occupations	289.0	299.3	10.3	4%

8.32 Overall, between 2017 and 2027 there is forecast to be a 7% increase in those in higher level occupations (SOC 1-3), a 6% increase in middle level occupations (SOC 4-6) and a 4% increase in lower level occupations (SOC 7-9). Overall, the ‘inverted triangle’ occupational structure currently in place (where the largest proportion are employed in SOC 1-3 and the lowest proportion are in SOC 7-9), will remain over the period to 2027. In all, 43% are forecast to be employed in SOC 1-3 in 2027, 31% in SOC 4-6 and 27% in SOC 7-9, as is the case in 2017.

Expansion demand and replacement demand

8.33 When assessing future labour market demand, it is important to distinguish between:

- expansion demand i.e. the increase in jobs as a result of growth in the economy
- replacement demand i.e. jobs generated by replacing those people who retire, change occupations or move away.

8.34 Table 8.10 shows the expansion and replacement demand expected for people over the period from 2017-2027 by occupation, as well as the total requirement.

Table 8.10
Expansion and replacement demand by occupation, people ('000s), 2017-2027

Source: Oxford Economics, 2017

Standard Occupation	Expansion demand	Replacement demand	Total requirement
Managers, directors and senior officials	4.3	50.1	54.3
Professional occupations	15.7	239.2	254.9
Associate professional and technical occupations	7.4	83.1	90.5
Administrative and secretarial occupations	-0.3	81.1	80.8
Skilled trades occupations	5.3	84.4	89.7
Caring, leisure and other service occupations	10.1	65.1	75.2
Sales and customer service occupations	6.2	114.9	121.1
Process, plant and machine operatives	-3.1	38.8	35.8
Elementary occupations	10.3	186.9	197.2
Total	56.0	943.6	999.6

8.35 For all occupational groups, replacement demand substantially outstrips expansion demand. This reflects that there is relatively modest new jobs growth forecast for Scotland. The much higher replacement demand also reflects an ageing workforce and that workers leave the workforce for a number of reasons, including retirement. Openings will be most numerous in those roles that tend to experience high labour turnover and rising employment (Oxford Economics, 2017).

8.36 Total requirement is greatest for professional occupations (254,900) and for elementary occupations (197,200), both of which are primarily driven by replacement demand. For expansion demand, professional, caring, leisure and other service occupations and elementary occupations comprise the majority of new jobs.

8.37 Replacement demand is strong for all occupational groups, even where there is not expected to be overall jobs growth. For example, process, plant and machine operatives jobs are forecast to fall by 3,100, yet replacement demand will create some 38,800 openings.

8.38 Graduate jobs (SOC 1-3) account for 40% of all jobs, covering both expansion and replacement demand over the period 2017-2027, a proportion that continues to rise. This means:

“a rebalancing of the occupational structure of the economy towards higher skilled occupations. This is a continuation of a long term trend within the UK and other industrialised nations and is consistent with interpretations of polarisation in the UK’s skills structure, with increased demand for high and low level skills, combined with a net decline in occupations requiring intermediate skills, such as administrative and secretarial, skilled trades and operatives.”

(SQW in Fraser of Allander, 2015: 120-121)

8.39 There are differences in the future occupational requirements by sector over the 2017-2027 period. These shifts include:

- strong future demand for professional occupations (SOC1-3) in professional, scientific and technical sector activities (+16,300), human health and social work (+14,000), construction (+6,900), information and communications (+4,200)
- intermediate level occupation demand (SOC 4-6) in construction (+14,300) notably in skilled trades; but also in human health and social work (+5,200), professional, scientific and technical activities (+4,800) and the arts, entertainment and recreation sector (+4,300)
- strong future demand for lower skilled occupations (SOC 7-9) in administration and support services (+14,500), wholesale and retail (+10,500) and in accommodation and food services (+7,200). These sectors in particular may in the past have been more reliant on seasonal and temporary workers, including EU migrants.

Forecast demand by qualification

8.40 With the changing occupational structure, this will have implications for demand for qualified individuals to fill these posts. Forecasts are available by qualification up to 2027.

8.41 Table 8.11 shows the expansion and replacement demand by qualification, along with the total requirement forecast over the period 2017-2027.

