

WORKING DRAFT: Lancashire Local Industrial Strategy: Evidence Base

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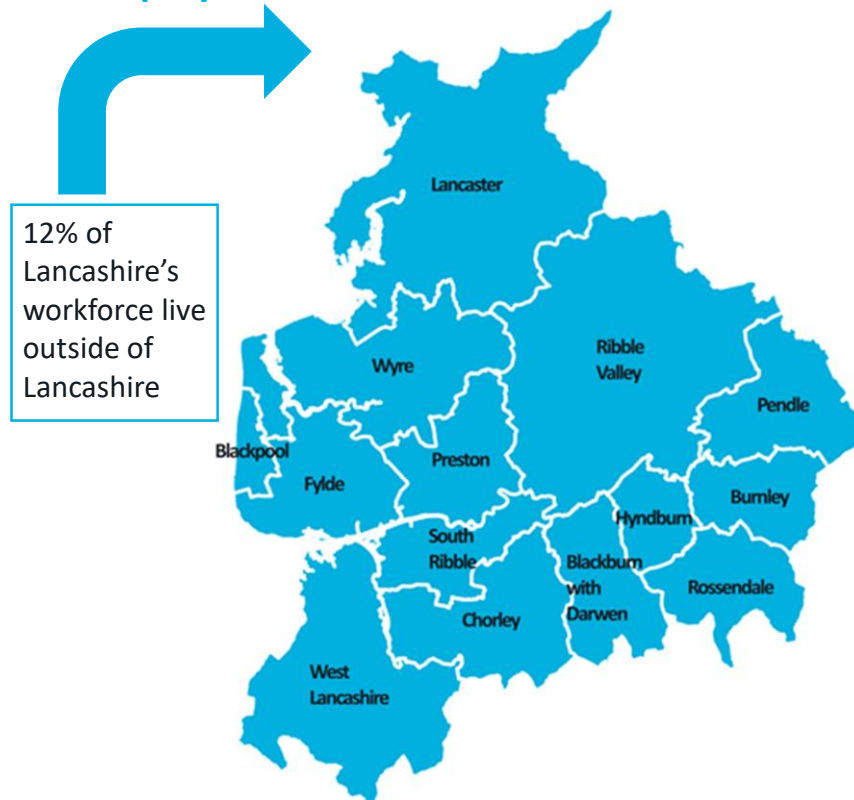
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Overview of the Economy

Introduction

- Lancashire is a polycentric county with a population of c.1.5 million and a total Gross Value Added (GVA) of £30.8 billion p.a.
- It is a relatively self-contained area in terms of commuting – 12% of its workforce commutes in to Lancashire and 14% of residence work outside the area – with employment concentrated in Preston, Blackburn with Darwen, Blackpool, Lancaster, South Ribble, and Fylde.
- It has a working population of just under 1 million (62% of total population, in line with North West and UK averages).
- Its activity rate is 78% - equal to the UK average and just above the North West average.
- Its employment rate is 74% - equal to the UK and just ahead of the North West.
- Its GVA per head is £19,600 p.a. £2,200 p.a. below the North West average and £9,400 p.a. below the UK average.
- GVA has risen 39% since 1997, this is 6 percentage points fewer than the North West and 10 percentage points fewer than the UK.
- Average weekly earnings are £480, relative to £502 in the North West and £541 in the UK.
- Thus, Lancashire has reasonably high levels of economic activity and employment, but a lower level of productivity per worker than the North West and UK. While there has been growth in GVA, Lancashire's GVA growth rates have not kept pace with regional and national averages. Thus, the productivity gap has widened over the past two decades.
- Lancashire has a lower business density (the number of businesses per 10,000 population) than regional and national averages. Its business birth rate runs at 2 percentage points below the North West and UK average of 14%, and a business death rate of 9% in line with the UK average and 1 percentage point below the North West average.
- Based on its relative contribution to UK GVA Lancashire's economy specialises in Manufacturing (Location Quotient of 1.9, almost double the national average) and Agriculture (LQ 1.6, almost two-thirds the national average).
- Overall, Lancashire has a lower share of high-skilled workers (those qualified to NVQ4+) in its workforce than North West and UK averages.
- Lower levels of worker productivity and lower skill levels are key factors in the relatively lower weekly earnings of Lancashire residents – but there are significant variations between places.
- Based on the Inclusive Growth Monitor developed by the Joseph Rowntree Foundation, Lancashire has some way to go both in terms of prosperity and economic inclusion relative to other LEP areas.

Lancashire's relatively self-contained labour market with employment hubs



12% of Lancashire's workforce live outside of Lancashire

Where do Lancashire residents work within Lancashire?

- 13% in Preston
- 9% in both Blackpool and Blackburn with Darwen
- 8% in Lancaster
- 7% in South Ribble
- 6% in Fylde
- Less than 5% in each of the remaining LAs

14% of Lancashire's residents work outside of Lancashire

Source: Census 2011

The Vital Statistics

Indicator	Lancashire	North West	UK	Source/Date
Total GVA	£30.8bn	£167.2bn	£1,756.1bn	ONS/2016
Total Population	1.484m	7.224m	65.648m	PE/2016
Working-age Population (WAP)	914.5k	4.5m	41.4m	APS/2016
Working-age Population (WAP) (%)	62%	63%	63%	APS/2016
Economic Activity Rate (WAP)	78%	76%	78%	APS/2017
Employment Rate (WAP)	74%	72%	74%	APS/2017
Employment Growth (WAP) (+/- since 2007)	+3%	+6%	+8%	BRES/2015
GVA per head	£19.6k	£21.8k	£29.0k	ONS/2015
GVA per employee	£42.1k	£45.5k	£50.8k	ONS/2015
GVA Growth (+/- since 1997)	+39%	+45%	+49%	ONS/2015
Average Weekly Earnings	£480pw	£502pw	£541pw	ASHE/2014
Proportion of WAP with NVQ L4+	32.6%	33.9%	38.0%	APS/2016
Total Active Enterprises	43.3k	259.7k	2.6m	BD/2015
Business Birth Rate	12%	14%	14%	BD/2015
Business Death Rate	9%	10%	9%	BD/2015
Employment in Manufacturing (% of all jobs)	13%	9%	8%	BRES/2015
University spin-outs/start ups since 2000	27 (1% UK)	156 (7%)	2,293	Spinouts UK/2017
Patent Applications (2005-2017)	1,130 (1.7% of UK, 22.8% of NW)	4,970	64,800	IPO/2017
Employment in Professional, Scientific & Technical (% of all jobs)	5%	7%	8% (GB)	BRES 2015
Total R&D Expenditure (£ per person employed)	£525	£1,093	£1,070	Eurostat + BRES/2011
Average House Prices	£143k	£157k	£225.3k	UKHPSSA + UKHPI/2017

