

# Scotland's Future Skills Action Plan

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## Executive Summary

1. Skills enable people to participate and progress in the labour market. Providing people with the opportunities to develop skills – irrespective of who they are and where they live – is a key driver of inclusive growth, which sits at the heart of the Scottish Government’s Economic and Labour Market strategies. The OECD has argued that for the UK, “Developing the right set of skills and making full use of them in the economy is a recipe for higher productivity, growth and inclusiveness”.<sup>1</sup>
2. Scotland’s economy has grown in recent years despite ongoing domestic and international challenges. Scotland’s labour market has strengthened over this time, breaking records on employment and unemployment and mirroring the strength of the UK labour market. Scotland has also outperformed the UK throughout 2019 on overall unemployment and labour market outcomes for women and young people. Scotland’s skills system has played a role in these successes. Our workforce is more highly qualified than ever before and the bulk of increases in employment in the past decade have been in jobs categorised as highly skilled.
3. Looking beyond these positive headline trends there are challenges for our skills system. Skills gaps tend to be more prevalent in Scotland than the rest of the UK, there has been a steady decline in employees in Scotland receiving job related training over the past 15 years, and there are persistent sector (e.g. manufacturing) specific skills gaps affecting Scottish businesses. Despite some data pointing towards increased employment in highly skilled jobs, analysis by the OECD found that employment growth in OECD countries and the UK between 2010-2017 was driven by sectors with below average productivity and average wages.<sup>2</sup> Compared with pre-recession trends and international competitors, Scotland’s economic growth has been slower and lower than the Euro area<sup>3</sup> average since the Brexit referendum. This is forecast to continue.
4. In addition, there is some evidence that our labour market is changing and future labour market trends may exacerbate existing challenges, including around the quality of work, the changing structure of our labour market (hollowing out), inequalities between regions and groups and an ageing population. Brexit, technological change and the global climate emergency all have the potential to significantly impact the type of skills required in our economy with implications for our skills system.
5. Throughout this paper we refer to education, qualifications and skills. Education can be considered as the formal route to gain qualifications and skills, with qualifications being a loose proxy for skills. It is also recognised that skills applied and acquired in employment are not always reflected in formal qualifications.

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<sup>1</sup> OECD (2017), ‘[Getting Skills Right: United Kingdom](#)’.

<sup>2</sup> OECD (2019), ‘[OECD Compendium of Productivity Indicators 2019](#)’.

<sup>3</sup> The 17 European Union member states using the Euro.

## Understanding Scotland's Skills System

### Why is education important?

6. Achieving economic growth that is inclusive – where prosperity is shared regardless of who you are or where you live – is at the core of the Scottish Government's Economic and Labour Market strategies.<sup>4</sup> Our inclusive growth approach covers five core outcomes:
  - **Productivity** – Businesses are competitive and economic growth is resilient and sustainable.
  - **Population** – Scotland has a sustainable working age population.
  - **Participation** – Inequality of opportunity to access work is addressed and jobs are fulfilling, secure and well-paid.
  - **People** – Scotland's population is healthy and skilled and economic benefits are spread more widely, with lower levels of inequality.
  - **Place** – Communities across Scotland have the natural and physical resources to ensure they are strong and sustainable.
7. Skills and qualifications are a key driver of inclusive growth in that they help to drive productivity and growth, and play a key role in determining participation and inclusion. People with higher qualifications are more likely to be in employment, and developing skills can help people progress to more fulfilling, secure, well paid and fair work, which has wider social benefits.
8. Education and skills are recognised as important drivers of economic growth and productivity. Skills and qualifications can raise productivity directly by increasing an individual's ability to do more advanced tasks that add more value to the economy. Indirect impacts include enabling the development and application of technology and innovation and can contribute to an economy's economic growth.<sup>5</sup>
9. Research published by the Department for Business Innovation and Skills estimated that around one fifth of the UK's productivity growth between 2001 and 2013 was attributed to improvements in skills levels – rising to one quarter when including workforce training. High-level skills development was also found to have been a particularly strong driver of productivity in the UK compared with other European countries.<sup>6</sup>
10. Empirical evidence also suggests that education is correlated with positive social and economic outcomes for individuals and the communities they live in. For example, the OECD Skills Outlook (2013) concludes that highly educated and skilled workers are more likely to be at work, they earn more on average, and are more engaged politically and socially.<sup>7</sup>

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<sup>4</sup> Scottish Government (2015), '[Scotland's Economic Strategy](#)', and Scottish Government (2016), '[Scotland's Labour Market Strategy](#)'.

<sup>5</sup> BEIS (2015) '[UK Skills and Productivity in International Context](#)'.

<sup>6</sup> Ibid.

<sup>7</sup> OECD (2013), '[OECD Skills Outlook](#)'.

11. Evidence shows that a positive relationship exists between education and health levels. Across a wide-range of studies it has been proven that people with higher levels of education are more likely to live healthy lives and have better living standards.<sup>8</sup>

### **What makes a strong skills system?**

12. It has been argued that a strong skills system that can contribute to economic growth, inclusion and productivity, is one where people can gain technical skills and core skills – such as interpersonal, problem-solving and team-working skills – achieved through a balance of school-based and in-work learning.<sup>9</sup>

13. When comparing skills systems, the evolution of a skills system within a country appears deeply linked to other factors such as a country's institutional structures and labour market regulations (e.g. union bargaining power), suggesting that a 'one-size-fits-all option may not exist'.<sup>10</sup> Nonetheless, some countries have skills systems that are considered more successful than others (e.g. Germany and the Netherlands).<sup>11</sup>

14. Germany's highly regarded vocational skills system (VET), a programme combining classroom training and in-work learning, helps people develop job-related technical skills and generic skills such as interpersonal and problem-solving skills. Another strength of the German system is the alignment between workers' skills and knowledge with the needs of manufacturing and business services sectors.<sup>12</sup>

15. However, even in the German system, demands for change are proposed. For example, some argue that the traditional segmentation between vocational and higher education should be reduced, or eliminated, to promote more flexible learning.<sup>13</sup>

16. Flexibility is something that the Scottish system is seen to do well in, with the Augar report (2019),<sup>14</sup> recognising that Scotland has a significantly more flexible further education system compared to England. This seems to allow colleges to respond to the demand of their local labour market.

### **Current participants in education**

17. Participation in education has been increasing at all levels of Scotland's education system. More young people are choosing to remain at school, with almost two thirds (62.7%) leaving in their 6<sup>th</sup> year in 2017/18, up from 55.0% in

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<sup>8</sup> Hahn and Truman (2015), '[Education improves public health and promotes health equity](#)'.

<sup>9</sup> Brinkley and Crowley (2017), '[From 'inadequate' to 'outstanding': making the UK's skills system world class](#)'.

<sup>10</sup> See e.g. Denny *et al.* (2004), '[Education, earning and skills: A multi-country comparison](#)'.

<sup>11</sup> Brockmann *et al.* (2008) '[Knowledge, skills, competence: European divergences in vocational education and training \(VET\) - the English, German and Dutch cases](#)'.

<sup>12</sup> Hutfilter *et al.* (2018), '[Improving skills and their use in Germany](#)'.

<sup>13</sup> See e.g. Baethge and Wolter (2015), '[The German skill formation model in transition: from dual system of VET to higher education?](#)'.

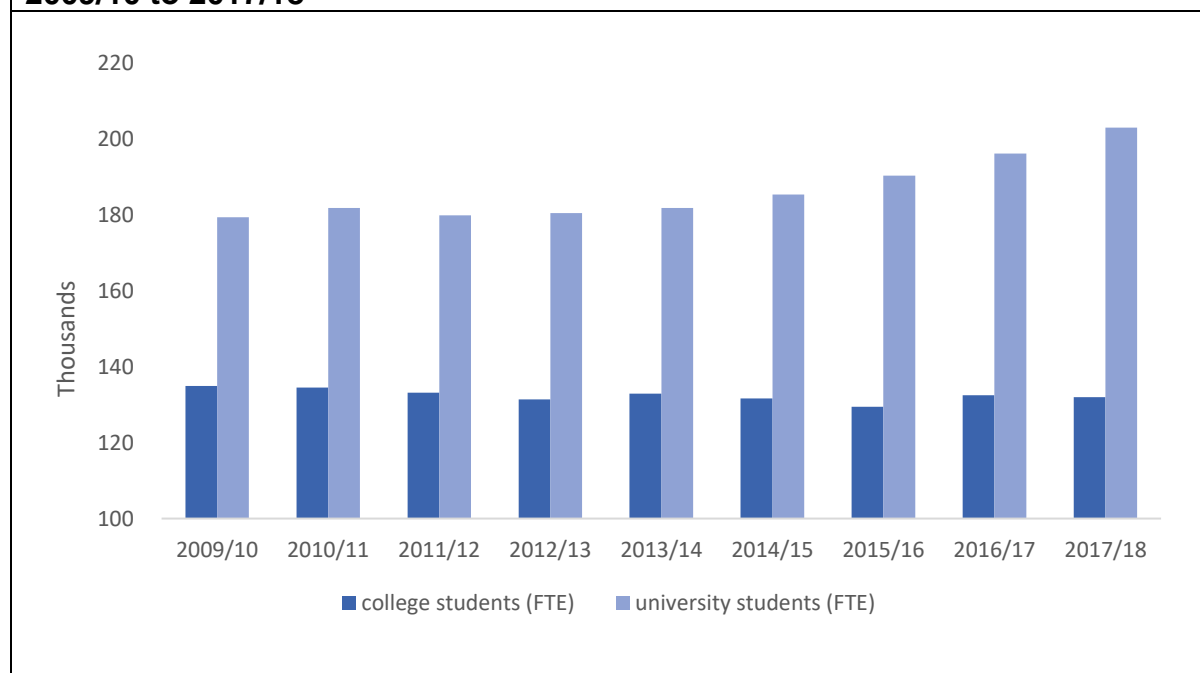
<sup>14</sup> Augar *et al.* (2019), '[Independent panel report: post-18 review of education and funding](#)', page 132.

2009/10. School leavers also have record levels of positive destinations, with 93.2% of school leavers in 2017/18 in a positive destination (39.0% in Higher Education (HE), 22.7% in Further Education (FE), 28.3% in Employment and 3.2% in other positive destination).<sup>15</sup>

18. Between 2009/10 and 2017/18, the proportion of school leavers going into HE and FE combined has risen from 58.5% to 61.7%. In this regard, the national qualification framework supports student progression. Specific initiatives have been launched to promote transitions, such as the regional articulation hubs which facilitate the transition from schools and colleges to university by building on local partnerships between institutions.<sup>16</sup>

19. University student numbers (FTE)<sup>17</sup> have increased from 179,350 in 2009/10 to 203,010 in 2017/18 (Figure 1). All college students (FTE) have remained relatively stable since 2009/10 at around 130,000 per year.<sup>18</sup> The number of apprenticeships starts have increased from 20,216 in 2009/10 to 28,191 in 2017/18 (Figure 2), this includes Graduate Apprenticeships introduced in 2016/17 but not Foundation Apprenticeships.

**Figure 1: Total student numbers by type of education by academic year, 2009/10 to 2017/18**



Source: Scottish Funding Council (2019), [‘Tables for HE Students and Qualifiers, 2017–18’](#) and SFC, [‘Infact Database’](#)

Note: Student numbers include all domiciles.