8.42 There is forecast to be an increased demand for jobs at all levels – particularly at SCQF Level 7 and above, indicating that, in future, a greater number of job openings will require higher levels of qualifications. In all, 53% of jobs will require SCQF Level 7 qualifications and above. Jobs at SCQF Level 7 and above will continue to comprise an increasing proportion of all jobs. Two-thirds of all jobs will be SCQF Level 6 and above.

Table 8.11
Expansion and replacement demand by qualification, people ('000s), 2017-2027

Source: Oxford Economics, 2017

Qualification level (or equivalent)	Type of qualification	Expansion demand	Replacement demand	Total requirement
SCQF 11-12	Doctoral or postgraduate degree	12.5	50.2	62.7
SCQF 7-10	HNC to Honours degree	46.2	418.4	464.6
SCQF 6	Higher level	-5.9	137.0	131.1
SCQF 5	National 5	8.6	214.9	223.6
SCQF 1-4	National 1 to National 4	-8.1	47.8	39.7
No qualifications		2.6	75.2	77.8
Total		56.0	943.6	999.6

8.43 As would be expected, professional and related occupations are more likely to require higher qualification levels. However, occupations such as caring, leisure and other services will require increasingly large numbers with higher qualifications (45% will require SCQF Level 7 and above). There is also forecast to be a strong shift within sales and customer service occupations to a more qualified workforce at SCQF Level 7 and above. Even the vast majority of future elementary occupations will require SCQF Level 5 and above.

Gender and employment status

8.44 Table 8.12 shows that employment is set to increase for both genders by 2027 – with the increase higher at 5% for females and lower at 1% for males.

8.45 Table 8.13 shows that both full time and part time employment are forecast to increase. The rate of increase in full time jobs is set to be equal to the rate of part time jobs growth. This is a change, given that more of the recent employment growth has been in part time jobs.

8.46 The forecasts by gender and employment status show the ongoing shift from male full time employment to part time employment, largely a result of the continuing reduction in the number of jobs in traditional male dominated sectors, notably manufacturing. There is forecast to be a considerable increase in female full time employment (see Table 8.14).

Table 8.12
Projected change in employment ('000s), 2017-2027, by gender

Source: Oxford Economics, 2017

	2017	2027	Change	% Change
Male employment	1,434.2	1,443.3	9.1	1%
Female employment	1,314.7	1,390.5	75.7	5%

Table 8.13
Projected change in employment ('000s), 2017-2027, by employment status

Source: Oxford Economics, 2017

	2017	2027	Change	% Change
Full time employment	1,865.9	1,922.9	57.0	3%
Part time employment	883.1	910.9	27.8	3%

Table 8.14
Projected change in employment ('000s), 2017-2027, by gender and employment status

Source: Oxford Economics, 2017

	2017	2027	Change	% Change
Male full time employment	1,191.6	1,196.9	5.3	0.4%
Male part time employment	242.6	246.4	3.8	2%
Female full time employment	674.2	726.0	51.7	8%
Female part time employment	640.5	664.5	24.0	4%

Change in forecasts since 2012

8.47 Overall the new 2017 forecasts show slower jobs growth than was forecast in 2012 for the period 2014-2024. For example, the greatest jobs growth in the 2017 forecasts is for administration and support services (29,800) compared to the 2012 forecast for the sector (of c. 50,000). Professional, scientific and technical services growth (of 26,500) is lower than the 2012 forecasts (of c. 40,000). This reflects the slowdown in economic performance.

8.48 There are some relative sector shifts, however, including:

- **sectors where forecast jobs have increased in the 2017 forecasts for 2017-2027 compared to the 2012 forecasts for 2014-2024.**

There has been a strong upturn in the construction sector forecast (23,200) compared to very little forecast jobs growth forecast for the sector back in 2012 as the construction sector continues to replace jobs lost pre-financial crisis

- **sectors where there has been a strong downwards revision of job increases.** This includes the health and social work sector, from c. 30,000 in the 2012 forecasts to 14,500 in the 2017 forecasts

- **sectors where previous forecast increases in jobs remain broadly in place.**

This includes arts and entertainment. Given that the 2017 forecasts project lower job increases overall, this sector now represents a larger share of projected job increases

- **sectors where previous growth is now forecast to decline.** This includes public administration (2012 forecasts of 2,000) to most recent forecasts of -13,400, reflecting the pressure on public finances
- **sectors where the forecast fall in jobs is now more pronounced.** This includes manufacturing (-23,400 compared to -10,000 in the 2012 forecasts) and mining and quarrying (-7,900 compared to little change in the 2012 forecasts).

