Introduction

This document collates evidence about the business environment in the West of England and supports the West of England Local Industrial Strategy. For more information on the strategy and other related evidence, please visit the West of England Combined Authority website.

Geography

The document refers to the West of England region. This is taken to mean the West of England Local Enterprise Partnership area, which is made up of four unitary authorities:

- Bath and North East Somerset
- Bristol
- North Somerset
- South Gloucestershire

Contents

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4. **Scale-ups**
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Summary

This section summarises results from the rest of the report.

Business demography

- The West of England has slightly fewer businesses per head than the UK overall at 395 per 100,000 residents in 2018.

- Businesses start and end more slowly in the region and the business population is growing slowly at 0.1% growth in 2017.

- Long term survival rates are higher in the West of England than comparator combined authorities, with 46% of businesses started in 2012 surviving for 5 years.

- Levels and trends of self-employment in the region are similar to the rest of the UK with 10% of the working-age population being self-employed.

Productivity

- Productivity in the West of England is slightly greater than the UK overall at £33.72 GVA per hour worked. However, recent growth is at the same rate as the rest of the UK: the region is also subject to the productivity puzzle.

- The region has a large number of low-productivity firms as demonstrated by analysis of firm-level productivity.

- The West of England is home to a number of initiatives that nurture high-productivity firms, e.g. enterprise zones, incubators and accelerators such as SETsquared.

Sources: See corresponding later sections.
Productivity (continued)

Possible factors contributing to productivity:

▪ **Trade:** Levels of trade are relatively low in the region. Goods exports are valued at only 16% of GVA and services at 9.8%, compared to 18% and 15% respectively for the UK.

▪ **Management Practices:** Research from a local university has shown that management practices such as talent development, performance monitoring and staff engagement are important in addressing productivity.

▪ **Technology Uptake:** Similarly, research highlights adoption of technology as a key factor in productivity.

▪ **Workforce Diversity:** Indicators suggest the region has a more diverse workforce than the UK overall, but there is room for improvement. Research has found that workplace diversity can increase productivity.

Scale-Ups

**Scale-up businesses**, i.e. those that are expanding quickly, are on average 42% more productive than their peers:

▪ The West of England has the sixth-highest number of scale-ups of all Local Enterprise Partnership areas, at 63 per 100,000 people.

▪ The region has strong scale-up growth compared to comparator areas at 5.4 new scale-ups per 100,000 people per year.

▪ Common scale-up sectors include *business & professional services* and *built environment & infrastructure*.

▪ Scale-ups report facing challenges in areas such as Research and Development investment, finance, workspace and skills.

Sources: See corresponding later sections.
Summary

Sectors

- The West of England has a diverse mix of sectors that mirrors the wider UK. Large employing sectors include retail trade and vehicle repair, healthcare, education and professional, scientific and technical work.

- The region is specialised in finance, insurance and information & communication when compared to the UK.

The Local Industrial Strategy identifies distinct clusters of employment in three innovative sectors:

**Advanced engineering and aerospace** includes cutting-edge design, engineering and aerospace activity:

- The region is home to the UK’s largest aerospace/defence cluster.
- Examples include Airbus and Rolls Royce.

**Creative, cultural & digital industries** include businesses ranging from software publishing to motion picture production:

- Employment in this sector grew by 28% between 2015 and 2017.
- Examples include Aardman Animations and Graphcore.

**Financial, business and legal services** include professional services businesses, which often make use of new technological innovations:

- The sector employs 58,000 people in the West of England, which is 9.6% of total employment in the region.
- Examples include DAS and Osborne Clarke.

Sources: See corresponding later section.
BUSINESS DEMOGRAPHY
Business demography

This section outlines the characteristics of the West of England’s business population.

Business concentration

There are 45,005 businesses in the West of England. That is 395 businesses per 10,000 residents. This is below the UK average and in the middle of comparator areas.

Figure 1: Number of businesses per 10,000 people (2018)

Business size

78% of businesses in the West of England have fewer than five employees. The results below are similar to those for the UK overall.

Figure 2: Employee size of businesses in the West of England (2018)

Source: Office for National Statistics (ONS) Business; Activity, Size and Location
Business turnover

72% of businesses in the West of England have turnover of £249,000 or less. The results below are again similar to those for the UK overall.

Figure 3: Turnover of businesses in the West of England (2018)

Business lifecycle

The business start rate is the number of new businesses as a proportion of the existing business population. The closure rate is similarly defined for businesses that close. The UK had the following rates in 2016:

- Business start rate: 14.6%
- Business closure rate: 10.2%

The difference between these rates is the net growth rate, i.e. the rate at which the business population is growing. The UK’s net business growth rate for 2016 was 4.5%.

Figure 4 on the following page compares these rates with those for the EU overall, with the green figures indicating net growth rate. It shows that the UK had higher business start, closure and net growth rates than the EU overall in 2016.

Sources: ONS Business; Activity, Size and Location (Business Turnover); Eurostat Business Demography (Business Lifecycle)
In 2017, the West of England had the following rates:

- **Business start rate:** 11.2%
- **Business closure rate:** 11.1%

The region has lower business birth and closure rates than other areas and the UK overall.

**Sources:** Eurostat Business Demography (2016 Rates); ONS Business Demography (2017 Rates)
Business lifecycle (continued)

The West of England has a net business growth rate of 0.1%. That is, businesses are starting at a slightly faster rate than they are closing. Although this rate is positive, it is lower than other areas and the UK overall.