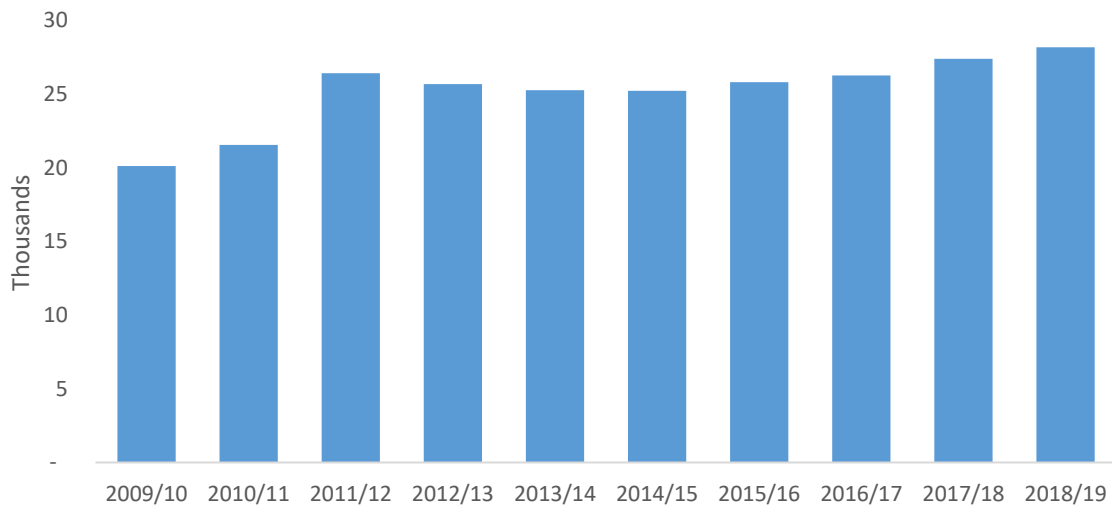
<sup>15</sup> Scottish Government (2019), [‘Follow-up leaver destinations – number 1 2019: summary statistics’](#).

<sup>16</sup> Kuczera (2013), ‘A skills beyond school commentary on Scotland’.

<sup>17</sup> Full-time equivalent (FTE) is the proportion of a full-time course that a student is studying. A student on a full-time full year course is 1.0, a student on a part-time course that is 60% of a full-time course is 0.6.

<sup>18</sup> Student and learner numbers all refer to academic year. Also, they include all domiciles.

**Figure 2: Student numbers starting Modern and Graduate Apprenticeships by academic year, 2009/10 to 2018/19**



Sources: SDS (2019), [‘Modern Apprenticeship Statistics - Full Year Report 2018/19’](#).

Note: Graduate Apprenticeships started in 2016/17. Foundation Apprenticeships (introduced in 2014/15) are not included in the above chart.

## Education equalities evidence

20. Improving the diversity of participation in Scotland’s education system is a vital component of inclusive growth and can contribute to the participation and people outcomes through reducing inequality of opportunity to access education and work.

### Participation Outcome

Inequality of opportunity to access work is addressed and jobs are fulfilling, secure and well-paid.

### People Outcome

Scotland’s population is healthy and skilled and economic benefits are spread more widely, with lower levels of inequality.

**Table 1: Males and females in MA training compared to University and College in Scotland**

Gender	MA’s in training as at 29 <sup>th</sup> June 2018		HEI students (2017/18)		College enrolments (2017/18)	
	Number	Proportion	Number	Proportion	Number	Proportion
Female	10,978	30%	144,810	59%	154,679	51%
Male	26,106	70%	101,940	41%	147,650	49%
<b>Total</b>	<b>37,084</b>	<b>100%</b>	<b>246,750</b>	<b>100%</b>	<b>302,329</b>	<b>100%</b>

Sources: SDS (2019), [‘Modern Apprenticeship Statistics’](#), Summary Information by age breakdown; SFC (2019), [‘Higher Education Students and Qualifiers at Scottish Institutions 2017/18’](#) – the total figure excludes 360 students whose gender is not reported or was reported as ‘Other’ and has been rounded to the nearest 5.

SFC (2019), [‘College Statistics 2017/18’](#) – the total figure excludes 1008 enrolments for whom the gender identity was declared as ‘other’, or was not declared at all. This includes HE and FE at college.

21. Table 1 highlights the gender split across Modern Apprenticeships (MA's), university HEI students and college enrolments in 2017/18. This table in isolation might suggest that MAs attract more males whereas university attracts more females. However, there are significant variations in gender split when specific course enrolments are considered.
22. For example, in terms of entrants to Higher Education, in both Higher Education Institutions (HEI) and Colleges in 2017/18, 58.1% were Female and 41.7% were male.<sup>19</sup> Female entrants outnumbered male entrants for all subject areas except Science and Engineering where 63.2% were male and 36.6% were female.
23. A similar picture can be seen in MA starts where 62% were male in 2018/19 and 38% female.<sup>20</sup> There is a high level of gender segregation in some frameworks. For instance the largest occupational grouping, Construction & Related, 2% of starts were female compared to 98% male in 2018/19. While the second largest Occupational Grouping, Sport Health & Social Care is primarily dominated by Females (84% to 16%).
24. While it varies across courses, in general, females achieve better education outcomes than males. For instance, females had higher pass rates than males for both Highers (80% vs 74%) and Advanced Highers (84% vs 77%) in 2018.<sup>21</sup> At university, for first degree qualifiers, females were more likely to graduate with a first or upper second compared to males (82% vs 77%) in 2017/18.<sup>22</sup>
25. In terms of further study, females attending college were more likely to progress to further study than their male counterparts, with 76.5% progressing to further study compared to 73.1% of males in 2016/17. However the opposite is true when considering the progressing to 'work', with males (22.0%) more likely to take this route than females (18.5%).<sup>23</sup> In Modern Apprenticeships, with 94% of females in work or further study six months after completion of their MA, compared to 92% of males.<sup>24</sup>
26. In terms of equality of access across socio-economic groups, HEIs and colleges in Scotland have improved their performance. In 2017/18, 18.9% of Scottish domiciled undergraduate HE entrants came from Scotland's 20% most deprived areas. This represents an increase of 1.9 percentage points from the 2013/14.<sup>25</sup> Also, in 2017/18, 34.1% of full-time Scottish domiciled FE college entrants came from Scotland's 20% most deprived areas. This represents an increase of 3.3 percentage points from 2006/07 and is the highest figure on record.

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<sup>19</sup> Scottish Funding Council (2019), ['Tables for HE Students and Qualifiers, 2017/18'](#), Table 16.

<sup>20</sup> Skills Development Scotland (2019), ['Modern Apprenticeship Statistics, Full Year Report 2018/19'](#).

<sup>21</sup> Scottish Qualifications Authority (2019), ['Annual Statistical Report 2018'](#).

<sup>22</sup> Higher Education Statistic Agency (2019), ['Higher Education Student Statistics: UK, 2017/18'](#), figure 17.

<sup>23</sup> Scottish Funding Council (2018), ['College Leaver Destinations 2016/17'](#).

<sup>24</sup> Skills Development Scotland (2016), ['Modern Apprenticeship Intermediate Outcomes 2016'](#).

<sup>25</sup> Scottish Funding Council (2019), ['Report on Widening Access, 2017/18'](#).



27. The proportion of minority ethnic students in university and college in Scotland has generally been increasing over the time period since 2003/04. Figures from the Scottish Funding Council (SFC) show that the highest proportion of minority ethnic students (11.7%), are in part-time FE study at college, followed by full-time first degree level – where 8.7% of entrants in 2017/18 were from a Black and Minority Ethnic (BME) background.<sup>26</sup>
28. From 2013/14 to 2017/18 the proportion of entrants with a declared disability has increased across all full-time modes of study.<sup>27</sup> According to figures from the SFC, in 2017/18, the highest proportion of students with a declared disability in Scotland was at full-time FE level in colleges, where 22.5% of entrants had a declared disability.

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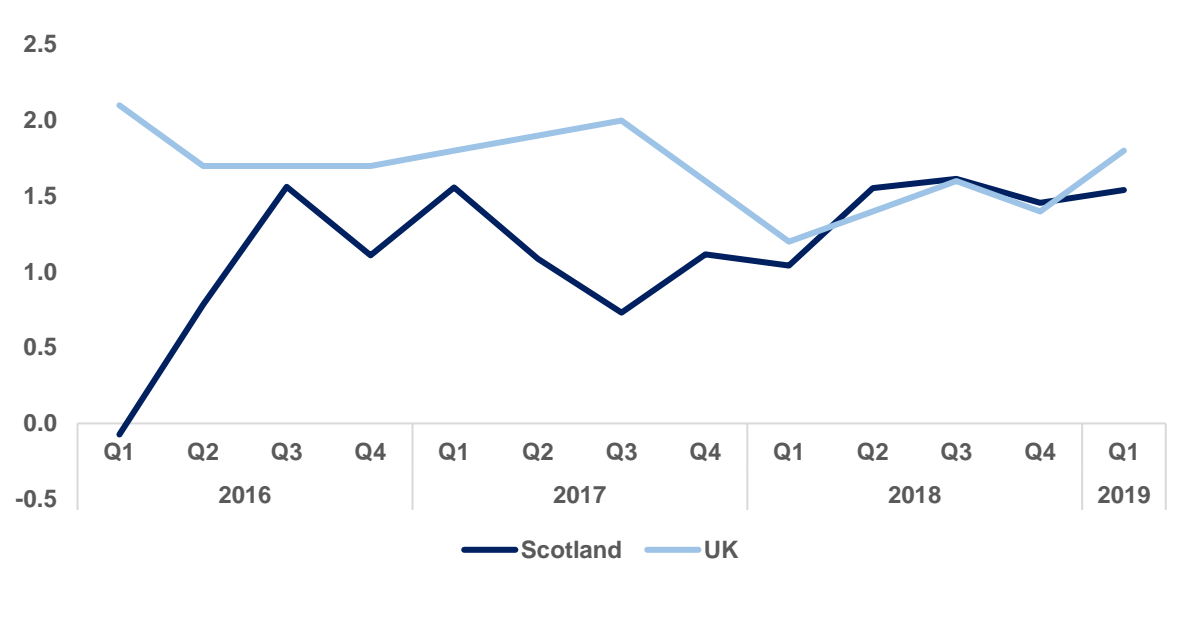
<sup>26</sup> Ibid., page 30.

<sup>27</sup> Ibid., section 7, page 34.

## Understanding Scotland's Economy and Labour Market

29. Scotland's recent economic performance has proven resilient in the face of domestic and international challenges. Economic growth remains below the pre-2008 recession trend but has kept pace with the UK throughout 2018 and into 2019 (Figure 3).

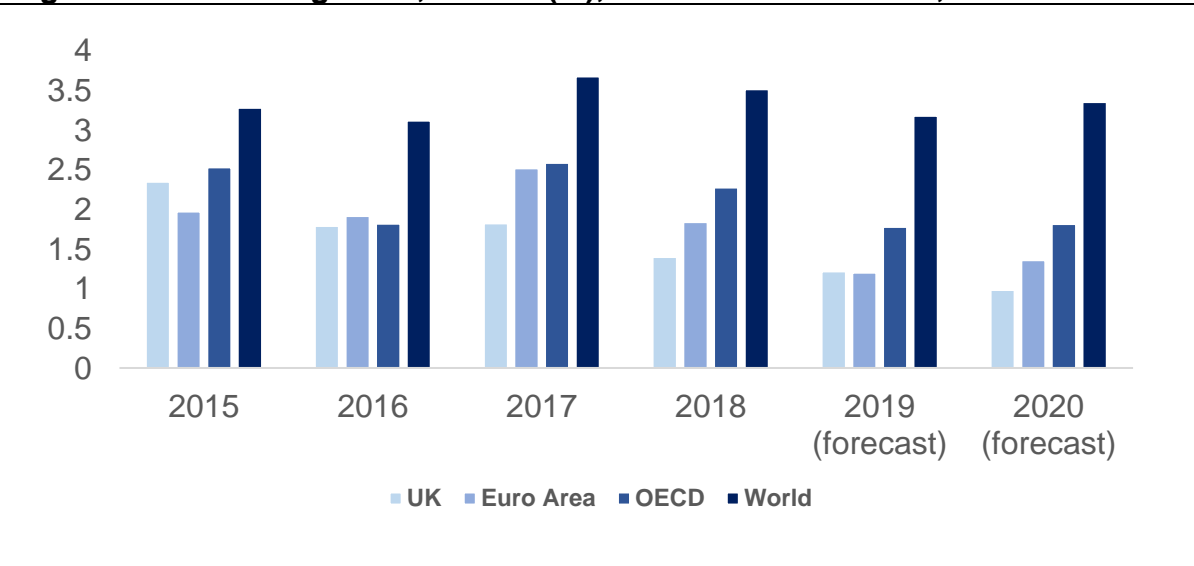
**Figure 3: GDP growth compared to same quarter last year (%), 2016-2019**



Source: Scottish Government (2019), '[GDP Quarterly National Accounts, Scotland 2019 Quarter 1](#)'.