8.49 Taken together, these changes serve to highlight the shifting nature of the jobs market in Scotland. As trailed previously, this reflects that private sector service growth is forecast to be the driver of future jobs growth.

8.50 Table 8.15 shows the expansion and replacement demand for jobs expected over the period from 2017-2027 by sector, as well as the total requirement. This illustrates the challenges a number of key sectors face in meeting future demand for jobs, especially in meeting replacement demand.

8.51 There are particular challenges facing the tourism and health and social care sectors in meeting replacement demand, both requiring more than 100,000 replacement jobs over the period 2017-2027. However, significant challenges also face the construction and food and drink sectors in meeting future sector needs.

Table 8.15
Expansion and replacement demand by key sector, jobs ('000s), 2017-2027

Source: Oxford Economics, 2017

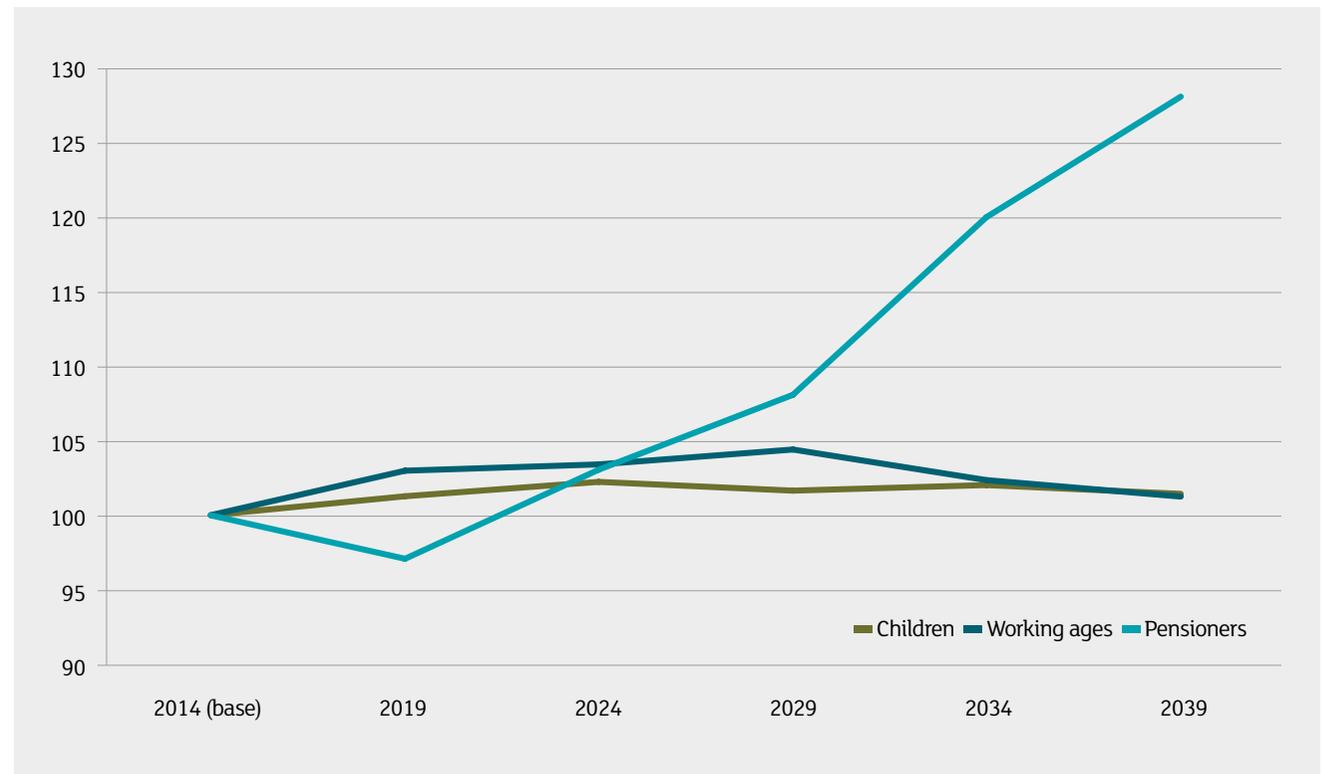
Key sector	Expansion demand	Replacement demand	Total requirement
Chemical sciences	-1.2	2.0	0.7
Creative industries	6.6	13.9	21.0
Construction	24.1	58.5	84.8
Energy	-7.0	19.4	11.6
Engineering	0.2	18.1	18.0
Food and drink	-5.7	53.3	46.7
Financial and business services	17.9	29.0	48.4
Health and social care	13.1	112.1	126.6
ICT/digital	4.0	3.0	7.2
Life sciences	0.9	1.5	2.5
Tourism	12.4	120.5	133.9
Total	65.3	431.2	501.4