Figure 7: Business net growth rate (2017)

- Greater Manchester: 5.8%
- Liverpool City Region: 3.3%
- London: 1.0%
- UK: 0.9%
- Cambridgeshire and Peterborough: 0.7%
- West Midlands: 0.7%
- West of England: 0.7%
- Tees Valley: -0.7%
- Sheffield City Region: -1.5%

The net growth rate decreased for all areas in 2017, with the West of England experiencing a similar decrease to the UK overall.

Source: ONS Business Demography
Business lifecycle (continued)

The latest figures on the survival of businesses are for those started in 2016. Of these, 90.4% survived for one year in the West of England. This is lower than most other areas.

**Figure 9: 1 Year survival rates for businesses started in 2016**

<table>
<thead>
<tr>
<th>Region</th>
<th>Survival Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tees Valley</td>
<td>92.6%</td>
</tr>
<tr>
<td>Cambridgeshire and Peterborough</td>
<td>92.1%</td>
</tr>
<tr>
<td>Sheffield City Region</td>
<td>92.1%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>91.9%</td>
</tr>
<tr>
<td>UK</td>
<td>91.5%</td>
</tr>
<tr>
<td>Liverpool City Region</td>
<td>91.5%</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>91.5%</td>
</tr>
<tr>
<td>West of England</td>
<td>90.4%</td>
</tr>
<tr>
<td>London</td>
<td>89.8%</td>
</tr>
</tbody>
</table>

Longer-term results are available for businesses started in 2012.

**Figure 10: 5 Year survival rates for businesses started in 2012**

- **West of England**: 46.0%
- **Cambridgeshire and Peterborough**: 45.1%
- **Sheffield City Region**: 44.1%
- **Tees Valley**: 43.9%
- **UK**: 43.2%
- **Liverpool City Region**: 41.7%
- **West Midlands**: 41.7%
- **Greater Manchester**: 41.0%
- **London**: 39.3%

46% of businesses started in 2012 in the West of England survived for 5 years. This is more than in any comparator area.

Source: ONS Business Demography
Business demography

Self-employment

10% of the working age population in the West of England are self-employed. This is a little below the UK overall but higher than most comparator areas.

Figure 11: % of Working-age population who are self-employed (2018)

Self-employment has increased in the West of England in line with the UK overall.

Figure 12: % of Working-age population who are self-employed over time for comparator areas including the West of England and the UK

Source: ONS Annual Population Survey via NOMIS
This section explores the productivity challenge facing the West of England.

**National productivity**

UK growth in productivity has been slow in recent years:

- The latest figure from the Office for National Statistics shows that labour productivity for 2019 Q1\(^1\), decreased by 0.2% compared with the same quarter in the previous year.
- This contrasts with the positive growth rate observed before 2008.

Productivity growth has remained slow since 2010, a situation often described as the UK’s ‘productivity puzzle’. The problem is not unique to the UK, as other European countries have also experienced weak productivity growth in recent years. The UK’s level of productivity, however, is lower than the average for European Union countries.

**Regional productivity**

The latest regional productivity figures estimate Gross Value Added (GVA) per hour worked in the West of England at £33.72 for 2017. This is a smoothed estimate which accounts for volatility when measuring smaller areas.

**Figure 13: GVA per hour worked (£) (2017)**

<table>
<thead>
<tr>
<th>Region</th>
<th>GVA per Hour (£)</th>
</tr>
</thead>
<tbody>
<tr>
<td>London</td>
<td>£44.87</td>
</tr>
<tr>
<td>West of England</td>
<td>£33.72</td>
</tr>
<tr>
<td>UK</td>
<td>£33.65</td>
</tr>
<tr>
<td>Greater Birmingham and Solihull</td>
<td>£31.62</td>
</tr>
<tr>
<td>Greater Cambridge and Greater Peterborough</td>
<td>£31.40</td>
</tr>
<tr>
<td>Tees Valley</td>
<td>£30.46</td>
</tr>
<tr>
<td>LEP Median</td>
<td>£30.44</td>
</tr>
<tr>
<td>Liverpool City Region</td>
<td>£30.36</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>£30.19</td>
</tr>
<tr>
<td>Sheffield City Region</td>
<td>£27.62</td>
</tr>
</tbody>
</table>

**Sources:**
- ONS Labour Productivity Bulletin (UK Productivity)
- ONS Productivity Puzzle Article (Wider Commentary)
- ONS Sub-regional Labour Productivity Indices (Regional Productivity)

\(^1\) As measured by output (GVA) per hour.
Productivity in the West of England has risen at a similar rate to the UK and other LEP areas. Therefore the region is also subject to the ‘productivity puzzle’.

To understand productivity at a more granular level, the Office for National Statistics has published firm-level distributions of productivity, which are shown on the following page.

These refer to 2014 (the latest data available), and cover only the non-financial business economy. That is, they exclude the agricultural and financial sectors as well as some small firms, the self-employed and the public sector. As such, the results represent approximately two-thirds of the UK economy in terms of gross value added.

The figures are nominal, i.e. not adjusted for inflation.

Source: ONS Sub-regional Labour Productivity Indices (Regional Productivity)
Regional productivity (continued)

The chart shows that:

- The UK has a high proportion of firms with lower productivity, i.e. the peak at around £35-£40.
- The UK has a ‘long tail’, i.e. a low proportion of firms with high productivity.