30. However, Scotland and the UK's economic performance has lagged behind the Euro area since the 2016 Brexit referendum. Although annual economic growth (GDP) for the UK and the Euro Area is expected to broadly converge in 2019, forecasts for economic growth in 2020 show a growing divergence between UK GDP growth and the Euro Area, OECD and World averages (Figure 4).

**Figure 4: Real GDP growth, annual (%), out-turn and forecast, 2015-2020**

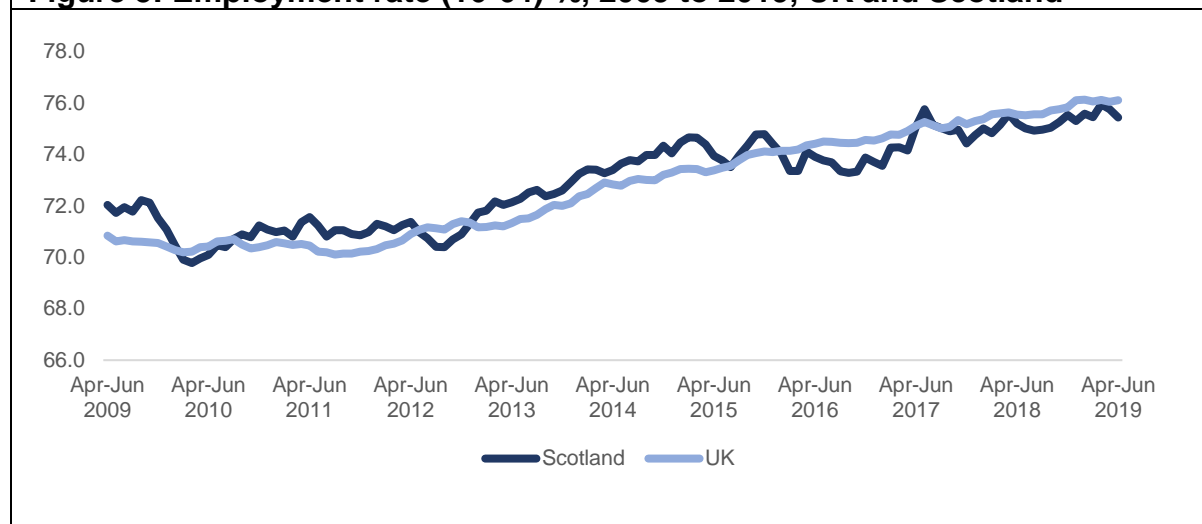


Source: OECD, '[Real GDP Forecasts](#)', accessed on June 2019.

31. Despite this recent period of economic uncertainty, Scotland's labour market has proven especially strong compared with historical trends, breaking records on employment (75.9%, Feb-Apr 2019) and unemployment (3.2%, Jan-Mar 2019).<sup>28</sup>

32. In the past decade, there have been intervals where Scotland's employment rate has outperformed or underperformed compared with the UK. However, broadly, Scotland's employment rate has closely tracked the UK's (Figure 5).<sup>29</sup>

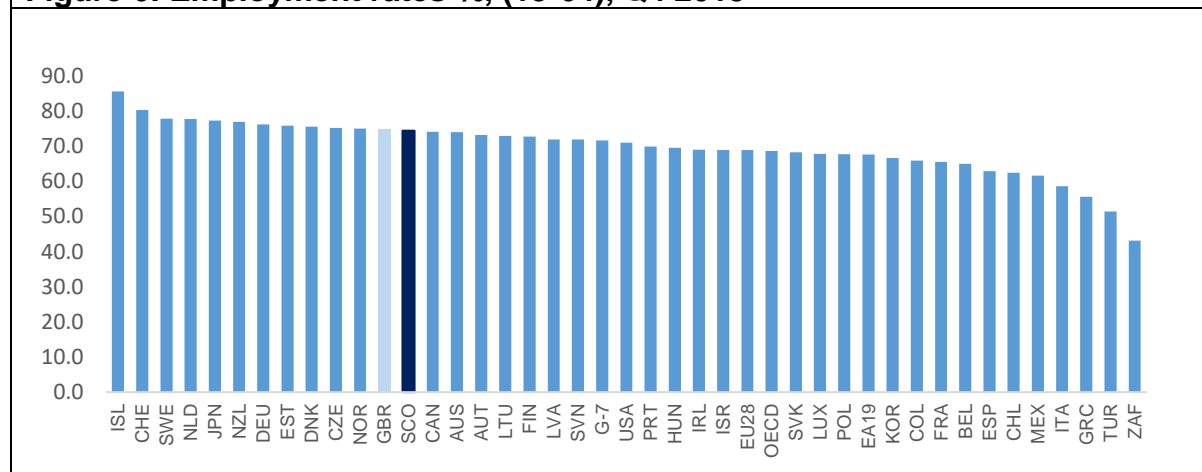
**Figure 5: Employment rate (16-64) %, 2009 to 2019, UK and Scotland**



Source: Office for National Statistics, Labour Force Survey, Apr-Jun 2019.

33. The UK and Scottish labour markets are also performing strongly when compared with international competitors – with employment rates higher than the G7, EU28 and OECD averages (Figure 6).<sup>30</sup>

**Figure 6: Employment rates %, (15-64), Q4 2018**



Source: OECD (2019), 'Employment Rate', accessed on June 2019, and NISRA-ONS (2019), 'Labour Force Survey Oct-Dec 2018', Scottish Government calculations.

<sup>28</sup> ONS, Labour Force Survey, Apr-Jun 2019.

<sup>29</sup> Most recent data – Apr-Jun 2019 shows a 0.7 percentage point difference (UK employment rate of 76.1% and Scotland 75.4%).

<sup>30</sup> Figure 4 shows employment rates for ages 15-64 as used by OECD rather than the standard ONS 16-64.

34. For some other key labour market indicators, Scotland has outperformed the UK in recent times. The employment rate for women in Scotland reached a record high in Feb-Apr 2019 (72.7%) and has been equal or higher than in the UK in almost every monthly labour market release for the past 17 years.<sup>31</sup>
35. At 6.1%, youth unemployment (ages 16-24) in Feb-Apr 2019<sup>32</sup> in Scotland was also lower than any other time on record and substantially lower than in the UK (10.3%, ages 16-24, Feb-Apr 2019).
36. In summary, headline economic and labour market indicators show Scotland's economy to be in a relatively strong position. However, there are existing and emerging challenges for our labour market with particular implications for our skills system but also inclusive growth, through the five outcomes of productivity, population, participation, people and place.

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<sup>31</sup> The Labour Force Survey shows Scotland's employment rate (16-64) for women has been equal or higher than the UK's in every month since Jul-Sep 2001, other than Jul-Sep 2012, Sep-Nov 2012 and Nov-Jan 2019.

<sup>32</sup> ONS, Labour Force Survey, Feb-Apr 2019.

## Challenges Faced by Scotland's Labour Market

### Quality of work

37. Creating jobs that are fulfilling, secure and well-paid is a key component of the Scottish Government's Economic and Labour Market strategies. Beyond headline labour market indicators, the quality of work in our economy can be informed by sector trends, pay levels, whether someone works full time or part time, opportunities for progression, levels of job satisfaction and other metrics. Quality of work can impact upon the inclusive growth outcomes of participation and people;

### Participation Outcome

Inequality of opportunity to access work is addressed and jobs are fulfilling, secure and well-paid.

### People Outcome

Scotland's population is healthy and skilled and economic benefits are spread more widely, with lower levels of inequality.

38. The 2008 financial crash and recession had a clear impact on some of these quality of work indicators. In the aftermath of the recession, full time work decreased and part time work increased as workers' hours were reduced by employers and employment opportunities across the economy fell. Hours based underemployment (percentage of people in employment aged 16+ who want to work more hours) rose by 3 percentage points between 2008 and 2010 to 10%. Underemployment has since steadily fallen to 7.4% in 2018 but is still slightly above the pre-recession average.<sup>33</sup>

39. The proportion of Scotland's workforce in full time work in 2018 (72.7%) also remains below the pre-recession level (75.2%, 2007) and has declined over the past 2 years.<sup>34</sup> Underemployment – very closely correlated with the ratio of part time work to full time work – fell over the past 2 years whereas the part time/full time ratio rose. That the part time/full time ratio remains elevated whereas underemployment has returned relatively close to the pre-recession trend suggests an element of the increased proportion of part time work in our economy over this period has been voluntary.

40. Data on skills based underemployment also shows a relatively high level of under-utilisation of graduate skills. The 2016 figure for graduate skills under-utilisation ranges from 40.8% of graduates (five or more years after graduating) working in non-graduate roles based on the Annual Population Survey, compared to 28% of first degree leavers entering 'non-professional' roles based on Higher Education Statistics Agency surveys.<sup>35</sup>

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<sup>33</sup> Scottish Government (2019), '[Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018](#)'.

<sup>34</sup> Ibid.

<sup>35</sup> Scottish Government (2019), '[Just Transition Commission: Background report](#)'.

41. Latest data for April to June 2019 shows there is a slightly lower proportion of people working on zero hours contracts in Scotland than in the UK as a whole (2.6% vs 2.7%).<sup>36</sup> However, this is an increase of 0.2 percentage points from the year before (2.4%). Although zero hours contracts can in some circumstances be appropriate for both employers and employees, in recognition that some zero hours contracts can be exploitative, the Scottish Government through the Scottish Business Pledge encourages businesses to only use zero hours contracts when appropriate i.e. when linked to seasonal work. The Resolution Foundation concludes that “a number of surveys have found that the majority of those employed on such contracts are satisfied. [1] Consistently, however, ZHC workers have been more likely than non-ZHC workers to say they face difficulties, whether that be a desire for more hours [2] or notice further in advance of their shifts [3].”<sup>37</sup>
42. Scotland starts from a relatively strong earnings baseline relative to the rest of the UK, but until recently HMRC Pay as You Earn (PAYE) data showed Scotland to have among the lowest growth in average earnings of any UK region.<sup>38</sup> For Jan-Mar 2019 however, average PAYE earnings in Scotland grew more quickly over the year than the UK as a whole (4.8% vs 4.2%). Despite this, most earnings measures when adjusted for inflation show earnings in Scotland have yet to recover to pre-recession levels.<sup>39</sup>
43. Slow wage growth is reflected in the latest poverty data that shows in-work poverty in Scotland is increasing. Data for 2015-18, showed 60% of working-age adults in Scotland living in relative poverty after housing costs lived in working households - the highest on record.<sup>40</sup> In-work poverty is also a major driver of child poverty - with the proportion of children in Scotland in relative poverty also slowly rising.<sup>41</sup>

## Demographic change

### Population Outcome

Scotland has a sustainable working age population.