Supply – population projections

8.52 The population of Scotland is expected to increase to 5,701,000 by 2039, representing a 7% increase on 2014. There is a slightly higher increase expected amongst males. This increase is largely driven by net in-migration (which is predicted to remain constant over the next 20 years or so) with a small natural change component to 2028. The number of children and those of working ages is expected to remain largely constant according to the 2014-based projections. However, there is a projected decline in the 16-29 and 45-59 age groups, with those aged 75+ expected to almost double to 2039. A 28% increase in pensioners is expected (as Figure 8.3 illustrates).

Figure 8.3
Projected age group population change (indexed), 2014-2039

Source: NRS, 2016

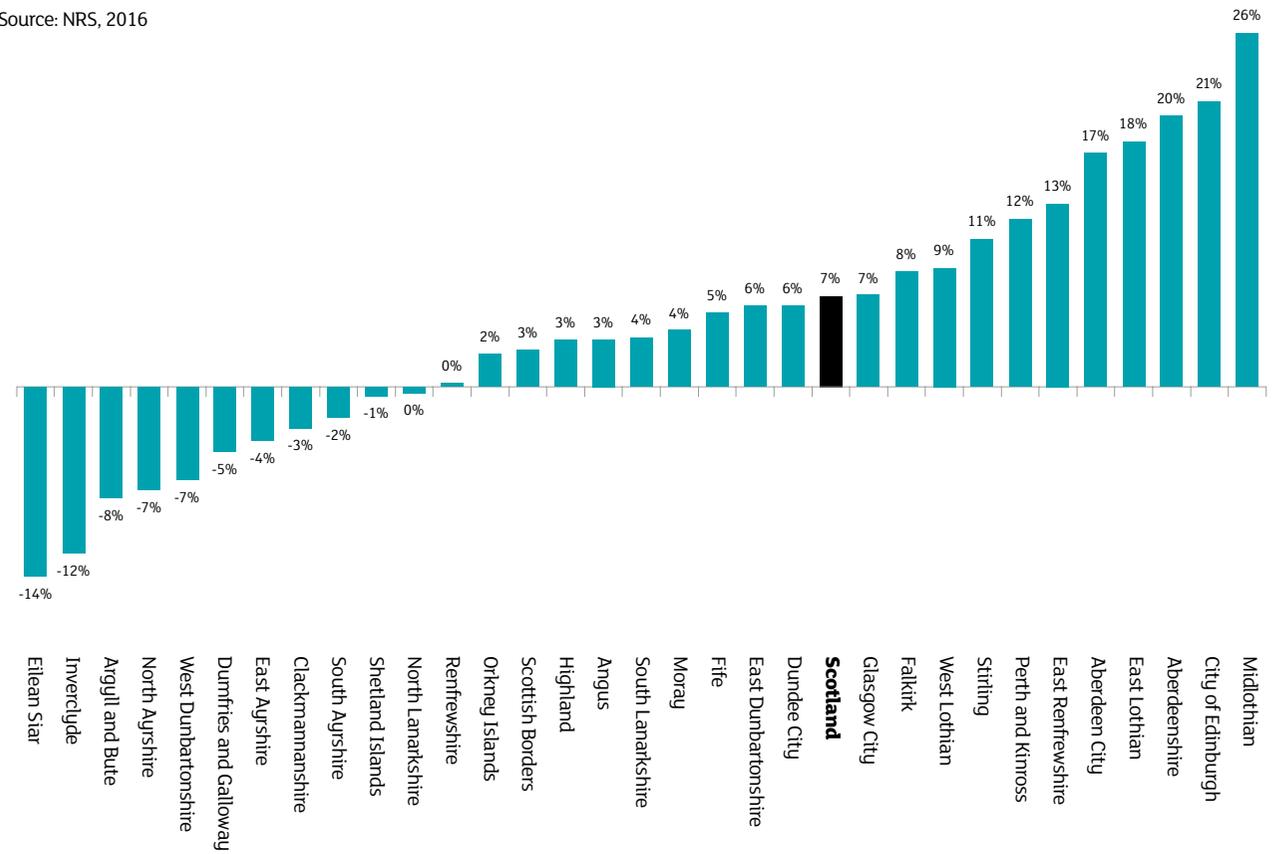


Sub-national projections (2014 based)

8.53 From the 2014-based sub-national population projections (see Figure 8.4), there is considerable variation at a local level. Growth is generally predicted in the cities of Aberdeen, Stirling and Dundee and in Edinburgh and the surrounding area, with decline in some western rural areas, and in former industrial areas such as Lanarkshire and Ayrshire. The highest growth by 2039 is projected in Midlothian (26%), Edinburgh (21%) and Aberdeenshire (20%). Conversely, the greatest decline is expected in the Western Isles (-14%), and Inverclyde (-12%).

Figure 8.4
Projected population, 2014-2039, Scotland

Source: NRS, 2016



- 8.54** Population growth will be driven by increases in the older age groups. Some regions with a growing population will experience increases across all age groups, whilst some other regions that are forecast population decline will experience growth in older age groups but losses in the younger/working age groups. Migration from Europe to Scotland could ease the population decline of people who are of working age that is expected, however the UK's decision to leave the EU could affect this. Depending on arrangements:
- it could become more challenging for migrants not already in the UK to access the UK labour market
 - it could also add to the loss of working age people depending on arrangements for EU nationals already living and working in the UK.