Economic structure

Sector	Share of total GVA (%)	Share of total employment (%)	GVA per job	GVA LQ	Employment LQ
Real estate	13	1	379,199	0.9	0.9
Electricity	1	0	135,220	0.7	0.9
Water supply; sewerage	1	1	84,045	1.3	1.2
Financial services	3	1	73,241	0.4	0.4
Manufacturing	20	12	65,807	1.9	1.6
Public administration and defence	6	5	52,159	1.3	1.1
Information and communication	3	3	47,922	0.5	0.6
Construction	6	7	38,369	1.0	1.1
Wholesale and retail trade	13	15	37,760	1.2	1.0
Agriculture	1	1	34,923	1.7	1.0
Transportation and storage	3	4	32,411	0.7	0.8
Professional services	5	6	31,532	0.6	0.7
Education	6	9	29,235	1.0	1.1
Other services	2	3	28,586	0.8	0.9
Human health and social work	10	15	27,760	1.3	1.2
Mining and quarrying	0	0	21,415	0.2	0.7
Accommodation and food	4	7	20,528	1.2	1.1
Arts	1	3	20,005	0.8	0.9
Administrative and support	3	7	17,531	0.6	0.8

Source: GMFM, 2018

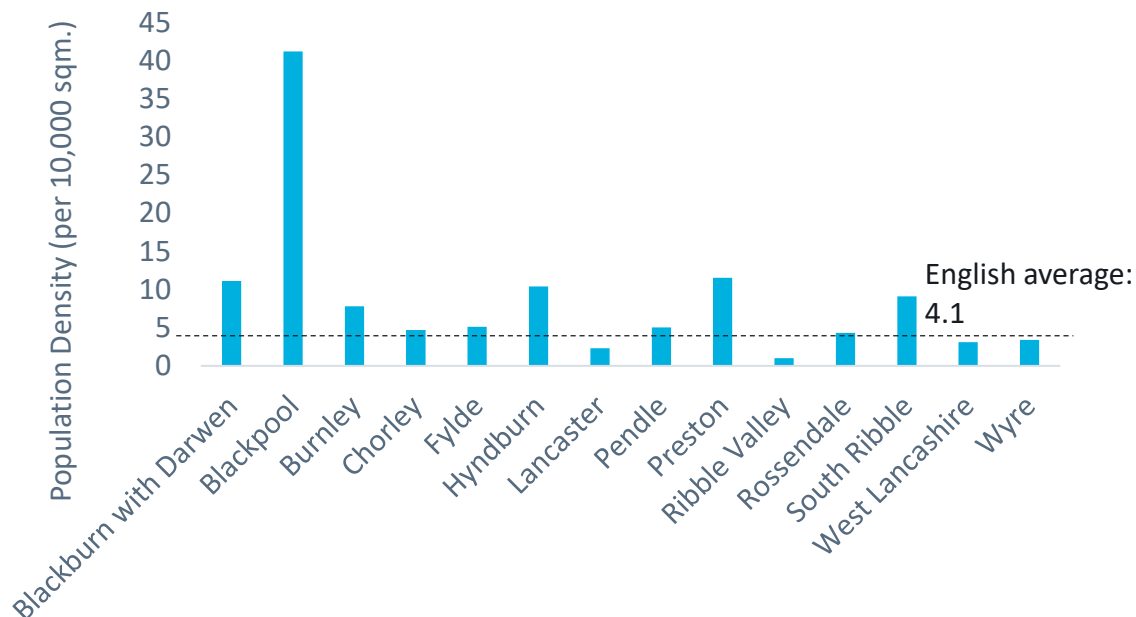
Headline population data

Population density of Lancashire

Indicator	Lancashire	North West
Area (sqm.)	1.4m	7.1m
Population	1.5m	7.3m
Population Density (per 10,000 sqm.)	4.7	5
Population Density Index (England=100)	115	122

- Lancashire has a population of 1.5 million people with a population density of 4.7 people per 10,000 sqm, a little below the regional average of 5, but above the England average of 4.1.

Population density by Local Authority District



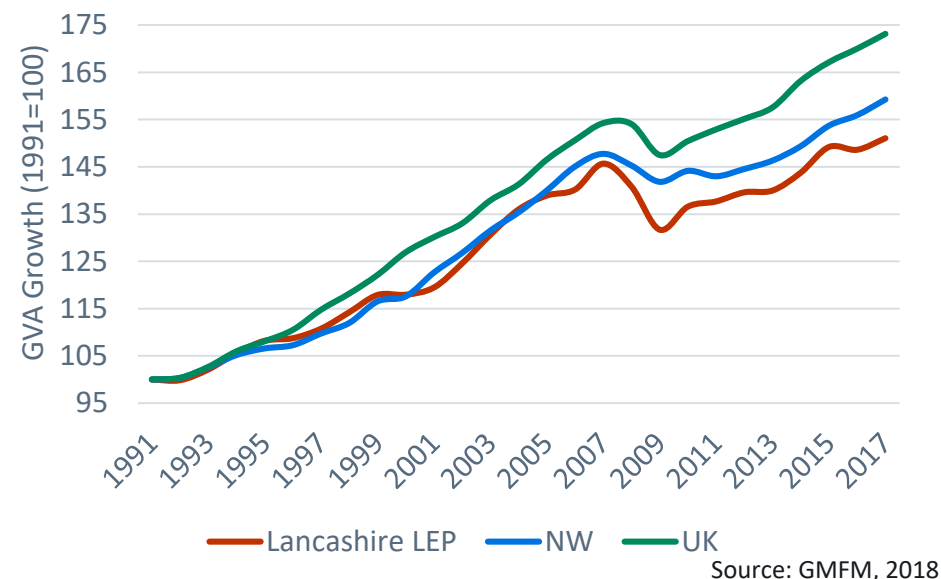
- Population density varies significantly between Local Authority Districts – Blackpool has the highest population density at around 40 people per 10,000 sqm, while Ribble Valley has the lowest population density at around 1 person per 10,000 sqm.

Source: Census 2011

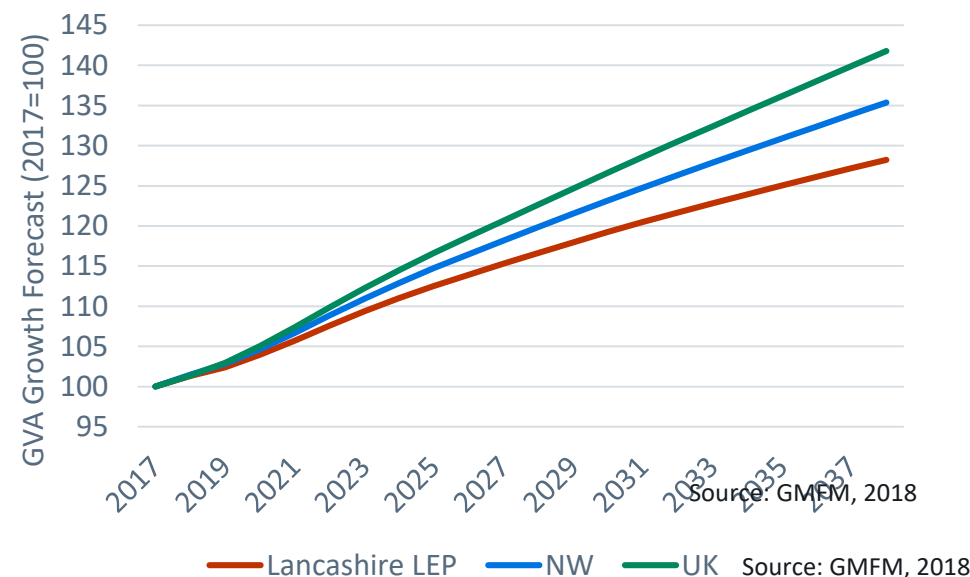
GVA growth trends and projections

- Lancashire has achieved significant growth in GVA since 1991.
- However, Lancashire's GVA growth has not kept pace with that of the North West or the UK.
- Thus, the 'productivity gap' between Lancashire and the UK has widened rather than narrowed.
- The Greater Manchester Forecasting Model's (GMFM) projections of GVA growth for Lancashire to 2037 (based on Oxford Economics' model) show that Business As Usual (BAU) in Lancashire is likely to lead to a further widening of the productivity gap with the UK.