44. Scotland’s population growth has traditionally been slower than the UK as a whole, and this is expected to continue. NRS projections for 2016-2041 estimate Scotland’s population will grow at less than half the rate of the UK (5.3% vs 11.1%) – driven by relatively lower rates of births and inwards net migration.<sup>42</sup>
45. Scotland’s population is ageing and this is expected to become more pronounced in future. Between 2016-2041, Scotland’s working age population is only

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<sup>36</sup> ONS (2019), ‘[People in employment on zero hours contracts](#)’.

<sup>37</sup> D’Arcy and Rahman (2019), ‘[Atypical approaches: Options to support workers with insecure incomes](#)’.

<sup>38</sup> UK Government (2019), ‘[Earnings and employment statistics from Pay As You Earn Real Time Information: experimental statistics](#)’.

<sup>39</sup> Scottish Fiscal Commission (2019), ‘[Scotland’s Economic and Fiscal Forecasts May 2019](#)’.

<sup>40</sup> Scottish Government (2019), ‘[Poverty and income inequality in Scotland: 2015-2018](#)’.

<sup>41</sup> Congreve and McCormick (2018), ‘[Poverty in Scotland 2018](#)’.

<sup>42</sup> NRS (2017), ‘[Projected Population of Scotland \(2016-based\)](#)’.

expected to grow by 1% compared with 8% in the UK. Over the same period, Scotland's population of over 75's is expected to rise by 79%.<sup>43</sup>

46. This ageing of the population presents challenges to the supply of labour in our economy with further implications for fiscal sustainability. This is a particular challenge for rural Scotland where lower levels of population growth, higher levels of out-migration of young people, and a more dispersed population can exacerbate these challenges.
47. Workers are also expected to remain in the labour market for longer. An older workforce presents opportunities to Scotland's economy as older employees can bring a wealth of skills and experience to employers. Research has shown that older workers (aged 51+) demonstrate high levels of job-related knowledge and skills, resilience in times of difficulty and can be regarded as particularly loyal to their employers relative to other age groups.<sup>44</sup>
48. As Scotland's workforce ages the need to provide retraining and upskilling opportunities for older workers will rise substantially. An appetite for learning, including lifelong learning, for all age groups has so far failed to materialise in the UK in the past 20 years where training has been concentrated at school-level, while there has been a decrease in training for people aged 25+. In the UK, skills policy has been aimed towards developing generic skills, such as numeracy and literacy skills, and ensuring people are equipped with skills they need for their current jobs.<sup>45</sup>
49. A renewed focus on lifelong learning is a key message of the OECD Employment Outlook (2019): "...countries should focus on putting in place comprehensive adult learning strategies – to prevent skills depreciation and to facilitate transitions across jobs. Adult learning systems will also need to be strengthened and adapted to provide all workers with adequate opportunities for retraining throughout their careers".<sup>46</sup>

## **Structural shifts in the labour market**

### **Productivity Outcome**

Businesses are competitive and economic growth is resilient and sustainable.

50. There has been a major structural shift in Scotland's labour market over the past 40 years as employment in traditional industries such as manufacturing, agriculture and mining has been replaced by increased employment in the service sectors. The "hollowing out" effect has led to falling numbers employed in middle income work and higher levels of both high and low paid employment.<sup>47</sup>

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<sup>43</sup> Ibid.

<sup>44</sup> Institute of Leadership and Management (2015), '[Untapped Talent: can over 50s bridge the leadership skills gap](#)'.

<sup>45</sup> Keep (2019), 'The impact of digital innovation on education, training and skills – some initial thoughts', unpublished.

<sup>46</sup> OECD (2019), '[OECD Employment Outlook](#)'.

<sup>47</sup> Bell and Eiser (2013). '[Inequality in Scotland: trends, drivers, and implications for the independence debate](#)'.

51. More recently there has been strong growth of employment in occupations defined as medium to high skill levels, with all of the net increase in employment since 2007 categorised as medium-high or highly skilled. However, some research suggests this does not necessarily reflect an increase in better paid, more highly skilled work – average real earnings growth in Scotland has been slow – and that job title inflation has resulted in some jobs being re-categorised from lower skill levels to higher.<sup>48</sup> There are also jobs that now require a higher level of qualification than in the past (e.g. since 2013, nurses in the UK have required a degree where before a diploma was the minimum requirement), this may be exaggerating the extent of high-skill job growth in our economy.
52. Changes in employment by skills level is reflected in the sectoral pattern of employment in our economy – with declines in employment in traditional industries – manufacturing, agriculture and mining, replaced by increased employment in business services and finance.
53. Further, analysis by the OECD shows that employment growth in OECD countries and the UK between 2010-2017 has been driven by sectors with below average productivity and average wages.<sup>49</sup>
54. And although Scotland's productivity has grown more strongly than the UK as a whole in recent years, this has been driven by a larger fall in jobs and hours worked in Scotland's economy than the UK's during the recession and weaker recovery in the years since.<sup>50</sup> Scotland's productivity ranked against its OECD competitors has remained in 16<sup>th</sup> position for the past decade.

## **Inequalities between regions and groups**

### **People Outcome**

Scotland's population is healthy and skilled and economic benefits are spread more widely, with lower levels of inequality.

### **Place Outcome**

Communities across Scotland have the natural and physical resources to ensure they are strong and sustainable.

55. In Scotland and the UK, there are persistent gender, disability and ethnicity related gaps in labour market outcomes. These inequalities can originate long before people enter the labour market.
56. In 2018, the gap between the employment rates of men and women was 7.7 percentage points, between disabled and non-disabled people it was 35.5

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<sup>48</sup> Holmes and Mayhew (2012), '[The Changing Shape of the UK Job Market and its Implications for the Bottom Half of Earners](#)'.

<sup>49</sup> OECD (2019), '[Compendium of Productivity Indicators 2019](#)'.

<sup>50</sup> Fraser of Allander Institute (2017), '[Unpicking Scotland's recent productivity performance relative to the UK: is it all that it seems?](#)'.



percentage points, and between white people and people from minority ethnic groups, it was 19.7 percentage points – the largest gap on record.<sup>51</sup>

57. There are also significant gaps in pay. There has been progress in reducing the gender pay gap in Scotland (measured by median full time hourly earnings), falling from 18.4% in 1997 to 5.7% in 2018. People from minority ethnic groups also tend to earn less than white people, the indicative gap for 2014-2016 based upon full time hourly pay was 6.3%.<sup>52</sup> For disabled people, the pay gap compared with non-disabled people in 2017 was 8.0% (median hourly earnings for full-time employees), a fall from 15.4% in 2016.<sup>53</sup>
58. The Scottish Government's analysis of the Gender Pay Gap concluded that statistical studies consistently find occupational segregation (men and women tend to do different jobs) to be one of the largest components of the gender pay gap. Recent research found occupational segregation accounted for 22% of the 2013/14 Gender Pay Gap in Scotland – the largest driver of any variable.<sup>54</sup>
59. Occupational segregation is an issue for our education and skills systems. There is evidence that hostile school environments and stereotyping can perpetuate segregation in education subject choices (e.g. under-representation of women in STEM fields) and contribute to inequalities in labour market outcomes<sup>55</sup> for women, disabled people and people from minority ethnic groups. Where these characteristics intersect, people can face multiple disadvantage in the labour market. The Scottish Government's Action Plans on the Gender Pay Gap, Disability Employment Gap and Race Equality outline actions the Scottish Government will take to reduce skills segregation and the impact it has on inequalities in our labour market.
60. Similarly, disabled people face a range of barriers to employment. They are more likely than non-disabled people to work part time and hours-based underemployment for disabled people is consistently higher than for non-disabled people. They earn less on average and are under-represented in better paid occupations but we know that increasing the skills levels of disabled people can make a difference. Having a degree boosts the employment rate of disabled people by 27 percentage points (the employment rate of disabled people with a degree is more than 27 percentage points higher than those without) whereas the difference for non-disabled people is 6.6 percentage points.<sup>56</sup>
61. There are also large variations in labour market outcomes across regions of Scotland – largely unchanged over time. In 2018 the gap between the highest (Orkney Islands) and lowest (Glasgow City) local authority employment rates was 23.2 percentage points – an increase of 0.4 percentage points from the year

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<sup>51</sup> Scottish Government (2019), '[Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018](#)'.

<sup>52</sup> Scottish Government (2019), '[Indicative APS Pay Gap](#)'.

<sup>53</sup> ONS (2019), '[Annual Population Survey, January - December, 2017](#)'.

<sup>54</sup> Scottish Government (2019), '[Gender Pay Gap Action Plan Analytical Annex](#)'.

<sup>55</sup> Ibid.

<sup>56</sup> ONS (2019), '[Annual Population Survey, January - December, 2017](#)'.

before. In every year since 2004, the lowest employment rate of any local authority in Scotland has either been Glasgow, Dundee or North Ayrshire.

62. While there has been significant progress in improving the attainment of qualifications across Scotland, regional disparities in qualifications and skills levels persist.
63. The proportion of Scotland's working age population with a degree or professional level qualification has increased from 16.8% in 2004 to 29.6% in 2018. In 2004, while the best performing local authority, Edinburgh, had 32.4% of its working age population holding a degree or professional level qualification, compared to 8.0% for West Dunbartonshire – the lowest of any local authority and a gap of 24.4 percentage points. In 2018, the gap between the highest and lowest local authorities (Edinburgh and Shetland) had widened to 39.1 percentage points (50.7% vs 11.6%). This gap will be influenced by migration patterns, prevalence of students, average age and the relative strength and diversity of local economies. However, this shows that in some areas of Scotland, people can be more than four times as likely to hold a degree or professional qualification than others.<sup>57</sup>
64. There is also regional disparity at the other end of the spectrum although there are signs of progress over the past 15 years. For adults aged 16-64 holding low or no qualifications (SCQF Level 4 and below), in 2004 the highest and lowest local authorities were East Dunbartonshire (9.9%) and North Lanarkshire (28.3%). While these two local authorities remained as highest and lowest in 2018, the gap had fallen from 18.4 percentage points to 12.2 (5.9% vs 18.1%).

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<sup>57</sup> Scottish Government (2019), '[Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018](#)'.

## Future Challenges for our Labour Market

### Employment forecasts

65. Employment forecasts for Scotland are generally cautious. Scotland is already close to a record high employment rate and close to a record low for unemployment. Our population is ageing and Brexit is expected to reduce employment in the economy – with the Scottish Government estimating a potential 8% unemployment rate in the event of a no-deal Brexit.<sup>58</sup> In its May 2019 Economic and Fiscal Forecasts, the Scottish Fiscal Commission projected an average increase in employment in Scotland of around 0.1% per year over the next 5 years.<sup>59</sup>
66. Although it is unlikely workforce participation can grow significantly higher, forecasts produced by Oxford Economics indicate that over the next 10 years there could be significant employment churn – although this is not a new feature of our labour market. Of the approximate 1 million jobs expected to be demanded in our economy between 2019-2029, 92% are expected to be “replacement” demand – where jobs are vacated through retirement, change of occupation or migration and are required to be re-filled.<sup>60</sup>
67. This level of churn in the labour market has implications for skills demand but also supply. Where replacement demand is higher (e.g. professional occupations, elementary occupations and sales and customer service occupations), the skills associated with those jobs would be expected to be in greatest demand. Of all qualification grades, SCQF 7-10 (HNC to Honours degree level) is expected to make up around half of this labour market churn, followed by SCQF 5 (National 5) making up around one quarter.<sup>61</sup>

### Brexit

68. The current and future impact of Brexit on our economy, labour market and skills profile is highly uncertain. However, the Scottish Government’s position is that Brexit in any form will have a negative impact on all regions and sectors of our economy – while recognising that this impact will not be uniform.<sup>62</sup>
69. There are indications that the uncertainty caused by Brexit is already impacting our economy. The Scottish Government’s Consumer Sentiment Indicator was positive in every quarter prior to the Brexit referendum, but has been negative in every quarter since the Brexit referendum and reached its lowest level on record in Q1 2019 (-9.6).<sup>63</sup>
70. Sector specific analysis carried out by the Scottish Government’s Office of the Chief Economic Adviser highlighted Agriculture and Fishing, Construction and

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<sup>58</sup> Scottish Government (2019), '[No-deal Brexit: economic implications for Scotland](#)'.