- 8.55** UK citizens that live in other EU countries may have to return to the UK, change citizenship or move to an alternative country. The last census in 2011 found that almost one third (31%) of the c. 900,000¹⁰ UK citizens living in other EU countries in were aged 30-49. A further 10% were aged 15-29 years. People of this age could return to the UK and enter the labour market (ONS, 2017).

The changing nature of jobs and work

- 8.56** In the 2015 UKCES Employer Skills survey, UKCES highlight that the nature of work is continuously and rapidly changing, with new developments in technology and digitalisation changing the skill requirements of the workforce. An increase in the digitalisation of work especially is demanding that staff are able to work flexibly and adapt to technology. As a result, jobs are becoming increasingly complex and employees are expected to do more in their roles by their employers (UKCES, 2016).
- 8.57** In the context of this increasing use of technology, especially digital technology, in the workplace, the 2015 Employer Skills Survey highlights the challenge this causes for employers. The survey identifies a lack of complex analytical skills among both applicants and existing staff. This is important considering such skills are extremely important as technology advances, with innovation and adapting to changing technology key to growth in organisations. Similarly, between 20% and 40% of employees who are deemed not fully proficient in their roles have a lack of basic IT skills. This is especially important to consider with the context of the increasing digitalisation of work and need for such skills (UKCES, 2016).

- 8.58** UKCES also look at future challenges and opportunities in the labour market and the implications for jobs and skills in their “The Future of Work: Jobs and Skills in 2030” report. The main focus of the report is on possible future trends in jobs and skills but also possible challenges or “disruptions” which could affect jobs and skills in the future. Those which UKCES identify relate broadly to the changing nature of work, most notably in technology and innovation, but also in terms of societal changes and changes in work place cultures (UKCES, 2014).

¹⁰ The 2011 census data is considered the most robust and allows analysis of UK citizens by age and location. In 2015, the United Nations estimated that the number of UK born migrants living in other EU member states was approximately 1.2million. This data is not as robust as the census and does not provide information on resident age.