GVA growth trends 1991-2017



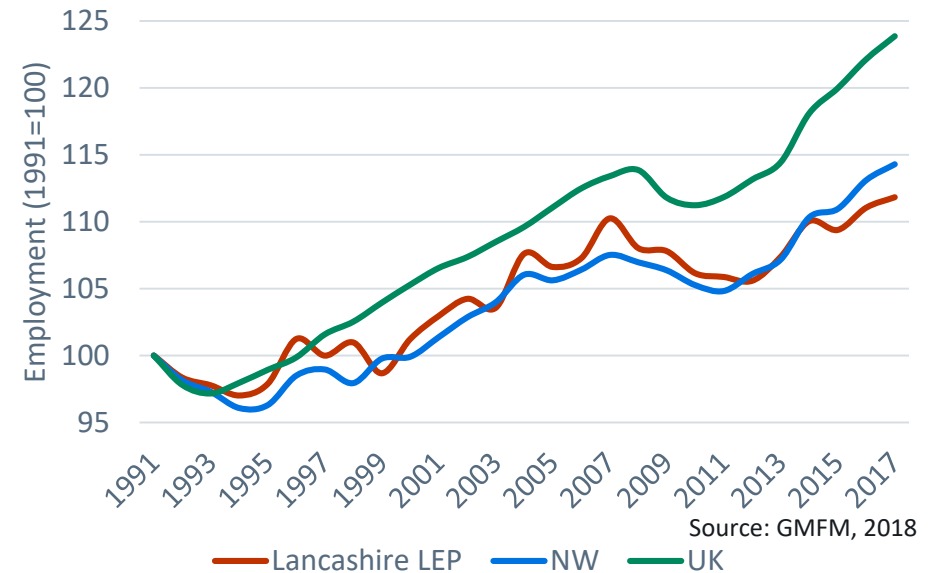
GVA growth projections 2017-2037



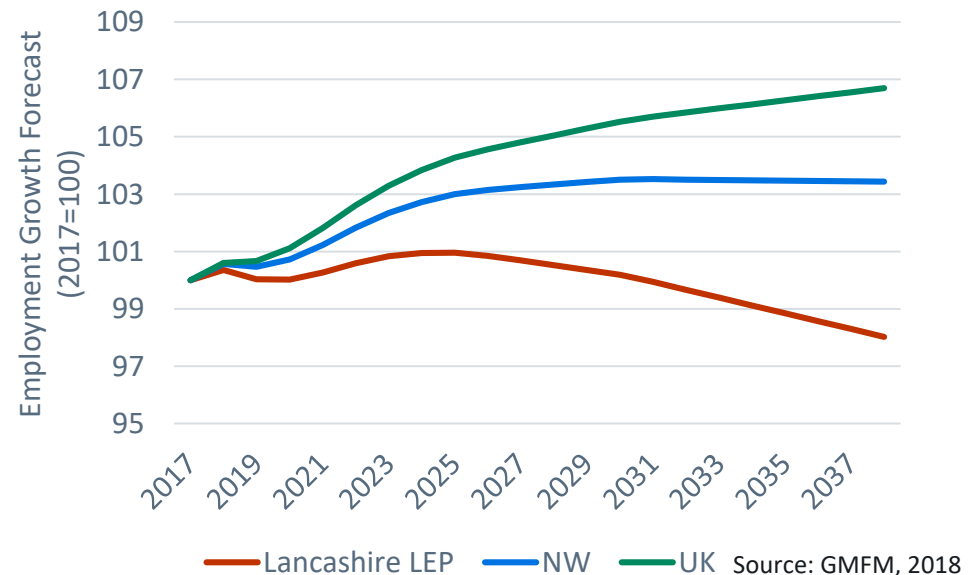
Employment trends and projections

- Lancashire's economy generated employment growth in the period 1991-2017.
- This growth tended to be lower than the UK trend but higher than that for the North West trend – with periods of relative over or under-performance.
- Lancashire's economy appears to experience greater fluctuations around national and regional trend employment trends. And sometimes Lancashire's labour market moves counter to UK and North West trends.
- Overall employment projections, using the GMFM, show employment in Lancashire is likely to fall by a couple of percentage points in the period to 2037, assuming BAU.
- This projection runs counter to employment projections for the UK and North West.
- Thus, BAU is likely to see fewer job opportunities created in Lancashire than in the past.