For the West of England, this problem is more pronounced:

- The region has a larger proportion of firms at the low-productivity peak.
- The region also has a smaller proportion of firms with higher productivity.

Source: ONS Regional Firm-Level Productivity Distribution Analysis
Regional productivity (continued)

The West of England has a number of initiatives that seek to nurture high-productivity businesses.

Firstly, the region is home to a network of Enterprise Zones and Areas. They free up key development sites, consolidate infrastructure, attract business and create jobs. These areas deliver long-term, sustainable growth based on cutting-edge technology and enterprise.

Figure 16 shows the locations of these zones.

Innovative projects within the zones include:

- **The UK’s largest aerospace cluster**, with plans for a new aerospace park.

- **The Bristol and Bath Science Park**, home to innovation and technology businesses such as the National Composites Centre.

- **Foodworks™**, a significant food and drink development centre under development.

Figure 16: Enterprise Zone and Area locations in the West of England

Source: West of England Local Industrial Strategy
Regional productivity (continued)

The region is also home to a number of businesses incubators and accelerators: innovation spaces which provide employment space and support to growing businesses. These are often based within the enterprise zones and areas themselves.

Examples include:

**Engine Shed**

Engine Shed is a unique hub where businesses, entrepreneurs, academics, social innovators, and corporates collaborate. Phase 2 will provide additional space and grow-on capacity for fast growing firms.

**Future Space**

Future Space supports businesses working in high-tech areas including robotics, digital and creative technologies, health tech and biosciences. It is estimated that it will bring an economic boost of £85m over the next 10 years.

**SETsquared**

SETsquared supports entrepreneurs, start-up and scale-up companies across a range of high-tech and high-growth areas of activity including sustainable technologies, digital platforms, advanced engineering and social enterprise. It has helped over 1,000 start-ups to raise more than £1bn of investment.

**Unit DX**

Unit DX is a science incubator based in Bristol city centre, providing specialist laboratory facilities and science-focussed business support. It was established in 2017 and has rapidly grown to house 32 businesses.

Source: West of England Local Industrial Strategy
Productivity: possible contributing factors

Here we examine factors that may contribute to productivity levels in the region.

**Trade in goods**

In 2017, the West of England exported £5.4 billion of goods, equivalent to 16% of GVA. This is less than the UK overall and some other areas.

In the same year, 11.8% of businesses in the region were involved in exporting goods. This is higher than the UK overall but lower than several other areas.

**Figure 17: Value of goods exports as a % of GVA (2017)**

<table>
<thead>
<tr>
<th>Area</th>
<th>Value of Goods Exports as % of GVA</th>
</tr>
</thead>
<tbody>
<tr>
<td>West Midlands</td>
<td>26.7%</td>
</tr>
<tr>
<td>Tees Valley</td>
<td>24.1%</td>
</tr>
<tr>
<td>Cambridgeshire and Peterborough</td>
<td>23.2%</td>
</tr>
<tr>
<td>Liverpool City Region</td>
<td>19.1%</td>
</tr>
<tr>
<td>UK</td>
<td>18.0%</td>
</tr>
<tr>
<td>West of England</td>
<td>16.0%</td>
</tr>
<tr>
<td>Sheffield City Region</td>
<td>13.1%</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>10.0%</td>
</tr>
<tr>
<td>London</td>
<td>8.2%</td>
</tr>
</tbody>
</table>

Source: HM Revenue and Customs Regional Trade in Goods Statistics
Trade in goods (continued)

In 2017, the West of England saw a surplus in trade of goods of 0.5% of GVA. The UK and most comparator areas saw a deficit in trade of goods.

Figure 19: Net services exports as a % of GVA (2017)

Trade in services

In 2016, the West of England is estimated to have exported £3.2 billion of services, equivalent to 10% of GVA. Again, this is below the UK and some other areas.

Figure 20: Estimated value of services exports as a % of GVA (2016)

Sources: HM Revenue and Customs Regional Trade in Goods Statistics; ONS Experimental Regional Trade in Services Statistics
Trade in services (continued)

Figure 21 shows the types of services exported by the West of England in 2016. Those with the largest values are:

- **Insurance and pension services** (total exports of £596 million)
- **Travel** (£560 million)
- **Financial** (£558 million)

Travel and insurance & pensions services make up larger proportions of the region’s exports than they do for any comparator area.

Taking the trade results as a whole, they show a relatively low volume of trade taking place in the West of England. This is one factor which may influence poor productivity in the region. Note statistics on trade have only recently been published at this geographical level. Therefore, we cannot examine trends in trade over time.

Further information on the categories used for service exports is available from ONS via the source.

Source: ONS Experimental Regional Trade in Services Statistics
Management and leadership practices

One factor which may influence productivity in the region and beyond is the prevalence of effective management practices, i.e. the methods used by leaders to empower and improve the effectiveness of their staff and systems.

Examples of such practices include:

- Improved performance monitoring and discussion, such as regular reviews and incentives for high performance
- Training in management and leadership
- Talent development schemes
- Agile project management
- Fostering useful relationships with peer businesses and supply chains

Such practices can reduce costs, improve outputs and make businesses more efficient.