Technology and innovation

8.59 In terms of technology and innovation, potential trends and challenges identified by UKCES include:

- converging technologies and cross-disciplinary skills, such as the increasing use of digital technology like bioinformatics in sectors such as Life Sciences
- digitalisation of production, meaning production no longer has to be factory centralised. This de-centralisation of production could lead to increases in employment by 100,000 to 200,000 by 2023
- ICT Development and “big data”, with ICT development characterised by performance increases. The amount of data produced by the digital economy is ever increasing and the analysis of this data has the potential to contribute to increased business efficiency
- Artificial Intelligence and robots, which is contributing to an increase in automation in processes and services, including very high level tasks usually reserved for humans with expertise. This increasing automation, especially in professional tasks, could dramatically reshape the labour market in the future.

8.60 These challenges are increasingly recognised. The digital revolution is changing the future of work (Olly Newton, Edge Foundation, 2017). Research on the US economy suggests that 47% of total employment is at risk over the next two decades (Benedikt Frey and Osborne, 2013), affecting both routine and middle income jobs, many currently filled by graduates with non-technical degrees. This would mean 15 million jobs are at risk in the UK (Bank of England, 2015).

8.61 The pace of change in technology means that even with the best available information we cannot predict and prepare for all of these changes (Olly Newton, Edge Foundation 2017). Rather, Newton argues, we need to give young people the metaskills to adapt and thrive in new work environments that we may not even have imagined. Newton says that “skills like leadership, resilience and self-development are taught as much outside the classroom as within it”, and that as well as challenges, the technological changes bring huge opportunities. In terms of skills, some of these opportunities can be predicted and prepared for – the growth of renewable energy, the expansion of e-commerce and Artificial Intelligence. Today it is more important for young people to be fluent in a programming language than a foreign language (Olly Newton, Edge Foundation 2017).

Societal changes and changes in workplace cultures

8.62 In terms of societal change and changes in workplace culture, potential trends and challenges identified by UKCES include:

- desire for an increased work/life balance and changing work environments, potentially leading to a further increase in flexible working arrangements, with already 57% of employees saying flexible working is important to them
- changing demographics, which projects a continuously ageing population (42% growth in over 65s in the UK in the period to 2030), leading to workplaces becoming increasingly multi-generational
- growing diversity, such as women being projected to take two thirds of net job growth in the next decade and an increase in multiculturalism in the workplace
- growth in zero hours contracts and income uncertainty, with income not expected to return to peak (2009) levels until the next decade and inequality in income, with the proportion of national income accounted for by the highest 0.1% of earners increasing from 5% to 14% by 2030, if trends continue.

8.63 Whilst the flexible labour market has enabled many workers to find suitable work when full time jobs may not have been possible, the flexibility in the labour market has given rise to some notable inequalities (Campbell Robb, Joseph Rowntree Foundation, 2017). Robb cites in-work poverty as an example, and Scottish Centre for Employment (SCER) analyses of the Labour Force Survey shows that older workers, those with fewer skills and qualifications, part timers and temporary workers are often disadvantaged when it comes to work-related training. Robb states that this is “frustrating for many workers stuck in low paid roles, whose training tends to focus on their existing role rather than on imparting skills that might help them to get on.”

8.64 Although Robb highlights that many employers are convinced of the business benefits of offering progression routes to lower paid workers, he cites that many can run competitive businesses based on “low wages, few training opportunities and high staff turnover.” This, he argues, is because they can, as a result of a plentiful labour supply amongst those seeking part time work, with policies pushing previously inactive people into employment and migration.

8.65 For Robb, a key challenge remains: to drive up employer demand for higher skills and commitment to developing lower-paid, lower-skilled workers. This can be done partly at employer and sector levels, by making the business case for better employment and management practices and reducing barriers to progression (Robb 2017). He says integrating local skills plans with economic development, innovation and business support strategies can also generate more opportunities to shape demand for skills. He argues Scotland should take a ‘test and learn’ approach involving government, training providers and employers in key sectors such as retail, hospitality, care and tourism and key places including city-region and growth deal areas.

8.66 Both sets of trends and challenges – technology and innovation and societal change and changing work practices – present projections as to how the labour market could look in the future. In regards to technology and innovation especially, this fourth ‘industrial revolution’ – Industry 4.0 – will make the continuous adaptation of skill sets absolutely fundamental for successful participation in the labour market.