Employment change 1991-2017



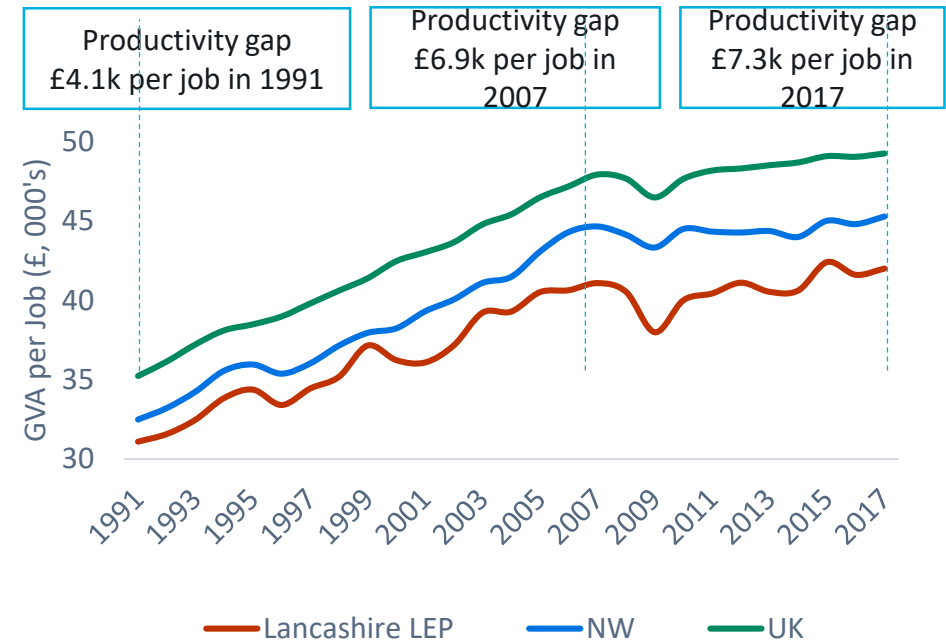
Employment change projections 2017-2037



Productivity trends and projections

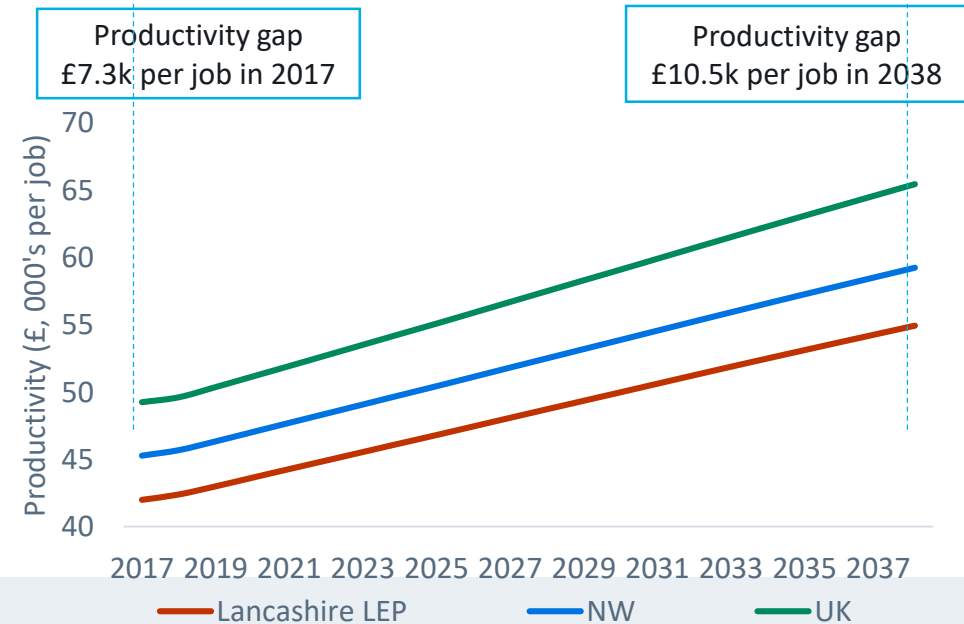
- Overall, worker productivity in Lancashire rose in the period 1991-2017 from around £31,000 p.a. to £42,000 p.a. – but the gap between Lancashire’s GVA per worker and the rest of the UK widened – setting a tougher challenge for the period to 2037.

Worker productivity 1991-2017



Worker productivity 2017-2037

Source: GMFM, 2018



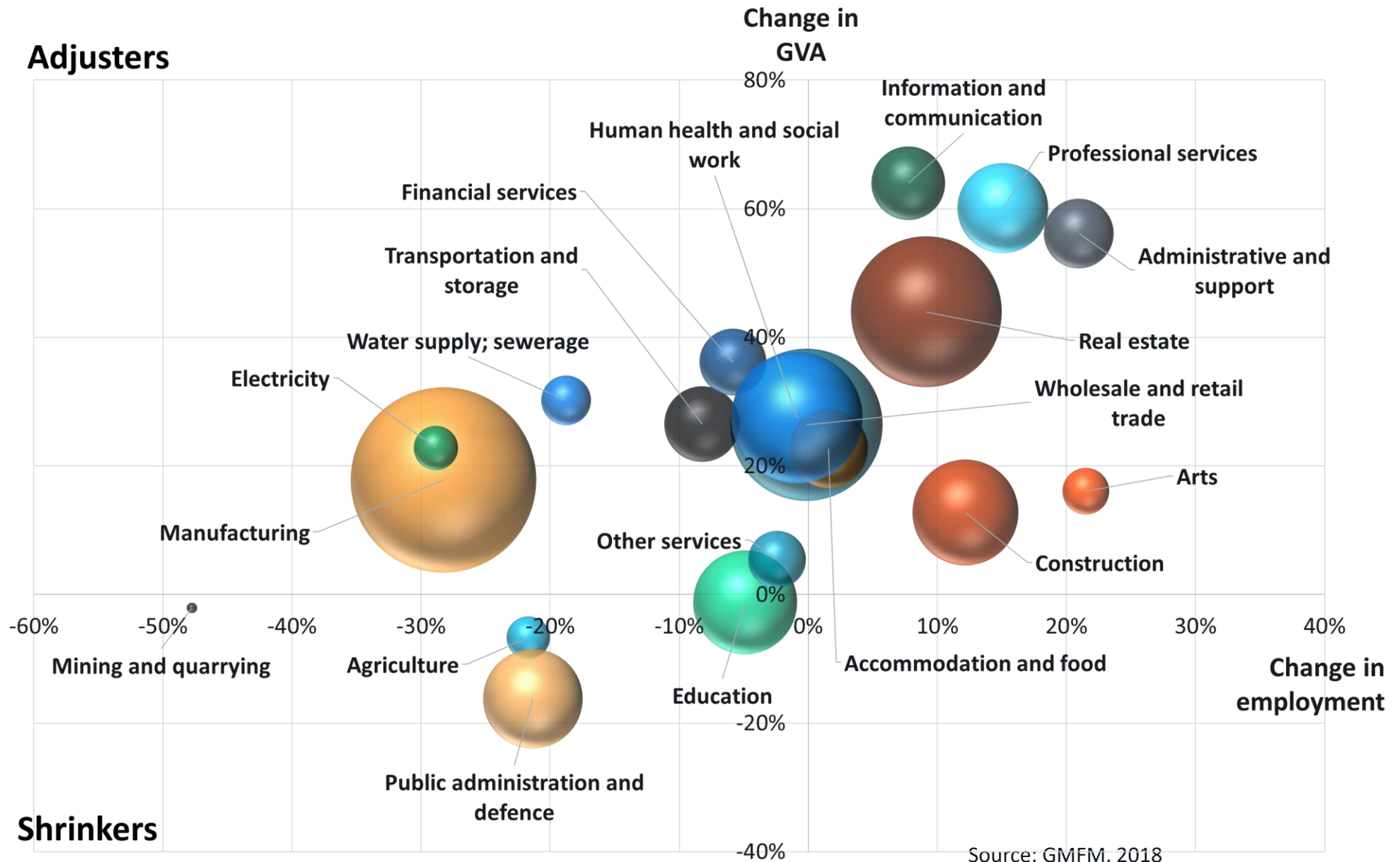
- Based on previous performance, projections of worker productivity in Lancashire from 2017-2037 show continued growth but with BAU the productivity gap with the rest of the UK is also set to widen.

Projected Sectoral and Occupational Change

- Change in GVA, employment and worker productivity varies between sectors.
- The next slide shows projected change in GVA and employment for the period 2017-2032.
- Projected change in GVA is shown on the vertical axis, projected change in employment is on the horizontal axis.
- The size of each 'bubble' represents the scale/significance of GVA in a given sector in 2017.
- The projections show that the key sectors in Lancashire fall into one of three categories:
 - 'Expanders' which are projected to generate increases in GVA and employment to 2038;
 - 'Adjusters' which are set to experience increases in GVA long with decreases in employment to 2038; and
 - 'Shrinkers' which will experience decreases in both GVA and employment to 2038.
- The projections suggest that Lancashire's:
 - 'Expanders' include: Information and Communication, Professional Services, Administrative support, Real Estate, Arts, and Construction;
 - 'Adjusters' include: Manufacturing, Financial Services, Water, Electricity, and Transportation and Storage; and
 - 'Shrinkers' include: Mining and Quarrying, Agriculture, Public Administration and Defence.
- The scale and rate of projected change will pose challenges to support local economies and workers transition to new sectors and roles. This will require support to workers who need to reskill to move sectors or upskill to take new roles within their existing sector. It will also require support to places to allow them to stay ahead where they are currently strong and design routes to excellence where current strengths may be linked to new opportunities.
- Projected changes will also change the occupational mix of jobs in Lancashire (see subsequent slide).
- Projections show increases in the following occupations:
 - Culture, Media & Sports Occupations;
 - Business & Public Service Professionals;
 - Business & Public Service Associate Professionals;
 - Skilled Construction & Building Trades;
 - Science & Technology Professionals;
 - Customer Service Occupations;
 - Leisure & Other Personal Service Occupations;
 - Corporate Managers;
 - Caring Personal Service Occupations;
 - Managers / Proprietors in agriculture & services; and
 - Health Professionals.
- The following occupations are projected to experience decline:
 - Transport & Mobile Machine Drivers & Operatives;
 - Textiles, Printing & Other Skilled Trades;
 - Science & Technology Associate Professionals;
 - Administrative Occupations;
 - Teaching & Research Professionals;
 - Secretarial & Related Occupations;
 - Elementary Occupations: Trades, Plant & Storage related;
 - Process, Plant & Machine Operatives;
 - Protective Service Occupations; and
 - Skilled Metal & Electrical Trades.