Various research has discussed the importance of management practices in productivity:

- **McKinsey** have studied 14,000 organizations in more than 30 countries. Their research suggests ‘a significant potential for management-led productivity improvements in every country on Earth’.
- The **Office for National Statistics** recently demonstrated a strong link between management practices and labour productivity in the UK.
- The **University of the West of England** recently published research finding that ‘best management practices are a crucial but neglected element in explaining firm productivity’.

Sources:

- ONS Management Practices and Productivity Research
- Nisar et al., *Effect of best management practices on the performance and productivity of small firms*, 2019 (University of the West of England Research)
Management and leadership practices (continued)

Research has also been conducted on the particular factors that affect productivity:

- A study of work-related training on workers’ productivity found that participation in a training programme led to a 9 percent increase in productivity.

- Research using employee survey data found that employee engagement was important.

Notably, there is research focussed on SMEs. Bryson and Forth examined the association between management practices and SME performance in Britain over 2011–2015. They concluded the following:

- SMEs are less likely to use formal management practices than larger firms.

Management practices appear to have demonstrable benefits for those SMEs who use them, being positively associated with firm survival, growth and productivity.

Productivity: possible contributing factors

Sources:

De Grip and Sauermann, The effects of training on own and co-worker productivity: Evidence from a field experiment, 2011 (Work-Related Training);

Brown et al., Workplace Performance, Worker Commitment, and Loyalty, 2011 (Employee Engagement);

Bryson and Forth, The Impact of Management Practices on SME Performance, 2018 (SMEs)
Productivity: possible contributing factors

Adoption of technology

Another possible factor affecting productivity is the degree to which businesses make the most of new and innovative technologies. Examples of technology that can increase productivity include:

- Increased use of data, e.g. in monitoring and decision-making.
- Website analytics to understand user preferences.
- Automated processes, e.g. in manufacturing.
- Cloud computing solutions to enable mobile working.
- Digital communication between employees.

The Confederation of British Industry believes that increasing technology adoption is a key part of solving the UK’s productivity puzzle. They argue the following points:

- The UK lags behind many European economies in adoption of digital technology.
- Increasing business adoption of key technologies and management practices could unlock £100 billion for the UK economy.
- Greater take-up of innovation could lead to a 5% reduction in income inequality.

Sources:

CBI, Great job: solving the productivity puzzle through the power of people (UK and Europe Comparison);
CBI, Driving the adoption of digital technology
Workforce diversity

Research by McKinsey has shown that companies with a more diverse workplace are more likely to produce strong financial results, suggesting increased diversity as a positive factor in improving productivity.

Figure 22 shows employment rate by ethnicity and gender, for the West of England and the UK. It shows that:

- Ethnic minority employment rates in the West of England are higher than in the UK overall.
- Female employment rates in the West of England are higher than in the UK overall.
- There are still disparities in employment in the West of England in terms of gender and ethnicity.

**Figure 22: Percentage point difference between overall and ethnic minority employment rates (2018)**

Sources: ONS Annual Population Survey via NOMIS
Workforce diversity (continued)

Apprenticeships also give an indication of diversity in the workforce.

The gender split of students completing apprenticeships in the West of England is slightly more even than in England overall.

Figure 23: Apprentices by gender (% of total) (2017-18)

However, apprentices in the region have a less diverse ethnic make-up compared to those in England overall.

Figure 24: Apprentices by ethnicity (% of total) (2017-18)

Sources: ONS Annual Population Survey via NOMIS
Centre for Cities analysis

Analysis published by the Centre for Cities suggests that some firms have more potential to increase their productivity than others. It defines three types of businesses:

▪ ‘Local Services’ businesses do not have the potential to sell beyond their local market.

▪ ‘Low-Skilled Exporter’ businesses either sell beyond their local market or have the potential to do so, and require low-skill work.

▪ ‘High-Skilled Exporter’ businesses either sell beyond their local market or have the potential to do so, and require high-skill work.

High-skilled exporter businesses have the greatest potential to increase their productivity.

Compared to other areas, the West of England has the greatest proportion of businesses in the ‘high-skilled exporter’ category, suggesting that the region has high potential to increase productivity.

Figure 25: % of Businesses in ‘high-skilled exporter’ category (2017)

<table>
<thead>
<tr>
<th>Region</th>
<th>% of Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>West of England</td>
<td>20.6%</td>
</tr>
<tr>
<td>Cambridgeshire and Peterborough</td>
<td>19.6%</td>
</tr>
<tr>
<td>Great Britain</td>
<td>16.6%</td>
</tr>
<tr>
<td>Greater Manchester</td>
<td>16.6%</td>
</tr>
<tr>
<td>Tees Valley</td>
<td>13.7%</td>
</tr>
<tr>
<td>West Midlands</td>
<td>13.3%</td>
</tr>
<tr>
<td>Liverpool City Region</td>
<td>12.3%</td>
</tr>
<tr>
<td>Sheffield City Region</td>
<td>11.9%</td>
</tr>
</tbody>
</table>

Sources: [Centre for Cities Article](#); ONS UK Business Counts via [NOMIS](#) (Business Counts by Category)
SCALE-UPS
Scale-ups

This section considers scale-up businesses, i.e. those that are expanding quickly with high turnover or employment growth.

On average they are 42% more productive than their peers.

Scale-up population

The Organisation for Economic Co-operation and Development defines a scale-up as:

An enterprise with average annual growth in employees or turnover greater than 20 per cent per annum over a three year period, and with more than 10 employees at the beginning of the period.