<sup>59</sup> Scottish Fiscal Commission (2019), '[Scotland's Economic and Fiscal Forecasts May 2019](#)'.

<sup>60</sup> Skills Development Scotland (2019), '[RSA Data Matrix](#)'.

<sup>61</sup> Skills Development Scotland (2017), '[Job and Skills in Scotland: the evidence](#)', page 15.

<sup>62</sup> Scottish Government (2019), '[Scotland's place in Europe: people, jobs and investment](#)'.

<sup>63</sup> Scottish Government (2019), '[Scottish Consumer Sentiment Indicator, 2019 Quarter 1](#)'.

Manufacturing as the sectors where the negative impact of a no-deal Brexit in particular could be greatest.<sup>64</sup> This analysis considered the extent to which sectors trade with the EU, are reliant on EU workers, deal with integrated EU supply chains and are subject to EU regulation.

71. From a supply perspective, a fall in EU migration due to Brexit could exacerbate existing skills gaps in these sectors. Of the businesses in Scotland that reported hard to fill vacancies in the UK Employer Skills Survey, 41% tried to recruit non-UK nationals to fill them.<sup>65</sup> Of those businesses that tried to recruit non-UK nationals, a large majority (89%) tried to recruit EU nationals. This suggests that if recruiting EU nationals becomes significantly harder after Brexit, there will be a major impact on businesses currently using this as an employment strategy to mitigate hard to fill vacancies.
72. Data from the UK Employer Skills Survey shows that the Highlands & Islands and South of Scotland already have issues with difficulties in obtaining work permits for non-EU staff and this is a reason for some hard to fill vacancies in these regions.<sup>66</sup> Depending on the agreed immigration framework for EU nationals, this issue could be exacerbated, particularly in these regions.
73. The longer term impact of Brexit may create more need for redundant workers to upskill and to retrain if sector downturns lead to job losses. The industries most at risk from Brexit (e.g. agriculture & fishing, manufacturing and construction) tend to have older workers than average and older age groups tend to be unemployed for longer than younger age groups.<sup>67</sup> Workers leaving these industries may have highly specialised skills and require significant re-skilling to secure employment in other sectors.

## **Global climate emergency**

74. The Scottish Government recognises that there is a global climate emergency and is committed to taking whatever action possible. Through the introduction of a new Climate Change Bill the Scottish Government has committed to setting a new target date of 2045 for reaching net zero emissions.<sup>68</sup> If agreed by Parliament, Scotland will have the most stringent statutory targets in the world.
75. Reaching this target could have profound impacts on Scotland's labour market and skills needs through changes to how people travel, food production, and investment levels in more traditional forms of energy production and newer more sustainable energy sources. In recognition of this, the Scottish Government set up the Just Transition Commission to make recommendations how to understand and mitigate risks to regional cohesion, equalities, poverty and a sustainable and inclusive labour market of the shift towards a net zero emissions economy.<sup>69</sup>

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<sup>64</sup> Scottish Government (2019), '[No-deal Brexit: economic implications for Scotland](#)'.

<sup>65</sup> UK Department for Education (2018), '[Employer skills survey 2017: Scotland toolkit](#)'.

<sup>66</sup> Ibid.

<sup>67</sup> Scottish Government (2019), '[Regional employment patterns in Scotland: statistics from the Annual Population Survey 2018](#)'.

<sup>68</sup> Scottish Government (2019) '[Climate Change Bill](#)'.

<sup>69</sup> Scottish Government (2019), '[Just Transition Commission: Background report](#)'.

76. For Scotland to take advantage of new employment opportunities in emerging sectors aligned with a net zero emissions economy (e.g. off-shore windfarm production and operation) and also to mitigate potential future job losses in sectors targeted as high carbon emitting sectors (e.g. aviation), a more flexible skills system that encourages and enables job switching across all age groups will be required.
77. Scottish Government funded schemes such as the Environmental Placement Programme (EPP) already supports businesses to recruit graduates to work on environmental projects. Interns are supported throughout their placement and gain valuable work experience in the sector, while helping their host company to reduce emissions and improve their green credentials.
78. There is analysis that suggests transitioning to a net zero emissions economy may produce positive employment impacts for the UK as a whole. Research by the European Union estimates that implementing the policies set out in the 2015 Paris Agreement to maintain climate change at no higher than +1.5 degrees will have an overall positive impact on employment EU wide (+0.5% increase in employment). The UK impact is expected to be broadly in line with the EU average at +0.47%.<sup>70</sup>
79. This EU wide increase is expected to be concentrated in middle skilled and middle income jobs – mainly in the construction and service sectors – mitigating the expected continuation of “hollowing out” led by digitalisation and further integration in global production networks and value chains across the EU as a whole. However, for the UK, job creation led by a net zero emissions economy is expected to be concentrated in lower skilled work.<sup>71</sup>

### **Advances in digital innovation**

80. Digital innovation, and in particular – automation, machine learning and artificial intelligence are anticipated to have an increasing impact on the global economy and labour market in future years.<sup>72</sup> However, the exact nature of this impact is contentious.
81. These forms of technology already exist in our economy, and periods of technological advances are not new, however, the pace of development of this current phase may be what sets it apart from historical periods of technological change.<sup>73</sup>
82. Much of the existing analysis of the potential labour market impact of the development of digital innovation focuses on the likelihood of job losses by sector and occupation through the replacement of human workers with technology.<sup>74</sup>

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<sup>70</sup> European Commission (2019), '[Employment and Social Developments in Europe 2019](#)'.

<sup>71</sup> Ibid.

<sup>72</sup> World Economic Forum (2016), '[The future of Jobs: Employment, skills, and workforce strategy for the fourth industrial revolution](#)'.

<sup>73</sup> Carney (2018), '[The future of Work](#)'.

<sup>74</sup> Frey and Osborne (2013), '[The Future of Employment: how susceptible are jobs to computerisation?](#)'.

However, some analysis predicts that advances in technology will ultimately be job creating – but there will be distributional impacts, potentially worsening existing regional disparities in income.<sup>75</sup>

83. In 2018 the Scottish Government, in conjunction with the Scottish Trades Union Congress (STUC), published ‘Technological Change and the Scottish Labour Market’ to better understand how the Scottish economy and labour market might be affected by technological development in years to come.<sup>76</sup>

84. The report found that: *“Views differ on how technological change will affect employment in the 21st century. Some argue that a significant proportion of current jobs are at risk over a relatively short horizon whilst others stress that humans and technology are often complements not substitutes and that the labour market could prove as resilient as during previous waves of technological change.”*

85. While there is consensus that some occupations and roles will be replaced – with repetitive, administrative roles deemed most at risk – it is anticipated that new jobs will be created. Distributional impacts may be at the forefront of some of these changes. Recent research has pointed towards women and people from minority ethnic groups as being potentially particularly vulnerable to the impact of automation with a higher concentration in at-risk occupations.<sup>77</sup>

86. Recent research by Professor Ewart Keep for the Scottish Government’s Strategic Labour Market Group – The impact of digital innovation on education, training and skills – stressed that how digital innovation impacts on our economy is not pre-determined, collectively we have choice around what technology is implemented, how and when.<sup>78</sup>

87. Professor Keep’s research found that to prevent skills depreciation and to manage the expected future digital skills related requirements of our economy, a renewed focus on lifelong learning with an adult learning system to suit is required. His research also highlighted the need for policy makers to secure labour market intelligence on future digital skills needs and to adopt a sectoral approach to ensure policies are crafted in a way that addresses specific sectoral needs and circumstances.

88. Professor Keep’s work cites the attitude of employers and managers towards digital innovation as crucial in determining the successful application of advances of digital innovation in the UK and Scottish economies. Where businesses perceive workers as an asset and source of value add where technological development can augment their productivity, digital innovation is more likely to be successful. Where businesses regard labour as a cost to be minimised, digital innovation may be used to replace workers where it brings cost savings.

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<sup>75</sup> Centre for Cities (2018), [‘The rise of the robots could compound Britain’s North/South divide – with 1 in 4 jobs at risk in cities outside the South’](#).

<sup>76</sup> Scottish Government (2018), [‘Technological change and the Scottish labour market’](#).

<sup>77</sup> Roberts *et al.* (2019), [‘The future is ours: Women, automation and equality in the digital age’](#).

<sup>78</sup> Keep E. (2019), ‘The impact of digital innovation on education, training and skills – some initial thoughts’, unpublished.

89. Alongside digital skills, a report published by Nesta highlights that skills such as interpersonal skills, higher-order cognitive skills, and systems skills are likely to be in greater demand in the future as digital innovations develop.<sup>79</sup>

90. The Trade Unions Congress (TUC) have also recently published research making a number of recommendations how the UK as a whole can move to a net zero-carbon economy and achieve a fair transition to an economy with greater use of technology.<sup>80</sup> The TUC recommended that delivering a national entitlement to skills, to give everyone the confidence to adapt to changing demands should be a key focus.

91. By definition, automation is the replication and replacement of repetitive tasks formerly carried out by humans by technology. Low skilled, repetitive jobs are therefore considered most at risk of impact from automation in the future. Whether or not innovations in digital technology result in net increases in employment, automation in particular is likely to have significant impact on the skills demanded in our economy in future.<sup>81</sup>

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<sup>79</sup> Bakhshi and Schneider (2017), '[The Future of Skills: Employment in 2030](#)'.