Projected Sector Shapes

Adjusters



Projected Changes to the Occupational mix

	2017	2038	Change
34 Culture, Media & Sports Occupations	2%	2%	16%
24 Business & Public Service Professionals	4%	4%	12%
35 Business & Public Service Associate Professionals	5%	6%	9%
53 Skilled Construction & Building Trades	4%	4%	8%
21 Science & Technology Professionals	4%	4%	7%
72 Customer Service Occupations	1%	2%	6%
62 Leisure & Other Personal Service Occupations	2%	3%	6%
11 Corporate Managers	6%	7%	5%
61 Caring Personal Service Occupations	9%	9%	5%
12 Managers / Proprietors in agriculture & services	4%	4%	5%
22 Health Professionals	4%	4%	4%
92 Elementary Occupations: Clerical & Services related	10%	10%	3%
51 Skilled Agricultural Trades	1%	1%	3%
32 Health & Social Welfare Associate Professionals	1%	1%	1%
71 Sales Occupations	6%	6%	-1%
82 Transport & Mobile Machine Drivers & Operatives	5%	4%	-6%
54 Textiles, Printing & Other Skilled Trades	3%	3%	-6%
31 Science & Technology Associate Professionals	1%	1%	-6%
41 Administrative Occupations	9%	8%	-8%
23 Teaching & Research Professionals	5%	4%	-8%
42 Secretarial & Related Occupations	2%	2%	-10%
91 Elementary Occupations: Trades, Plant & Storage related	2%	2%	-15%
81 Process, Plant & Machine Operatives	4%	4%	-18%
33 Protective Service Occupations	1%	1%	-19%
52 Skilled Metal & Electrical Trades	4%	4%	-22%

Inclusive growth

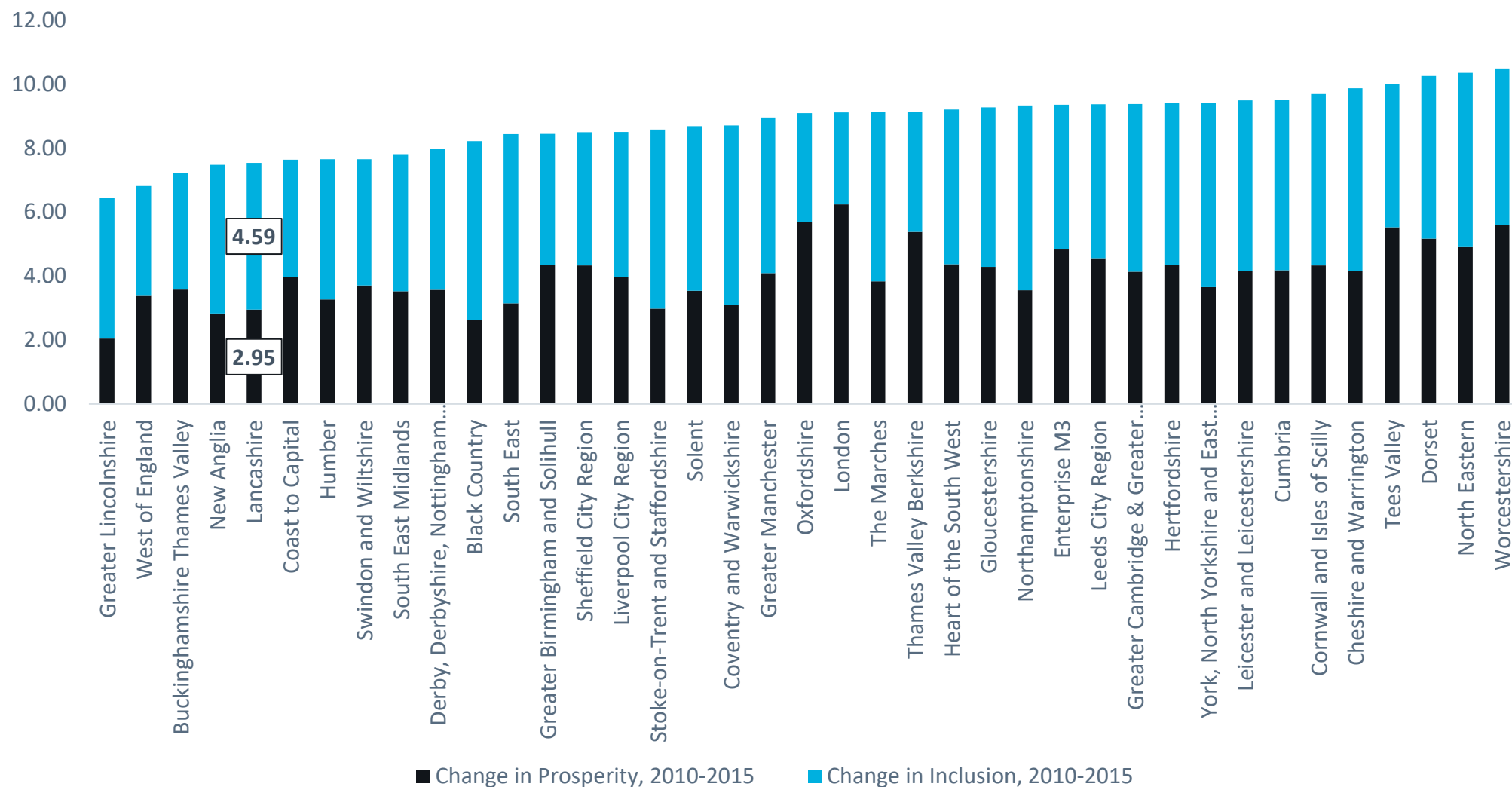
- Colleagues at the universities of Sheffield and Manchester developed the Inclusive Growth Monitor for the Joseph Rowntree Foundation.
- It uses a range of indicators to assess both prosperity and economic inclusion – see table opposite.
- These are weighted to reflect their importance to the index.
- To devise the scores each indicator is normalised so that the LEP with the best outcome for a given indicator receives a score of 1 and the LEP with the worst outcome receives a score of 0. Each dimension (containing three indicators) notionally has a maximum score of 3 and a minimum score of 0. Each theme (containing three dimensions) has a notional maximum score of 9 and a minimum score of 0.
- To assess change over time normalised change scores are calculated based on the percentage change on the underlying indicator scores between 2010 and 2015.
- The next slide shows change data for Local Authority Partnership areas.
- The chart shows that Lancashire has some way to go both in terms of prosperity and economic inclusion relative to other LEP areas.
- It should be noted that these are relative scores – they do not necessarily reflect absolute changes in worklessness or fuel poverty, for example.