Using this definition, the West of England was home to a total of 715 scale-ups in 2016. This equates to 63 scale-ups per 100,000 people, which is the sixth-highest value out of all Local Enterprise Partnership areas.

Sources: ScaleUp Institute ScaleUp Landscape Report (Average Productivity of Scale-Ups); ScaleUp Institute ScaleUp Manifesto (OECD Definition); ScaleUp Institute ScaleUp Review 2018 (Scale-Up Population)
Scale-ups

Scale-up growth

Between 2014 and 2017, the West of England saw an average increase of 5.4 new scale-ups per 100,000 people per year.

This scale-up growth rate is higher than the median for Local Enterprise Areas and higher than almost all comparator areas. Given that the region’s overall birth rate is lower than comparator areas, this suggests that a high proportion of new businesses in the West of England meet the scale-up criteria.

However, recent scale-up growth does represent a small decrease on the average growth rate between 2013 and 2016 of 6.0. This highlights the need to support scale-ups to continue to thrive in the region.

Source: ScaleUp Institute ScaleUp Landscape Report
Scale-ups

Scale-up sectors

This page displays initial analysis on the nature of scale-up businesses conducted using data from Beauhurst.

The data identify a total of 102 scale-ups within the West of England, and include descriptions of their sectors according to Beauhurst’s own classification. Note that businesses can be classed under more than one sector.

Figure 28: Number of scale-ups by sector (2019) (only sectors with at least 10 businesses)

The data also include more detailed sectors, of which the most common are:

- **Property/land development and construction** (19 scale-ups)
- **Other business and professional services for businesses** (10)

Finally, the data identify buzzwords, i.e. terms associated with a business. Of these, the following are applicable to scale-ups in the West of England:

- **Omni-channel retailing**
- **Biomass and biofuels**
- **FinTech**

We plan to do more with this data source in future work.

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1. Beauhurst use the OECD definition of scale-up businesses.

Source: beauhurst.com
Scale-ups

Scale-up challenges

Despite the large and fast-growing scale-up population in the West of England, scale-ups still report challenges to business growth as identified in our Innovation Evidence Base:

- **Investment in Research and Development:** Spending on R&D by higher education and business is below the median for Local Enterprise Areas (Smart Specialisation Hub LEP Profile).

- **Finance:** There is perceived to be under-investment in some sectors, including Artificial Intelligence, creative and digital.

- **Workspaces:** There is a shortage of flexible and affordable workspaces, particularly affecting businesses that wish to grow. This was reported for the life sciences and composites sectors, amongst others.

- **Skills:** There is a mismatch between skills available in the region and skills required by some sectors, such as in science, technology, engineering and mathematics.

- **Strategic approach:** Some sectors felt the need for coordination and leadership at a sectoral level across private, public & civil society organisations. This would aid external funding bids and help to raise the region’s international profile. Clean energy and fintech reported this challenge amongst other sectors.

SECTOR ANALYSIS
This section explores the sectors that make up the West of England’s business environment. This analysis uses standard industrial classifications for sectors.

**Sector make-up**

Figure 29 on the next page shows the West of England’s sector split by employment. The largest employing sectors are:

- **Wholesale and retail trade; repair of motor vehicles and motorcycles** (85,000 jobs; 14% of all jobs in the region)
- **Human health and social work activities** (78,000 jobs; 13% of all jobs in the region)
- **Education** (56,000 jobs; 9% of all jobs in the region)
- **Professional, scientific and technical activities** (56,000 jobs; 9% of all jobs in the region)
- **Administrative and support service activities** (52,000 jobs; 9% of all jobs in the region).

Figure 30 on the following page shows the West of England’s sector split by employment alongside Great Britain’s. The region has a broad range of sectors, in line with wider Great Britain.

Note that some sectors are grouped together in this chart to enable easy visualisation.

**Source:** ONS Business Register and Employment Survey via NOMIS
### Sector analysis

#### Sector make-up (continued)

**Figure 29: Employment by sector (% of total) (2017)**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Employment (% of total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles</td>
<td>14%</td>
</tr>
<tr>
<td>Education</td>
<td>9%</td>
</tr>
<tr>
<td>Administrative and support service activities</td>
<td>9%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6%</td>
</tr>
<tr>
<td>Information and communication</td>
<td>5%</td>
</tr>
<tr>
<td>Human health and social work activities</td>
<td>13%</td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>9%</td>
</tr>
<tr>
<td>Accommodation and food service activities</td>
<td>7%</td>
</tr>
<tr>
<td>Construction</td>
<td>5%</td>
</tr>
<tr>
<td>Public administration, defence &amp; compulsory social security</td>
<td>5%</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>4%</td>
</tr>
<tr>
<td>Agriculture, mining, electricity, gas, water and waste</td>
<td>2%</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>2%</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>5%</td>
</tr>
<tr>
<td>Recreation, other services and household activities</td>
<td>4%</td>
</tr>
</tbody>
</table>

*Source: ONS Business Register and Employment Survey via NOMIS*
Figure 30: % of total employment by sector (2017)

<table>
<thead>
<tr>
<th>Sector</th>
<th>West of England</th>
<th>Great Britain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Public administration; education; health</td>
<td>27%</td>
<td>26%</td>
</tr>
<tr>
<td>Distribution; transport; accommodation and food</td>
<td>26%</td>
<td>27%</td>
</tr>
<tr>
<td>Professional and administrative services</td>
<td>18%</td>
<td>17%</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>6%</td>
<td>8%</td>
</tr>
<tr>
<td>Information and communication</td>
<td>5%</td>
<td>4%</td>
</tr>
<tr>
<td>Construction</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Recreation, other services and household activities</td>
<td>4%</td>
<td>5%</td>
</tr>
<tr>
<td>Agriculture, mining, electricity, gas, water and waste</td>
<td>2%</td>
<td>3%</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>2%</td>
<td>2%</td>
</tr>
</tbody>
</table>

Source: ONS Business Register and Employment Survey via NOMIS
Employment specialisation

On the previous page we considered the proportion of total employment accounted for by each sector, e.g. manufacturing accounts for 6% of employment in the West of England.