The impact of Brexit

8.67 It is also appropriate to cite here the potential impact of Brexit and the effect this may have on jobs and work. The demand-side analysis of jobs and GVA growth forecasts have already referenced to the likely connection between the political uncertainties created by Brexit and the current economic slowdown. There may be wider and longer-term implications too, for example employer recruitment and investment decisions, should the free movement of EU labour cease to be in place.

8.68 Some believe Brexit will cause serious economic damage, particularly if it involves Scotland and the UK leaving the single market and the customs union (Muscatelli, 2017). Commentators such as Muscatelli believe “a significant element of this negative impact will come through a potential reduction of Scotland’s supply of labour and skills causing important skills shortages” (also Newton, 2017). It is clear that a number of sectors in Scotland have benefited from EU inward migration: more than 30,000 EU citizens are employed in the distribution, hotels and restaurants sector, with 12,000 EU migrants employed in health and social work. EU citizens also satisfy seasonal work patterns in agriculture (Scottish Parliament, 2017).

8.69 Muscatelli also cites there could also be very significant skills gaps in graduate skills as many of the key courses in Scottish Higher Education in Science, Technology, Engineering and Mathematics (STEM) subjects (especially Computing Science, Engineering and Mathematics) are currently taken up by EU students. He argues, as a result, skills shortages could quickly emerge in high-innovation sectors vital to Scotland’s economic future. These range from sectors employing new digital technologies such as bioinformatics, fintech, and the creative sectors, to sectors involving advanced manufacturing in areas like nanoelectronics and quantum technologies. Muscatelli states there are no easy answers to a Brexit shock which reduces inward migration and so the labour supply to Scotland: “But if free movement from the EU is curtailed, developing a shared understanding of the consequent economic impact, is critical if we are to face the challenge.”

Productivity

8.70 There are clearly changes in the nature of jobs and work. What is also clear from the analysis is that boosting Scotland’s productivity is vital for its long-term economic prosperity (Fraser of Allander, 2017). For many commentators, such as Graeme Roy, Director of the Fraser of Allander Institute, closing this gap in ‘output per hour worked’, which is still 15% below the G7 average, “is central to our efforts to deliver faster economic growth and to improve living standards.”

8.71 Graeme Roy believes “without question, equipping today’s workforce – and that of the future – with the right skills is crucial to ensuring improvements in productivity, particularly in a world of increased automation and ever faster technological progress.” For Roy, understanding programme and policies, alongside better data collection and measurement, and greater openness to innovate in public policy are required to understand what interventions work best in practice and how synergies can be better exploited.

9

Concluding
remarks

- 9.1** There continues to be ongoing political and economic uncertainties in the UK and globally, and this makes planning for future jobs and skills requirements more challenging. That said, many of the immediate concerns around the negative impact of the UK's decision to leave the EU in June 2016 have not materialised. The UK economy has remained resilient despite the widespread uncertainty, although it continues to be these uncertainties that are dampening UK and Scotland economic growth prospects.
- 9.2** Notwithstanding the short-term uncertainties, and the negative effects of the downturn in the oil and gas sector, there are some fundamental challenges facing the Scottish economy. The productivity of the UK compared to other advanced economies is poor and understanding and solving the 'productivity puzzle' remains a major challenge. Whilst jobs have remained resilient in the UK, with rising employment and falling unemployment, this has come alongside low productivity growth and a drop in real wages. There is a serious issue of job quality that needs to be addressed.
- 9.3** Compared to the UK, which is a low benchmark by global standards, Scotland has had stronger recent productivity growth. This has narrowed the gap between the productivity of Scotland and the UK as a whole, yet overall productivity in Scotland remains behind that of the UK and other advanced economies. The declining working age population of Scotland will make it increasingly difficult to boost productivity by increasing the number of people in work.
- 9.4** If Scotland is to boost productivity it will have to use technology and innovation improvements. This will have cost implications, with a need to invest in research and development. There will also be implications for skills, with a need for entrepreneurship and leadership skills to develop and realise solutions. The Workforce Development Fund that was recently launched could contribute to this and present an opportunity to further develop a Scottish, employer led response to the productivity puzzle.
- 9.5** This report has highlighted economic and labour market variations by region. Although it is no surprise that Scotland's city regions have the largest economies, there is evidence that through the recovery there has been both urban and rural economic growth. That said, there are considerable disparities between regions, and employment in the majority of rural areas has not reached pre-recession levels, falling recently in a number of regions. Pockets of weak wages growth are apparent. The Scottish Government's Economic Strategy has four priorities, one of which is to promote inclusive growth, and this emphasis will need to continue in order to reduce regional differences. Further information on Scotland's regions is available in the Regional Skills Assessments, which are accessible on the SDS website.¹¹