Measures of inclusive growth

Theme	Dimension	Broad Indicator
Economic Inclusion (Score 0 Min – 9 Max)	Income (Score 0 Min – 3 Max)	Out of work benefits
		In-work tax credits
		Low Earnings
	Living costs (Score 0 Min – 3 Max)	Housing affordability (ownership)
		Housing costs (rental)
		Fuel poverty
	Labour Market Inclusion (Score 0 Min – 3 Max)	Unemployment
		Economic Inactivity
		Workless households
Prosperity (Score 0 Min – 9 Max)	Output Growth (Score 0 Min – 3 Max)	Output (GVA/capita)
		Private sector businesses
		Wages/earnings
	Employment (Score 0 Min – 3 Max)	Workplace jobs
		People in employment
		Employment in high-tech sectors
	Human Capital (Score 0 Min – 3 Max)	Higher level occupations
		Intermediate and higher level skills
		Educational attainment

Source: Inclusive Growth Monitor, 2017: Local Enterprise Partnerships, Inclusive Growth Analysis Unit, University of Manchester

Inclusivity in economic performance, change over time



Source: Inclusive Growth Monitor, 2017: Local Enterprise Partnerships, Inclusive Growth Analysis Unit, University of Manchester

Inclusivity in economic performance, 2015

Theme	Dimension (Score 0 Min – 3 Max)	Broad Indicator (Score 0 Min – 1 Max)	Lancashire	Cheshire & Warrington	Cumbria	Greater Manchester	Liverpool City Region
Economic Inclusion (Score 0 Min – 9 Max)	Income	Out of work benefits	0.33	0.75	0.58	0.33	0.00
		In-work tax credits	0.07	0.60	0.53	0.20	0.20
		Low Earnings	0.07	0.37	0.19	0.23	0.16
	Living costs	Housing affordability (ownership)	0.96	0.76	0.94	0.93	0.98
		Housing costs (rental)	0.95	0.88	0.96	0.87	0.93
		Households in fuel poverty	0.48	0.69	0.33	0.50	0.41
	Labour Market Inclusion	Unemployment	0.75	1.00	0.75	0.25	0.25
		Economic Inactivity	0.18	0.55	0.73	0.27	0.00
		Workless households	0.40	0.60	0.60	0.33	0.00
Prosperity (Score 0 Min – 9 Max)	Output Growth	Output (GVA/capita)	0.09	0.49	0.20	0.16	0.08
		Private sector businesses	0.30	0.64	0.86	0.22	0.00
		Wages/earnings - FT workers	0.21	0.28	0.40	0.27	0.29
	Employment	Workplace jobs - Jobs density	0.30	0.87	0.70	0.30	0.03
		People in employment	0.31	0.77	0.77	0.23	0.00
		Employment in high-tech sectors	0.47	0.42	0.11	0.58	0.63
	Human Capital	Higher level occupations	0.21	0.48	0.07	0.28	0.28
		Intermediate and higher level skills	0.55	0.82	0.68	0.59	0.55
		Educational attainment at GCSE/KS4	0.33	0.50	0.33	0.22	0.11

Source: Inclusive Growth Monitor, 2017: Local Enterprise Partnerships, Inclusive Growth Analysis Unit, University of Manchester