To compare this value with Great Britain we use location quotients, which measure the region’s sector specialisations.

If the value is larger than 1, the region is specialised in the sector, i.e. the sector is a larger part of employment in the region than it is in Great Britain.

The results show that the region is particularly specialised in the following sectors when compared to Great Britain:

- **Financial and insurance activities (LQ = 1.46)**
- **Information and communication (LQ = 1.25)**

**Figure 31: Location quotients by sector for the West of England (2017)**

Source: ONS Business Register and Employment Survey via NOMIS
Employment specialisation (continued)

Figure 32 on the following page maps each sector as a circle and shows several important features:

- The y-axis shows the sector’s current location quotient\(^1\), as discussed on the previous page.
- The x-axis shows the change in location quotient for the sector between 2015 and 2017.
- The size of the circle shows current employment (number of people) in the sector.

The chart illustrates that:

- The two largest employing sectors, public administration; education; health and distribution; transport; accommodation & food, have location quotients close to 1 and have not seen significant changes since 2015.
- The third largest employing sector, professional and administrative services, has reduced in specialisation since 2015.
- The fourth largest employing sector, manufacturing, has also reduced in specialisation since 2015.
- The two sectors in which the region is most specialised, financial & insurance activities and information & communication, have both seen increases in specialisation since 2015. They employ a moderately large number of people.
- The other sectors which have increased in specialisation, real estate activities and agriculture, mining, electricity, gas, water & waste, employ fewer people.

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1. Location quotients are explained on page 39.

Source: ONS Business Register and Employment Survey via NOMIS
Sector analysis

Employment specialisation (continued)

Figure 32: Current location quotient\(^1\), change in location quotient & employment by sector for the West of England

The size of the bubbles indicates employment (number of people) in 2017.

1. Location quotients are explained on page 39.

Source: ONS Business Register and Employment Survey via NOMIS
Productivity

Returning to productivity, this subsection explores how it varies at a sectoral level.

The Office for National Statistics publish estimates of regional productivity for broad sectors. As with earlier productivity estimates, these include only the non-financial business economy. See page 16 for a full explanation of this.

The results show that:

▪ All sectors are estimated to have median productivity between £18,000 and £63,000 per worker in the West of England.

▪ The region has three most productive sectors: information and communication, transportation & storage and mining & utilities.

▪ Meanwhile accommodation and food service activities is the least productive sector.

Source: ONS Regional Firm-Level Productivity Distribution Analysis
Sector analysis

Productivity (continued)

Estimates of sectoral productivity are also available for Great Britain. Figure 34 shows the difference between estimated productivity between the West of England and Great Britain by sector, where positive values represent greater productivity in the West of England.

The estimates show that:

- The West of England is more productive than Great Britain in six sectors, particularly transportation and storage.

- The West of England is less productive than Great Britain in five sector, particularly real estate and administrative and support services.

- The West of England is as productive as Great Britain in manufacturing.

Source: ONS Regional Firm-Level Productivity Distribution Analysis
Innovation sectors

In developing the Innovation theme of our Local Industrial Strategy, we have identified three distinct clusters of employment in innovative sectors. They reflect findings in SQW’s ‘Bristol-Bath Innovation Cluster’ report and the South West England and South East Wales Science and Innovation Audit.

- Advanced engineering and aerospace
  - Includes cutting-edge design, engineering and aerospace activity.
  - Employs 28,710 people in the West of England, which is 4.8% of total employment in the region.

- Creative, cultural & digital industries
  - Includes businesses ranging from software publishing to motion picture production.
  - Saw an increase of 9,525 jobs (28.0%) between 2015 and 2017, surpassing growth elsewhere in England.

- Financial, business and legal services
  - Includes professional services businesses, which often make use of new technological innovations.
  - Employs 58,000 people in the West of England, which is 9.6% of total employment in the region.

Sources: SQW Bristol-Bath Innovation Cluster Report; South West England and South East Wales Science and Innovation Audit
Advanced engineering and aerospace

This sector encompasses cutting-edge design and engineering, including the region’s established aerospace cluster.

Activity in the West of England and beyond demonstrates the importance of this sector:

- The government’s sector deal recognises aerospace as a key sector and one that is important for increasing future exports.
- The West of England boasts the UK’s largest aerospace/defence cluster, and one of the largest such concentrations in Europe.
- Airbus has invested £27 million to develop a new Advanced Wing Integration Centre based at Filton, to focus on improving the UK’s capability around the design and testing of wings.

The National Composites Centre opened in Bristol in 2011 as part of Innovate UK’s High Value Manufacturing Catapult.