¹¹ www.skillsdevelopmentscotland.co.uk/what-we-do/partnerships/regional-skills-assessments

- 9.6** Although employment in Scotland has increased by 0.2% since 2008 there was a fall in the number of jobs in 2016 at a time of continued jobs growth across the UK. This is a worrying development, even allowing for the challenges facing the oil and gas sector. Employment growth in the recovery had been driven by the private sector, with growth too in the health sector which is forecast to continue as the population ages. There has been strong growth in the accommodation and food services sector employment, linked to tourism growth. The construction sector is also forecast to grow. Professional services, and professional occupations, have grown strongly and are forecast to continue to do so. There will be an important role for sector Skills Investment Plans in meeting this future demand for skills.
- 9.7** Overall between 2008 and 2016 there has been growth in part time jobs, whilst at the same time there has been a fall in full time jobs. However, the growth in part time jobs occurred predominately during and immediately after the recession, and this growth has gone into reverse more recently. By contrast, full time jobs have been increasing in recent years, following losses from 2008 to 2012.
- 9.8** Part time jobs can offer people flexibility in the workplace and can provide appropriate employment opportunities for many. For some people however part time employment does not meet their aspirations. Underemployment, of which working too few hours is one component, increased in 2015 which suggests a reversal of supply and demand roles could be occurring – the economy is not supplying the types of jobs the labour market wants. An ongoing challenge will be to ensure that the economy offers employment opportunities at the right level and with the right terms for individuals. This may become increasingly challenging as the labour market shifts to having more people with higher level qualifications and the inverted occupational structure. Underutilisation of skills is another component of underemployment.
- 9.9** Although employment (until recently) was increasing in Scotland, and unemployment has continued to fall to a record low level, the economic inactivity rate in Scotland has risen sharply since 2014. The proportion of people in Scotland who are economically inactive is greater than the rate across the UK. The increase has been driven by the number of people who are inactive for ‘other’ reasons and excludes reasons such as being retired, studying, having temporary or long-term sickness, discouraged or looking after family and/or a home. Understanding the ‘other’ positive or negative reasons why people are economically inactive would be useful, as it could point to an emerging trend, or the strengthening of an existing trend in the labour market.

9.10 Employers in Scotland are finding it increasingly difficult to recruit people with the right skills – both the incidence and density of Skills Shortage Vacancies was higher in 2015 than it was in 2011. Employers do however report fewer skills gaps within their workforce than in 2011, although these levels remain quite high, emphasising the need for workforce development and in-work progression. Where skills shortages and skills gaps occurred, these were most often caused by a lack of soft skills, for example the ability to manage tasks and people. This suggests that there is a need to place more emphasis on soft skills throughout the education and training system to ensure that it delivers workers who have sufficient hard and soft skills.

9.11 The analysis in the jobs report provides considerable food for thought. The volatility in the jobs market is likely to remain, at least in the short term, and there is the challenge to increase the number of jobs whilst raising productivity levels. Investment in addressing the productivity gap, at all levels, is required to ensure a strong economic future for Scotland.

9.12 This report is another step in a major programme of work to stimulate wider debate on the skills needs and performance of Scotland's economy. It sits alongside and informs our ongoing work to produce sectoral and regional Skills Investment Plans.

9.13 The report is also intended to stimulate debate on the drivers that impinge on skills. We would welcome the opportunity to work with partners to better understand these and establish a shared narrative on the evidence to support future policy and investment. As outlined above, examples include:

- the impact of the Brexit decision
- the productivity challenge on Scotland's global competitiveness
- the impact of societal change on working practice and workplaces
- the impact of Industry 4.0 on occupations and skills.

9.14 As we move towards implementation of the Enterprise and Skills Review, a robust evidence base is vital. This report and subsequent work will help provide the foundation for the evidence base to inform investment in order to achieve the aspiration of:

- a dynamic, inclusive, globally competitive economy
- a high performing, inclusive labour market for Scotland.

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