Policy environment and external
drivers of change

Policy environment and external drivers of change

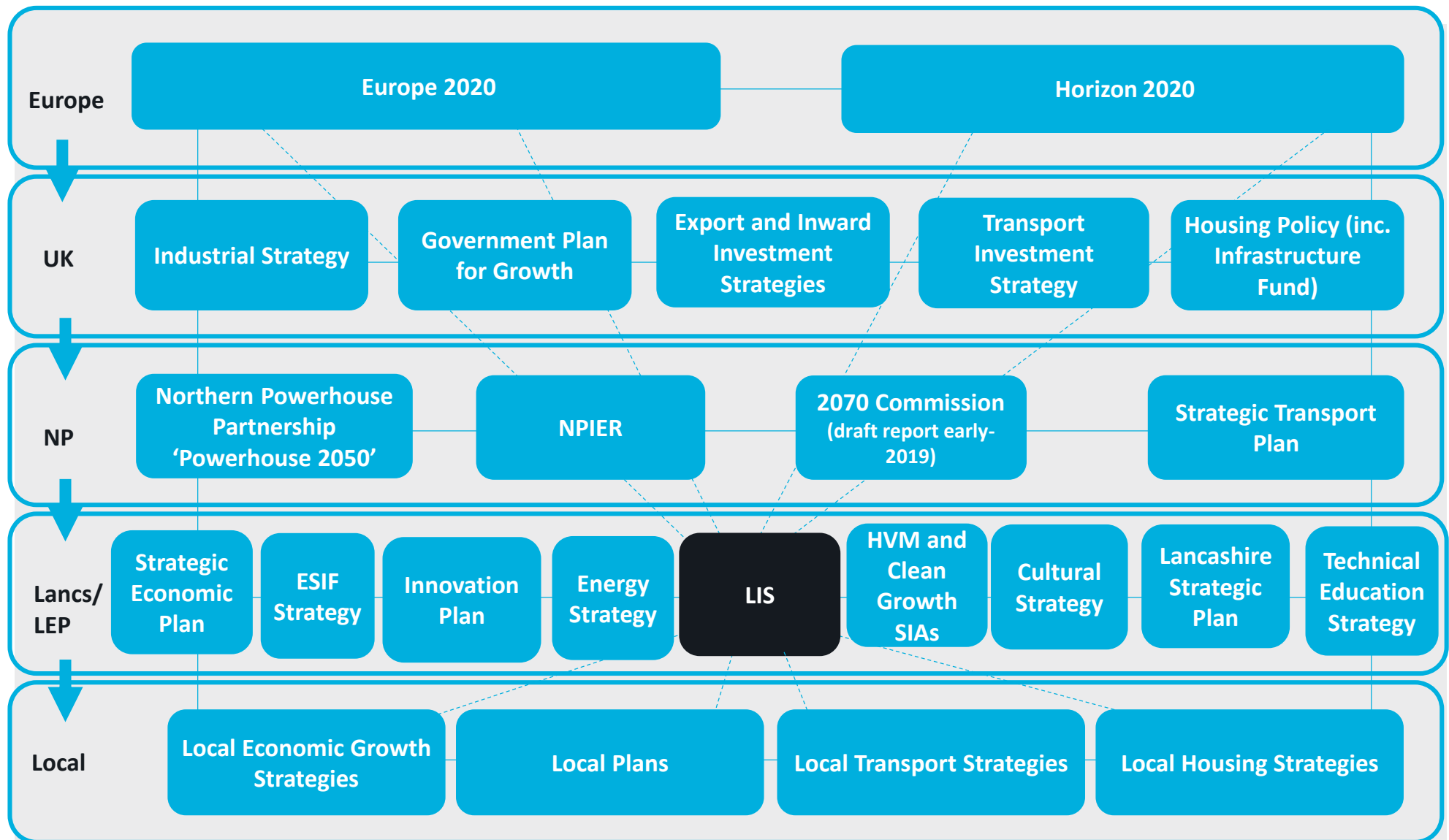
Key global technology drivers

- The McKinsey Global Institute has highlighted a number of key disruptive technologies that will drive change in economies, including:
 - Ubiquitous connectivity leading to the creation of new products, services and processes across all sectors/markets;
 - Cloud technology enabling the growth of internet-based services;
 - The 'Internet of Things' driving demand for additional functionality in a wide range of items as well as helping generation of new processes, products, and services;
 - The automation of 'knowledge work' removing roles which were previously regarded as the sole domain of humans;
 - Advanced Materials, with a wide range of functions and properties in many markets, including health, energy, transport and engineering;
 - Advanced Robotics changing production processes and logistics based on advances in machine vision, artificial intelligence, machine-to-machine communication, sensors and actuators;
 - Autonomous/near-autonomous vehicles, e.g. drones, submersibles, cars and trucks will revolutionise transportation and logistics;
 - 3D Printing/additive manufacturing allows on-demand production for consumers as well as business-to-business applications;
 - Next-Generation Genomics will use big data analytics in the sequencing and modification of genetic material, helping to revolutionise human health care and animal/plant agriculture;
 - Advanced Oil and Gas Exploration and Recovery, making possible the extraction of oil and gas from previously unexploitable reserves;
 - Renewable Energy will enable energy generation without contributing to man-made climate change; and
 - Energy Storage technologies, e.g. lithium-ion batteries and fuel cells, will transform the scope for electric and hybrid vehicles, and may transform the scale at which renewables are able to meet demand for electricity.

Key national and local policy issues

- Lancashire's economy is:
 - Engaged in key global supply chains and export markets, its short and medium term prospects will be affected by the Brexit process - including aerospace and automotive sectors, as well as agriculture and food and drink sectors and the visitor economy;
 - Affected by UK energy policy – particularly in relation to nuclear energy, shale gas, and renewable energy (including wind and tidal energy); and
 - Will be affected by UK policy on climate change, including climate change mitigation (e.g. adaptation of existing industries to meet net-zero carbon by 2050 or sooner), and climate change adaptation, e.g. water risk management.
- The following slide depicts a policy hierarchy that outlines key European, UK, Northern Powerhouse, Lancashire LEP and district level policies.
- The hierarchy highlights key documents and statements that the LIS needs to reflect and to which it must respond.
- Key Lancashire-level strategies which are driving activity at the local level and upon which the LIS will build include the:
 - Lancashire Innovation Plan;
 - Cultural Strategy; and
 - Technical Education Strategy.
- Work on the Strategic Plan is being undertaken concurrently with the LIS – the two process will inform each other, e.g. in terms of assumptions around land use and location of developments.

Policy hierarchy



Business Environment

Introduction

Outline of this section

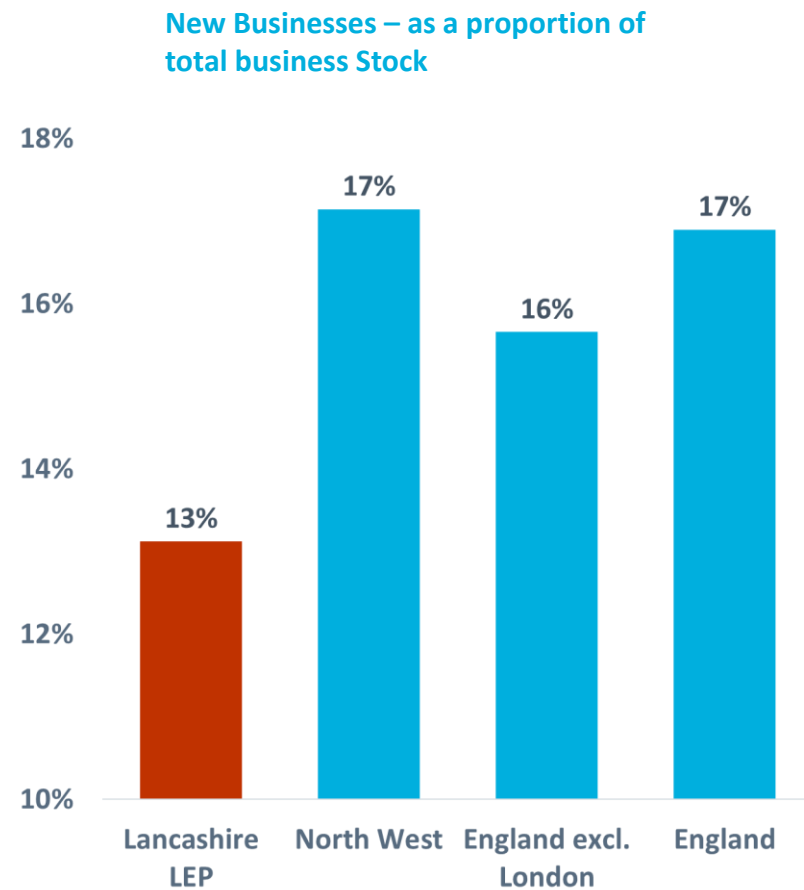
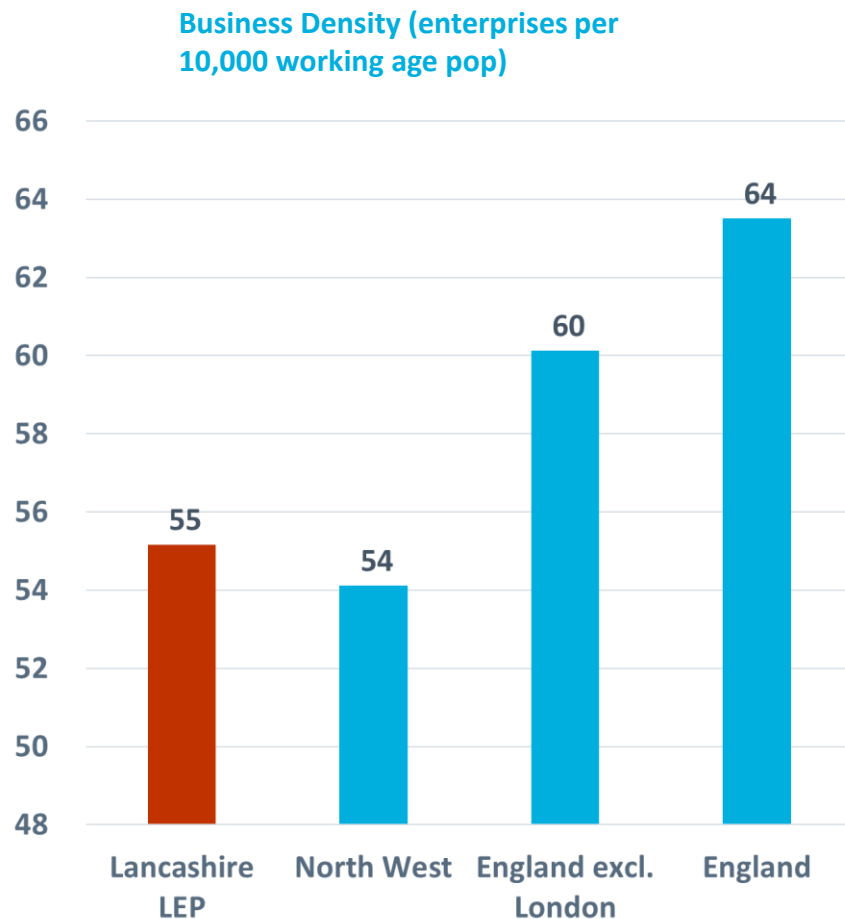
- This section provides an overview of Lancashire's business environment. It covers:
 - Business density
 - Business start-up and survival rates – including variations between Local Authority Districts
 - Scale-up data on fast-growing businesses
 - Sectoral mix – including variations between Local Authority Districts
 - Business population by size of business
 - Export activity – as data permit
 - Supply chains – [NB: evidence to be gathered]
- It also draws on the:
 - Lancashire Local Enterprise Partnership, Strategic Economic Plan
 - Enterprise Research Centre's, UK Local Growth Dashboard, 2018