The West of England benefits from the presence of many international and local businesses in the sector, such as:

- Airbus
- BAE Systems
- GKN Aerospace
- Honeywell
- National Composites Centre
- Rolls Royce

Source: West of England Local Industrial Strategy
Advanced engineering and aerospace
(continued)

Key statistics:

- Advanced engineering and aerospace employs 28,710 people in the West of England.
- The sector accounts for 4.8% of total employment in the region. This is the second highest value when compared to comparator areas and is above England overall.
- There are 1,960 advanced engineering and aerospace businesses in the West of England (4.4% of all businesses in the region).
- Between 2015 and 2017, employment in the sector decreased by 1,685 jobs (5.5%) in the West of England. However, the previous page demonstrated that there has been investment in this sector since 2017. This may lead to an increase in future jobs.

Sources: ONS Business Register and Employment Survey via NOMIS (Employment); ONS Business Counts via NOMIS (Businesses)
Advanced engineering and aerospace (continued)

Subsectors:

Within the sector, there is most employment in the following subsectors:

- **Engineering activities and related technical consultancy** (49% of employment in the sector)
- **Manufacture of air and spacecraft and related machinery** (28%)
- **Manufacture of machinery and equipment n.e.c.** (9%)

The prevalence of **manufacture of air and spacecraft and related machinery** reflects the role of the aerospace cluster in this sector.

**Figure 36: Advanced engineering and aerospace employment by subsector in the West of England (2017)**

Sources: ONS Business Register and Employment Survey via NOMIS
Subsectors can also be compared to England by calculating location quotients\(^1\). The results show that:

- The West of England is specialised in high value design and engineering as a whole compared to England.

- The region is particularly specialised in *aerospace* compared to England.

- The region is also particularly specialised in *manufacture of weapons & ammunition* and *engineering activities & related technical consultancy* compared to England.

These results reflect our understanding of the region playing a key part in the country’s development of advanced engineering and aerospace.

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1. Location quotients are explained on page 39.

**Sources:** ONS Business Register and Employment Survey via NOMIS
Creative, cultural and digital industries

This sector encompasses businesses which provide a range of services including:

- advertising
- broadcasting activities
- computer consultancy and repair
- data processing
- manufacture of technology
- media services
- motion picture production
- software publishing

In recent years this sector has been the fastest-growing of the three super-sectors.

Recent events showcase the West of England as a distinctive creative hub:

- The government’s creative industries sector deal recognises the region’s ‘globally-significant, high-growth creative cluster’.

- As part of the sector deal, government committed to investing £21 million to support digital companies and start-ups across the UK via a series of support hubs; two of these will be based in Bath and Bristol.

- Bristol is a member of the UNESCO Global Creative Cities Network, demonstrating its success in the creative industries.

- Channel 4 recently chose Bristol’s Finzels Reach as the home of its new Creative Hub.

Source: West of England Local Industrial Strategy
Sector analysis

Creative, cultural and digital industries (continued)

The region is also a centre of significant digital and technology activity:

- The Data City’s recent Digital Tech Census ranked Bristol as having the fourth largest number of digital technology organisations of any UK city.

- Tech City UK (2017) cited Bristol and Bath as the most productive tech cluster in the UK; with £8.1 billion digital tech turnover.

The range of businesses in the region indicates both creative and digital activity, with businesses often combining the two:

- Aardman Animations
- BBC
- Five AI
- Future Publishing
- Graphcore
- HP
- IBM
- ITV
- Silverback Films
- Toshiba Research Europe
- Ultrahaptics
- Yogscast

Sources: The Data City Digital Tech Census; Tech City UK Report
Creative, cultural and digital industries (continued)

Key statistics:

- Creative, cultural and digital industries employ 43,580 people in the West of England.

- The sector accounts for 7.2% of total employment in the region. This is the highest value of comparator areas and is above England overall.

- There are 6,520 creative, cultural and digital businesses in the West of England (14.5% of all businesses in the region).

- Between 2015 and 2017, employment in the sector increased by 9,525 jobs (28.0%) in the West of England. In the same period, employment in the sector grew by only 3.5% in England.

Source: ONS Business Register and Employment Survey via NOMIS (Employment); ONS Business Counts via NOMIS (Businesses)
Creative, cultural and digital industries (continued)

Subsectors:
The following pages show employment by subsector for creative, cultural and digital industries and also location quotients, as for the previous innovation sector.

The largest subsectors are digitally focussed: computer consultancy activities accounts for 21% of employment in the sector and computer programming activities accounts for 14%.

The remaining sectors are a mix of creative and digital subsectors:
- Other telecommunications activities (8% of employment in the sector)
- Other information technology and computer service activities (8%)

- Advertising (8%)
- Data processing, hosting and related activities (7%)
- Architectural activities (6%)

The location quotients show that:
- The West of England is specialised in creative, cultural and digital industries as a whole compared to England.
- The region is most specialised in data processing, hosting and related activities.
- Other particular areas of specialisation are mixed and include computer manufacture and repair, and publishing of journals and periodicals.

These results mirror the region’s specialisation in the information and communication sector, as noted earlier in the report.