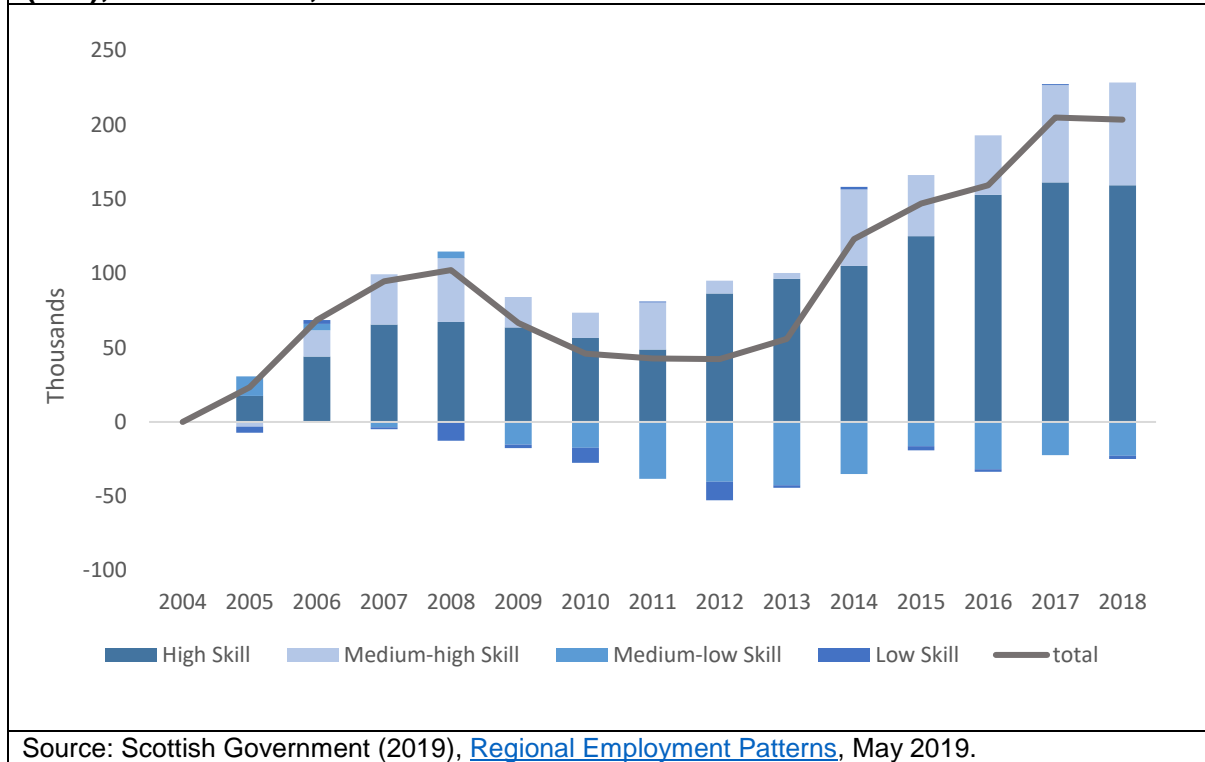
<sup>80</sup> TUC (2019), '[How industrial change can be managed to deliver better jobs](#)'.

<sup>81</sup> ONS (2019), '[Which occupations are at highest risk of being automated?](#)'.

## The Role of the Skills System in Scotland’s Labour Market

92. Scotland’s skills system plays a crucial role in the labour market. Data from the Annual Population Survey suggests that of the net increase in employment in our economy over the past 14 years, all jobs have been either high skilled (e.g. professional occupations) or medium-high skilled (e.g. skilled trades) (Figure 7).

**Figure 7: Cumulative increase in occupation skills level of employment (16+), 2004 to 2018, Scotland**



Source: Scottish Government (2019), [Regional Employment Patterns](#), May 2019.

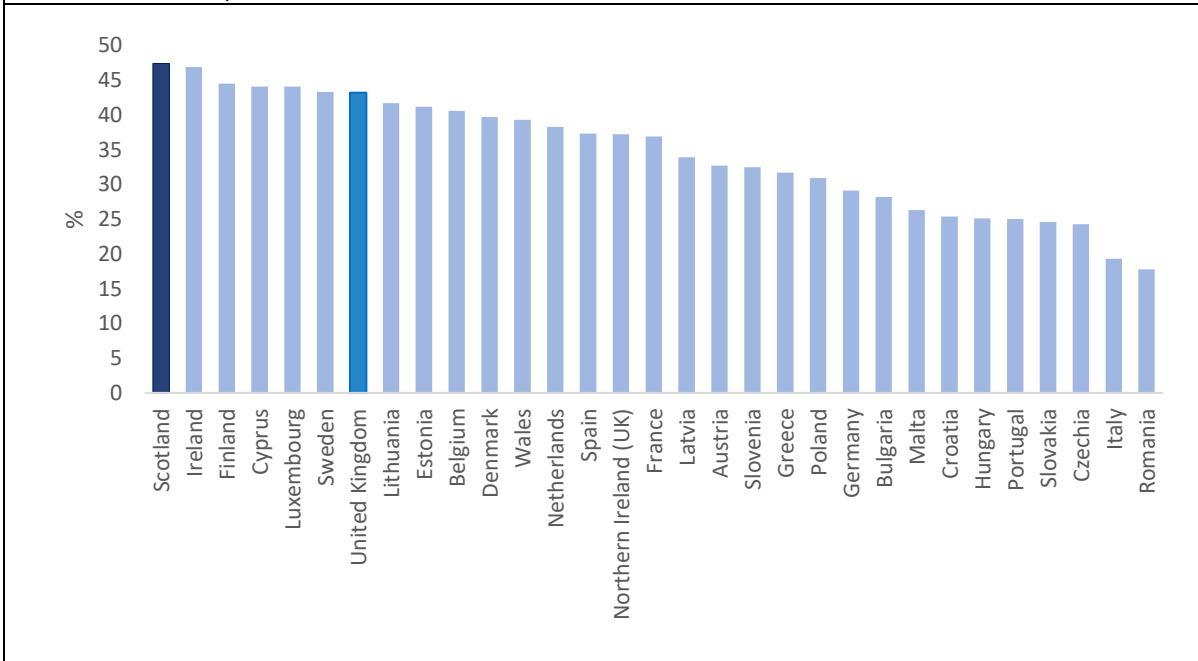
93. However, some evidence suggests a growing trend of job title inflation – where jobs previously categorised as low skilled are increasingly given new job titles associated with medium/highly skilled.<sup>82</sup> This may mask the growth of low skill and low productivity work in Scotland, with little improvement to wage levels.

94. Scotland now has a highly qualified and highly skilled workforce and this has been improving over time. In 2018, Scotland had more people (47.4%) aged 25-64 who are tertiary level (levels 5-8) educated than any other EU country (Figure 8).

<sup>82</sup> Holmes C. and K. Mayhew (2012), [‘The Changing Shape of the UK Job Market and its Implications for the Bottom Half of Earners’](#).



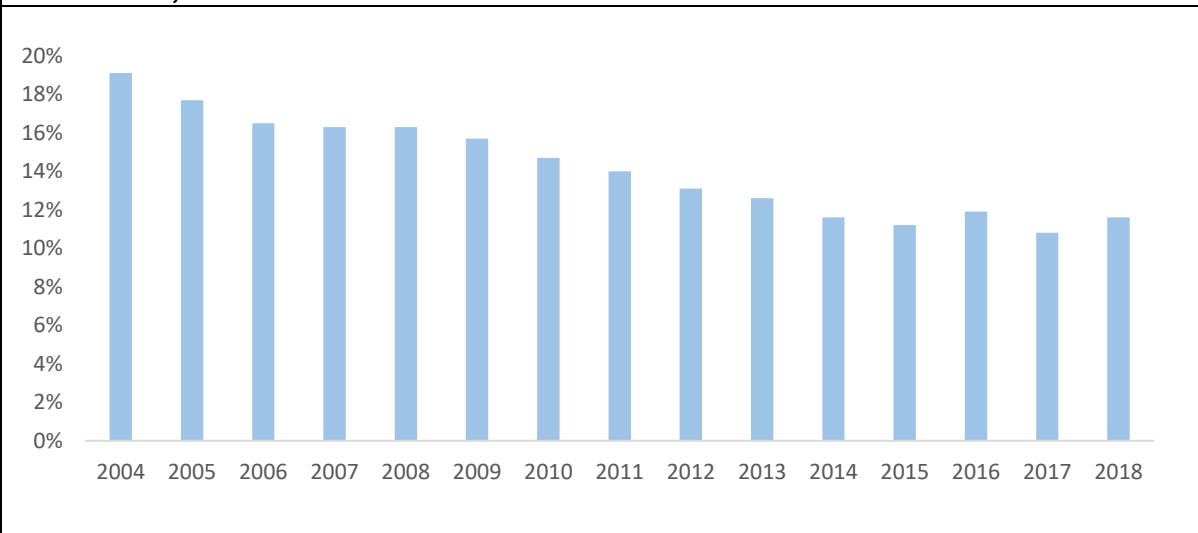
**Figure 8: Percentage of population (25-64) who are tertiary level educated, EU Countries, 2018**



Source: EUROSTAT (2019), [Proportion of tertiary level educated people aged 25-64 year olds](#), Apr. 2019.

95. In the 12 years to 2015, the proportion of Scotland's workforce with low or no qualifications has declined steadily (Figure 9). However, progress in reducing low or no qualifications has stagnated in the past 3 years and rose between 2017 and 2018.

**Figure 9: Percentage of population (16-64) with low or no qualifications, 2004-2018, Scotland**



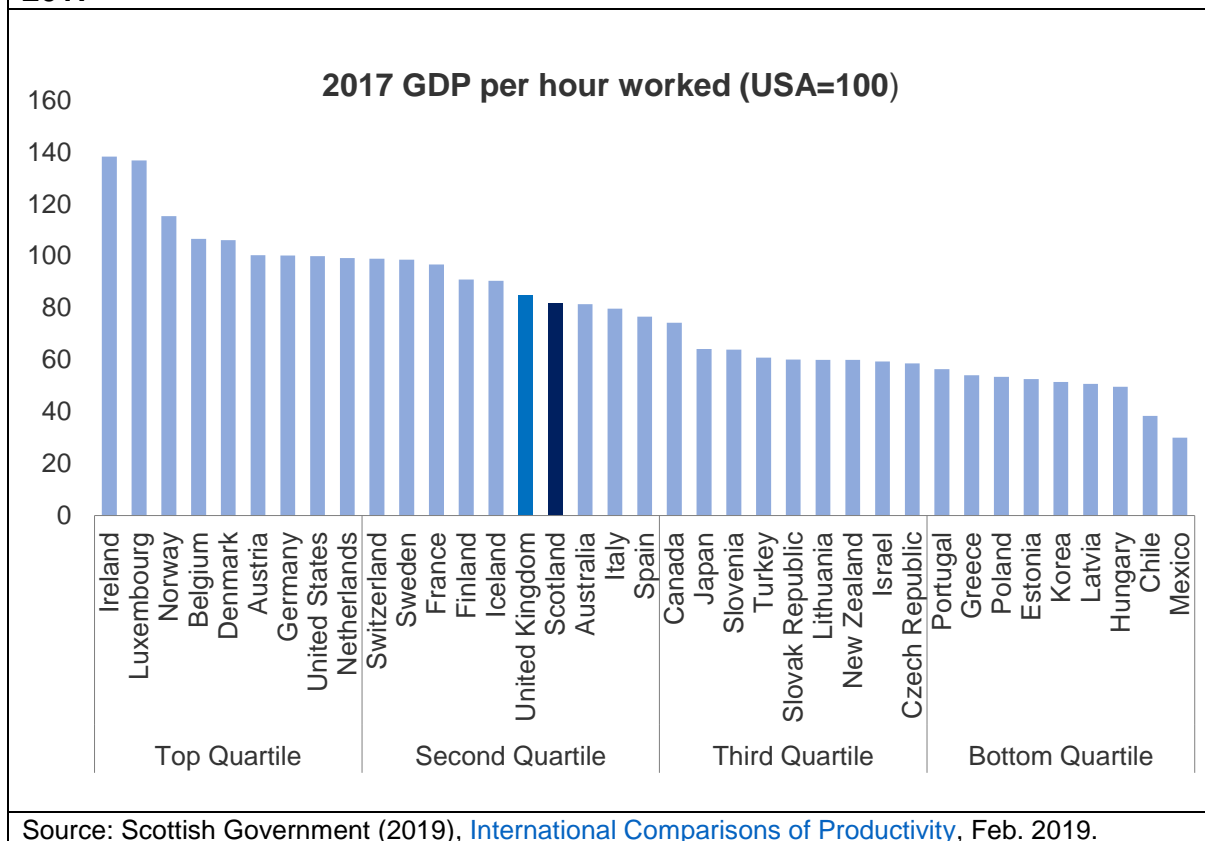
Source: Scottish Government, [Regional Employment Patterns](#), May 2019.