1. Location quotients are explained on page 39.

Sources: ONS Business Register and Employment Survey via NOMIS
### Sector analysis

#### Creative, cultural and digital industries (continued)

**Figure 39:** Creative, cultural and digital industries employment by subsector in the West of England (2017) (only subsectors employing over 500 People)

<table>
<thead>
<tr>
<th>Subsector</th>
<th>Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computer consultancy activities</td>
<td>9,000</td>
</tr>
<tr>
<td>Computer programming activities</td>
<td>6,000</td>
</tr>
<tr>
<td>Other telecommunications activities</td>
<td>3,500</td>
</tr>
<tr>
<td>Other information technology and computer service activities</td>
<td>3,500</td>
</tr>
<tr>
<td>Advertising</td>
<td>3,500</td>
</tr>
<tr>
<td>Data processing, hosting and related activities</td>
<td>3,000</td>
</tr>
<tr>
<td>Architectural activities</td>
<td>2,500</td>
</tr>
<tr>
<td>Creative, arts and entertainment activities</td>
<td>1,500</td>
</tr>
<tr>
<td>Publishing of journals and periodicals</td>
<td>1,500</td>
</tr>
<tr>
<td>Motion picture, video and television programme production activities</td>
<td>1,500</td>
</tr>
<tr>
<td>Specialised design activities</td>
<td>1,250</td>
</tr>
<tr>
<td>Repair of computers and peripheral equipment</td>
<td>1,000</td>
</tr>
<tr>
<td>Manufacture of electronic instruments and appliances for measuring,...</td>
<td>1,000</td>
</tr>
<tr>
<td>Installation of industrial machinery and equipment</td>
<td>800</td>
</tr>
<tr>
<td>Programming and broadcasting activities</td>
<td>800</td>
</tr>
<tr>
<td>Motion picture projection activities</td>
<td>600</td>
</tr>
</tbody>
</table>

**Sources:** ONS Business Register and Employment Survey via [NOMIS](https://nomis.moderngov.gov.uk/)

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**Note:** The employment figures are rounded to the nearest 500 people. The chart shows the employment figures for each subsector, with the highest employment being in computer consultancy activities at 9,000 people, followed by computer programming activities at 6,000 people, and other telecommunications activities at 3,500 people.
Creative, cultural and digital industries (continued)

Figure 40: Creative, cultural and digital industries location quotients\(^1\) by subsector in the West of England (2017) (only location quotients greater than 1)

1. Location quotients are explained on page 39.

Sources: ONS Business Register and Employment Survey via NOMIS
Financial, business and legal ‘tech’ services
This sector encompasses professional services including:
- financial services
- insurance
- legal
- accounting
- market research
It includes businesses making use of innovations in the sector, such as those enabled by technology. The West of England hosts a range of innovative activities in this sector:
- Bristol is home to UK headquarters of Triodos Bank, a leading sustainable bank.

Digital innovations being applied in this sector in the West of England include:
- blockchain
- chain technology for recruitment
- specialist marketing
- data visualisation
A number of companies operate in the region:
- Burges Salmon
- DAS
- Deloitte
- Ernst & Young
- Hargreaves Lansdown
- Osborne Clarke
- PwC

Source: West of England Local Industrial Strategy
Financial, business and legal ‘tech’ services (continued)

Key statistics:

- Financial, business and legal ‘tech’ services employ 58,000 people in the West of England.
- The sector accounts for 9.6% of total employment in the region. This is the highest value of comparator areas and is above England overall.
- There are 5,975 financial, business and legal ‘tech’ services businesses in the West of England (13.3% of all businesses in the region).
- Between 2015 and 2017, employment in the sector increased by 1,050 jobs (1.8%) in the West of England. In the same period, employment in the sector grew by only 0.7% in England.

Figure 41: Financial, business and legal ‘tech’ services as a % of total employment (2017)

Sources: ONS Business Register and Employment Survey via NOMIS (Employment); ONS Business Counts via NOMIS (Businesses)
Financial, business and legal ‘tech’ services (continued)

Subsectors:

Within the sector, there is most employment in the following four subsectors:

- Legal and accounting (26% of employment in the sector)
- Activities auxiliary to finance and insurance (24%)
- Financial service activities (excluding insurance and pension funding) (22%)
- Head offices and management consultancy (21%)

Insurance and market research appear to play a smaller part in the region’s employment.

Figure 42: Financial, business and legal ‘tech’ services employment by subsector in the West of England (2017)

- Legal and accounting activities: 15,000
- Activities auxiliary to financial services and insurance activities: 14,000
- Financial service activities, except insurance and pension funding: 13,000
- Activities of head offices; management consultancy activities: 12,000
- Insurance, reinsurance and pension funding, except compulsory social security: 3,500
- Market research and public opinion polling: 500

Sources: ONS Business Register and Employment Survey via NOMIS
Sector analysis

Financial, business and legal ‘tech’ services (continued)

Figure 38 displays location quotients\(^1\) for the subsectors. It shows that:

- The West of England is specialised in financial, business and legal ‘tech’ services as a whole compared to England.

- Although insurance was a smaller subsector in terms of employment, when compared to England the West of England has a high proportion of employment in this subsector.

- The region is also specialised in finance and its auxiliary activities.

This reflects the results noted earlier in the report that the region is specialised in financial and insurance activities.

\(^1\) Location quotients are explained on page 39.
Note: Comparator Areas

This document compares the West of England to a list of comparator areas. These are as follows:

- The other six Combined Authorities with secured devolution deals:
  - Cambridgeshire and Peterborough Combined Authority
  - Greater Manchester Combined Authority
  - Liverpool City Region
  - Sheffield City Region
  - Tees Valley Combined Authority
  - West Midlands Combined Authority

- The London Economic Action Partnership (LEAP) area
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