96. Although demand for skills is driven by economic growth, skills development and a better alignment between skills demand and supply can also boost productivity and economic growth.

97. However, Scotland's overall strong recent record on education and skills has not transferred to productivity performance. Although Scotland's post-recession productivity performance has compared well against the UK – since 2007 productivity in Scotland has grown 10.8%, compared to growth of 2.7% in the UK<sup>83</sup> – when compared internationally, Scotland's productivity has shown little progress in the past decade, remaining 16<sup>th</sup> among the OECD from 2007 to 2017 (Figure 10).

98. Lower productivity growth is not confined to Scotland or the UK. Productivity growth in the Euro area and for advanced economies as a whole has been markedly low compared with 20 years ago. For the Euro area it was around 0.5% in 2016 compared with approximately 2% in 1996. Explanations centre around a reduced rate of innovation and adoption of new technology than in the past.<sup>84</sup>

**Figure 10: Scotland's productivity rank among OECD member countries, 2017**



<sup>83</sup> Scottish Government (2019), '[Labour Productivity Statistics Quarter 4 2018](#)'.

<sup>84</sup> European Central Bank (2016), '[The Productivity Challenge for Europe](#)'.

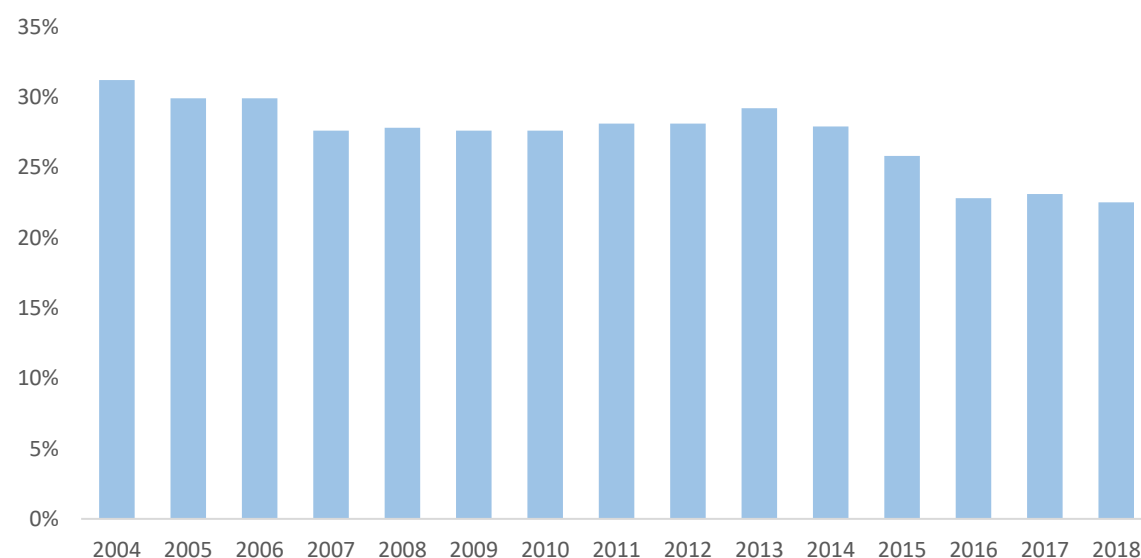
## Skills Gaps

### Matching skills offer and employers' demand

99. Job-related training has the potential to address skills gaps in the workforce more rapidly and more efficiently than formal education.<sup>85</sup> Employers and employees can benefit from training activities in terms of improved productivity and higher wages.<sup>86</sup> This holds true even when training has been undertaken with a previous employer.<sup>87</sup>

100. While formal education provision and take-up has increased over the last decade, job-related training in Scotland – a key aspect of skills development provision – has steadily declined over the past 15 years. The percentage of employees aged 16-64 who received job-related training<sup>88</sup> in the previous 3 months declining from 31.2% in 2004 to 22.5% in 2018. There has been a steady decline since 2013 and not in the immediate aftermath of the recession (post 2008), so explanations for this trend are likely to go beyond short term cost cutting of firms as a reaction to the global recession (Figure 11).

**Figure 11: Percentage of employees (16-64) who received job-related training in the last three months, 2004-2018, Scotland**



Source: Scottish Government, ['Regional Employment Patterns'](#), May 2019.

<sup>85</sup> OECD (2019), ['OECD Skill Strategy 2019'](#).

<sup>86</sup> See e.g. Blundell R. et al. (1999) ['Human capital investments: The returns from education and training to the individual, the firm and the Economy'](#), table 2, and figure 5.1 of another paper from IFS authored by Dearden L. et al. (2000), ['Who gains when workers train? Training and corporate productivity in a panel of British industries'](#).

<sup>87</sup> See e.g. Blundell R. et al. (1999) ['Human capital investments: The returns from education and training to the individual, the firm and the Economy'](#), page 8.

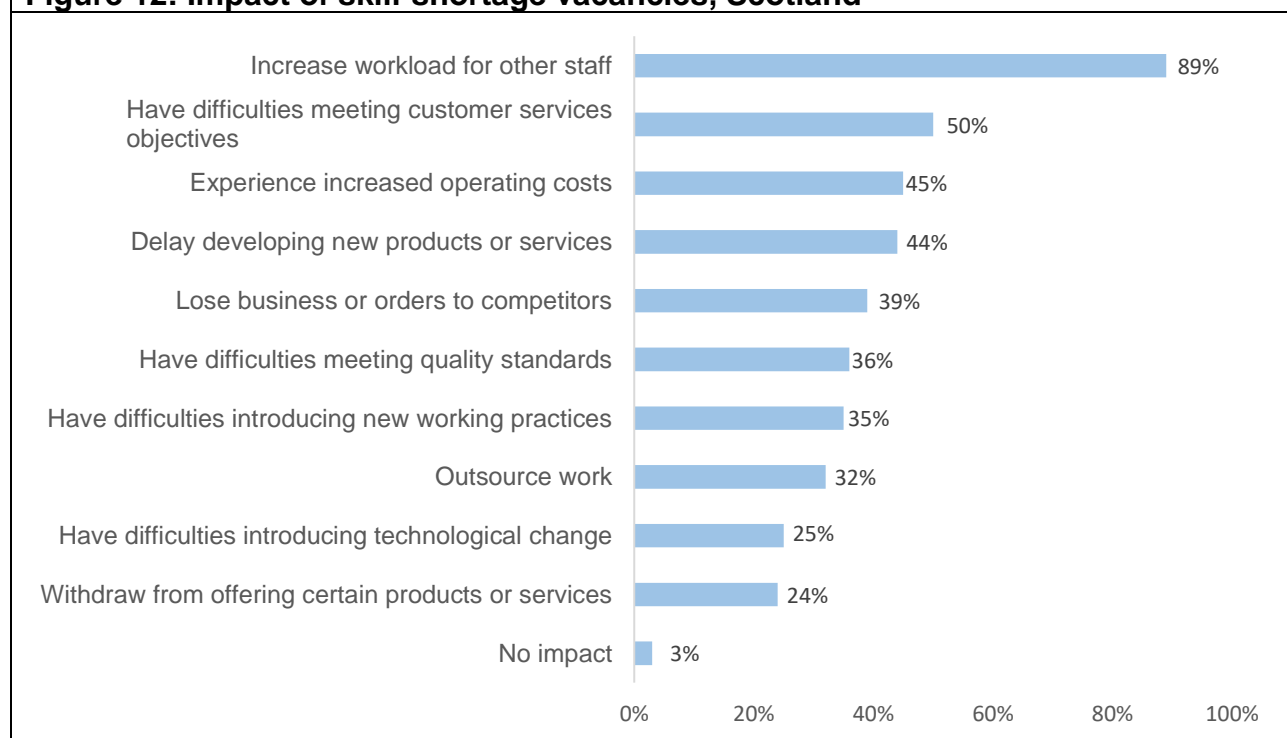
<sup>88</sup> In the Annual Population Survey, job related training is defined as any education or training activity connected with the current job, or a job that the person might be able to do in the future.

## Current Skills Gaps in Scotland

101. Skills gaps can have a widespread negative impact on Scotland’s economy through reduced productivity, delays to new product/services development and difficulties introducing technological change. The OECD has argued a key drag on labour productivity in the UK in recent years has been a misalignment of skills demand and supply – reflected in a high proportion of the UK workforce trained in a field of study not related to their job.<sup>89</sup>

102. Figure 12 shows the range of negative impacts of skill-shortage vacancies reported by businesses, with increased workload for staff the most commonly cited impact.

**Figure 12: Impact of skill-shortage vacancies, Scotland**



Source: UK Department for Education (2018), [‘Employer Skill Survey 2017 – Scotland toolkit’](#), Oct. 2018; Base: all establishments with hard-to-fill vacancies due to skill shortages (N=505).

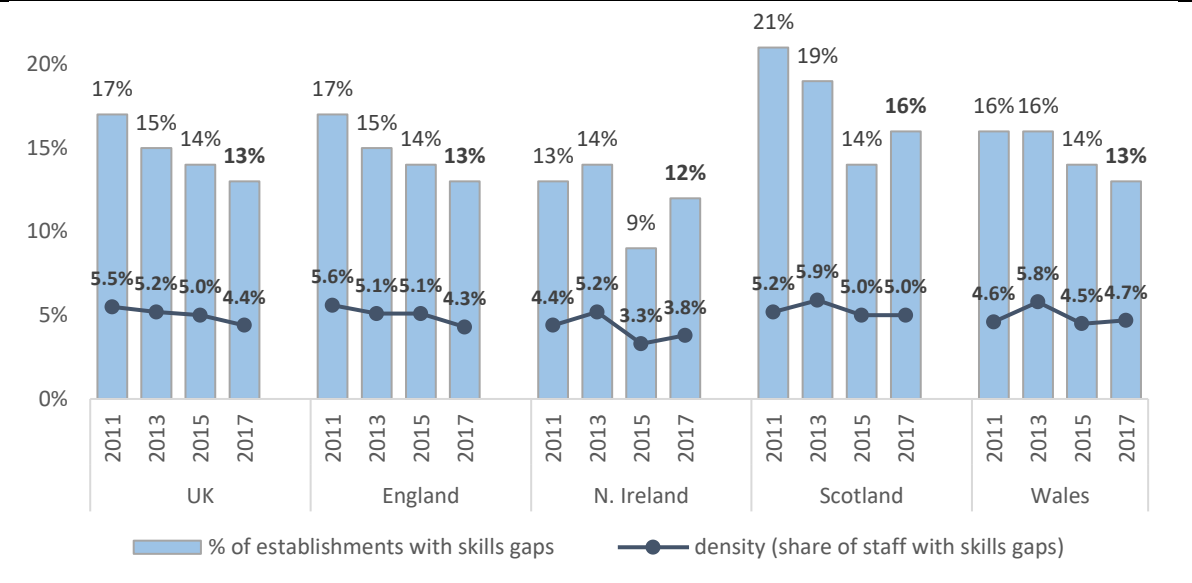
103. The Employer Skill Survey (ESS)<sup>90</sup> shows that in 2017, 16% of establishments in Scotland reported skills gaps for their employees, higher than in the UK (13%).<sup>91</sup> Since 2011, Scotland has seen a 5 percentage point fall in the number of establishments reporting skills gaps and the UK as a whole saw a decline of 4 percentage points over the same period (Figure 13). However, for Scotland and Northern Ireland, the percent of establishments reporting skills gaps increased between 2015 and 2017 while there was a decline at the UK level.

<sup>89</sup> OECD (2017), [‘Getting Skills Right: United Kingdom’](#).

<sup>90</sup> UK Department for Education (2018), [‘UK Employer Skills Survey 2017’](#). This is a biannual UK-wide survey providing information from over 87,000 employer establishments across the UK on skills needs, skills use and skills development.

<sup>91</sup> The proportion of establishments reporting skills gaps is defined as “incidence” of skills gaps. Also, the proportion of employees with skills gaps over total employment is defined as “density”.

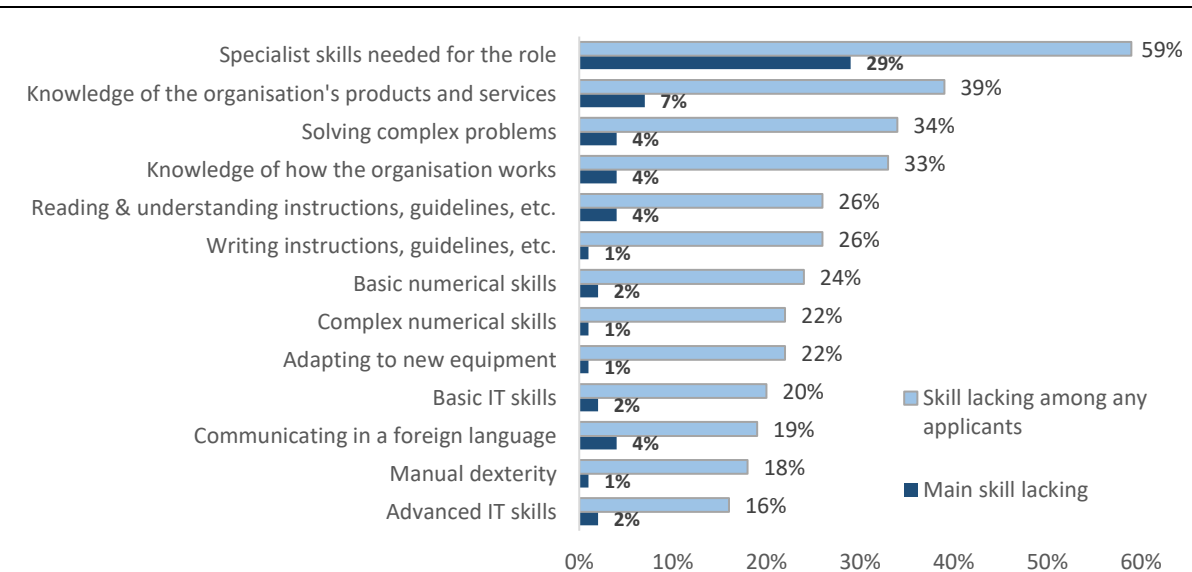
**Figure 13: Incidence and density of skills gaps over time by country**



Source: UK Department for Education (2018), '[UK Employer Skills Survey 2017](#)'; Base: All establishments (base size: UK 87,430; England 71,527; NI 3,973; Scotland 6,017; Wales 5,913).

104. The ESS divides skills gaps into technical and practical skills and people and personal skills (Figures 14 and 15). For businesses in Scotland reporting skill-shortages vacancies, the most common technical skill gaps among applicants were: specialist skills needed for the role (59%), knowledge of the organisation's product and services (39%), and solving complex problems (34%) (Figure 14). For people and personal skills there were gaps in: ability to manage and prioritise own tasks (46%), managing their own feelings, or those of others (42%), and customer handling skills (40%) (Figure 15).

**Figure 14: Skills lacking among applicants: Technical and practical skills, Scotland**



Source: UK Department for Education (2018), '[Employer Skill Survey 2017 – Scotland toolkit](#)', Oct. 2018; Base: All with skill-shortage vacancies – up to two occupations followed up (N=552); Figures are shown as a percentage of all skill shortage vacancies followed up and not as a percentage of all establishments.

**Figure 15: Skills lacking among applicants: People and personal skills, Scotland**

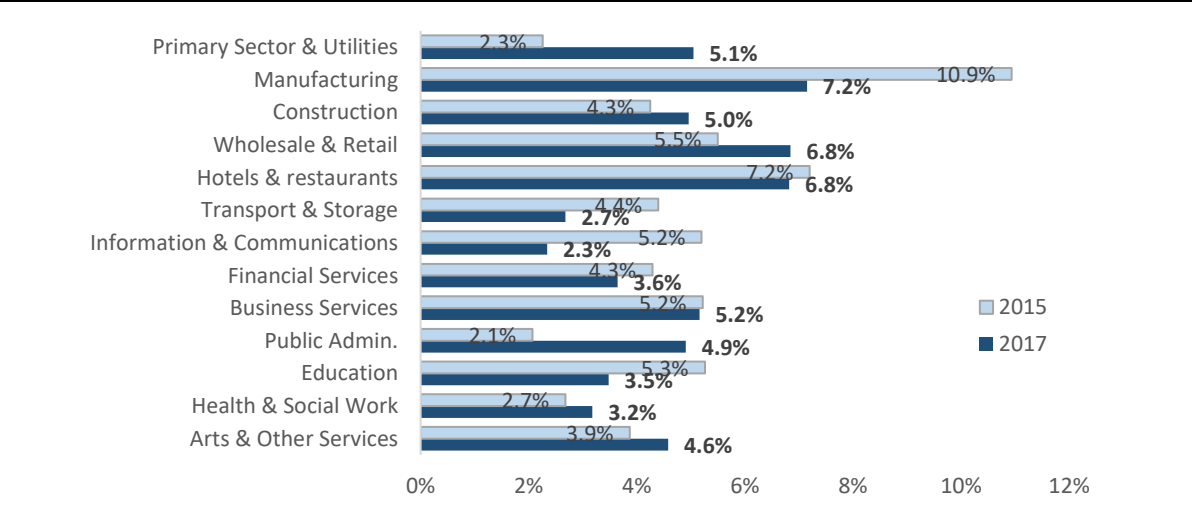


Source: UK Department for Education (2018), '[Employer Skill Survey 2017 – Scotland toolkit](#)', Oct. 2018; Base: All with skill-shortage vacancies – up to two occupations followed up (N=552); Figures are shown as a percentage of all skill shortage vacancies followed up and not as a percentage of all establishments.

### Sector breakdown of skills gaps

105. Evidence from the ESS (2017) suggests there is variation in skills gaps by sector and occupation. In 2017, the highest skills gap was in manufacturing (7.2%) and the lowest skills gap (2.3%) was in IT and communications. The density<sup>92</sup> of skill gaps changed markedly from 2015 to 2017. The largest percentage point increase was for both Primary Sector and Utilities and Public Admin (+2.8 percentage points) and the largest percentage point decrease was for Manufacturing (-3.7 percentage points) (Figure 16).

**Figure 16: Density of skill gaps by sector, Scotland**



Source: UK Department for Education (2018), '[Employer Skill Survey 2017 – Scotland toolkit](#)', Oct. 2018; Base: All establishments (base sizes range from 158 in Public Admin to 933 in Wholesale and Retail).

<sup>92</sup> In the context of skills gaps, density is defined as the number of staff reported as not fully proficient as a proportion of all employment.

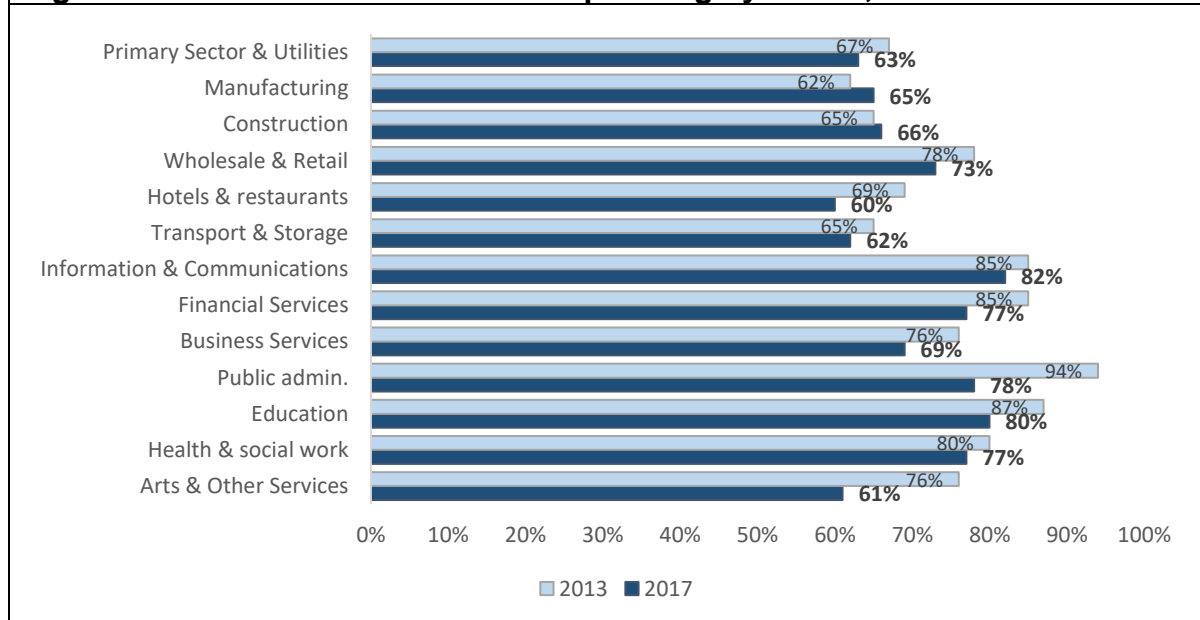
106. There is a gender dimension to the skills gaps that impacts on inclusive growth. A background labour market report commissioned by the Scottish Government’s Just Transition commission – that advises the Scottish Government on the transition to a carbon neutral economy – reports that a persistent feature of the school, college, and university and apprenticeship systems is the highly gendered nature of study for subjects relevant to digital skills specifically and STEM (Science, Technology, Engineering and Mathematics) subjects more generally.<sup>93</sup>

107. The proportion of STEM employers in Scotland with skills shortage vacancies was 6.4% in 2015 and 7.7% in 2017 (incidence). The 2017 figure was higher than the average incidence for all sectors in Scotland (6%), suggesting that STEM skills are particularly difficult to obtain for employers. The Scottish Government has responded to this specific issue with STEM-supporting policies set out in the Scottish Government’s STEM strategy.<sup>94</sup>

### Upskilling

108. Even when establishments do not report a skills gap, they may still need to invest in skills to keep pace with emerging technology or sector specific requirements. The ESS (2017) reports that 69% of employers expect that at least some of their staff will need to acquire new skills or knowledge over the next twelve months (see share by industry in Figure 17). This suggests employers perceive the development of skills as an ongoing process rather than a one-off event.

**Figure 17: Prevalence of a need for upskilling by sector, Scotland**



Source: UK Department for Education (2018), ‘[Employer Skill Survey 2017 – Scotland toolkit](#)’, Oct. 2018; Base: All establishments in Module 2 (base sizes range from 75 in Public Admin to 463 in Wholesale and Retail).

<sup>93</sup> Scottish Government (2019), ‘[Just Transition Commission: Background report](#)’.

<sup>94</sup> Scottish Government (2017), ‘[Science, Technology, Engineering and Mathematics: education and training strategy](#)’.

109. In 2017, Scottish employers, prompted by ESS interviewers, reported that several reasons induce them to expect higher training needs – new legislative or regulatory requirements (42%), the introduction of new technologies or equipment (41%), and the development of new products and services (39%).
110. However, there is also evidence of skills under-utilisation within Scotland's labour force. With ESS (2017) reporting that, a third of employers (35%) reported having at least one under-utilised employee, that is staff with qualifications and skills beyond those required for the role (up from 32% in 2015). A possible cause may be a mismatch between employees' qualifications and employers' needs.



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