Key messages

- Business density in Lancashire is marginally higher than the North West average but it is lower than that of England.
- The proportion of the business stock that is made up of new businesses is significantly lower in Lancashire relative to regional and national rates.
- On the whole, Lancashire's Local Authority Districts underperform in terms of business births and 5-year survival rates, when compared to the England average – however, the picture of business births and business survival varies significantly between Local Authority Districts.
- In terms of fast-growing Scale-up businesses, Lancashire outperforms the England average for Scale-ups from <£500k to £1m, but underperforms relative to England for businesses that are moving from £1-2m to £3m+.
- A smaller proportion of Lancashire's business are micro-businesses than in England and North West – conversely, a higher proportion of its businesses employ 10-49 staff.
- Lancashire's economy has a specialism in manufacturing, a relatively high concentration of public sector activity, a low concentration of high-value added service activities – however there are significant variations in industrial structure between Lancashire's Local Authority Districts.
- Data on exports at local authority level are limited, experimental data on service exports show that Lancashire performs strongly on service exports as a proportion of its GVA.

Business density relative to regional and national averages

- There are 52,070 businesses in Lancashire, 260,060 businesses across the North West, and 2.3m businesses across England as a whole.
- Business density in Lancashire is marginally higher than the North West average but is significantly lower than the England average.
- The proportion of the business stock made up of new businesses is significantly lower in Lancashire relative to regional and national rates – indicating a relative lack of entrepreneurial activity in Lancashire.



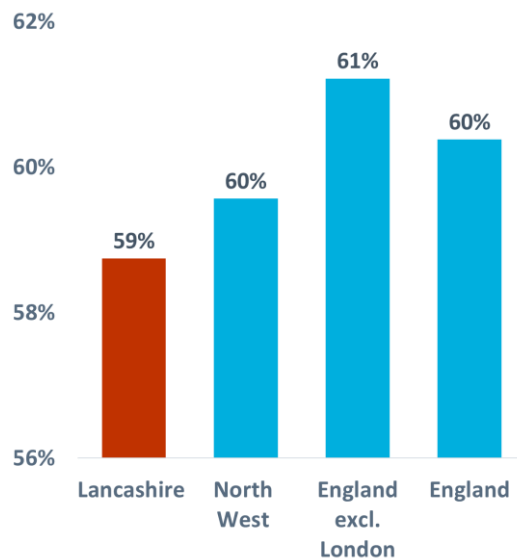
Source: UK Business Counts & Mid Year Population Estimates, 2016 & Business Demography ONS, 2011

Business survival and Scale-ups

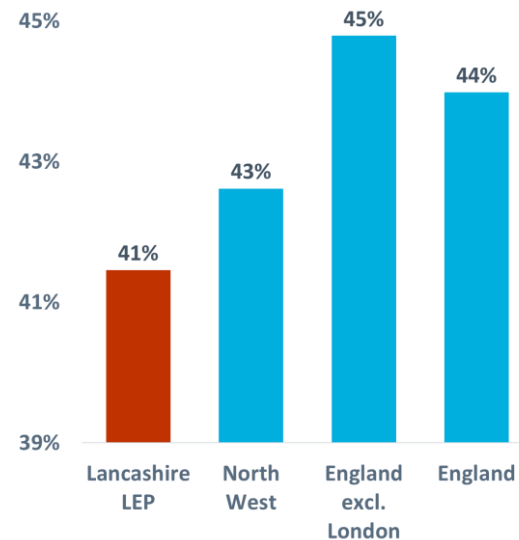
Business survival rates at 3 and 5 years

- Lancashire lags slightly behind the North West and England in terms of its business survival rate at 3 years
- Its relative performance is weaker in relation to business survival after 5 years – where it sits three percentage points behind the England average.

Three year business survival



Five year business survival



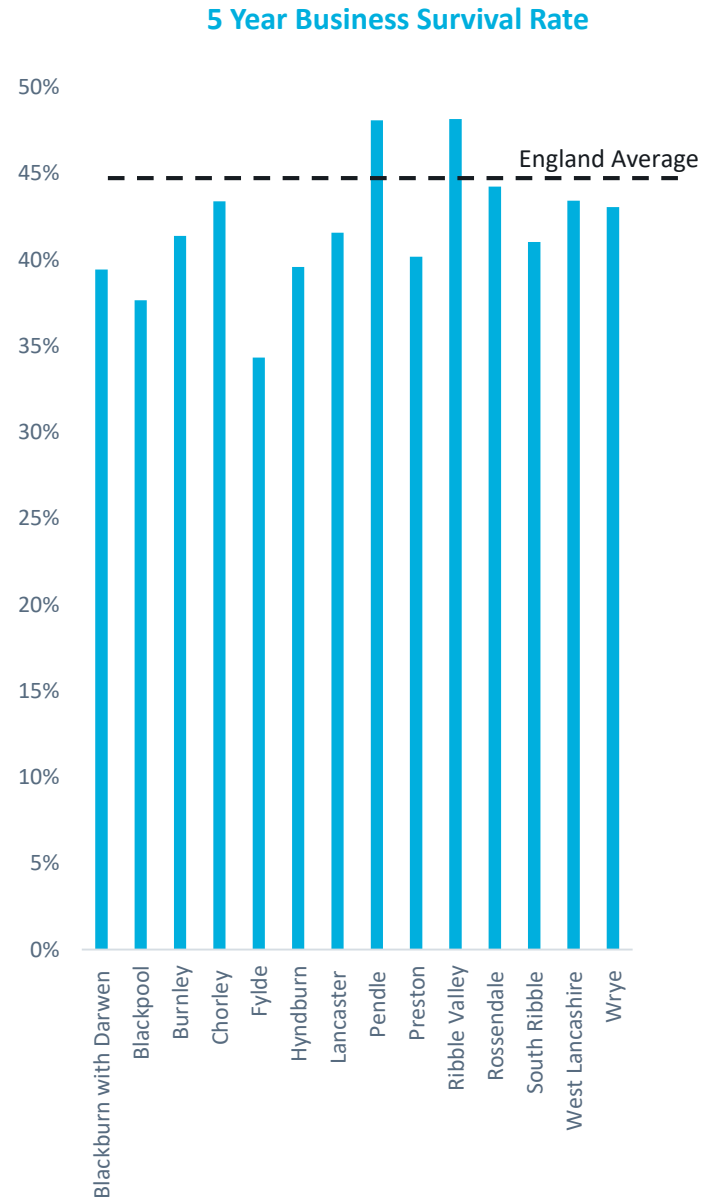
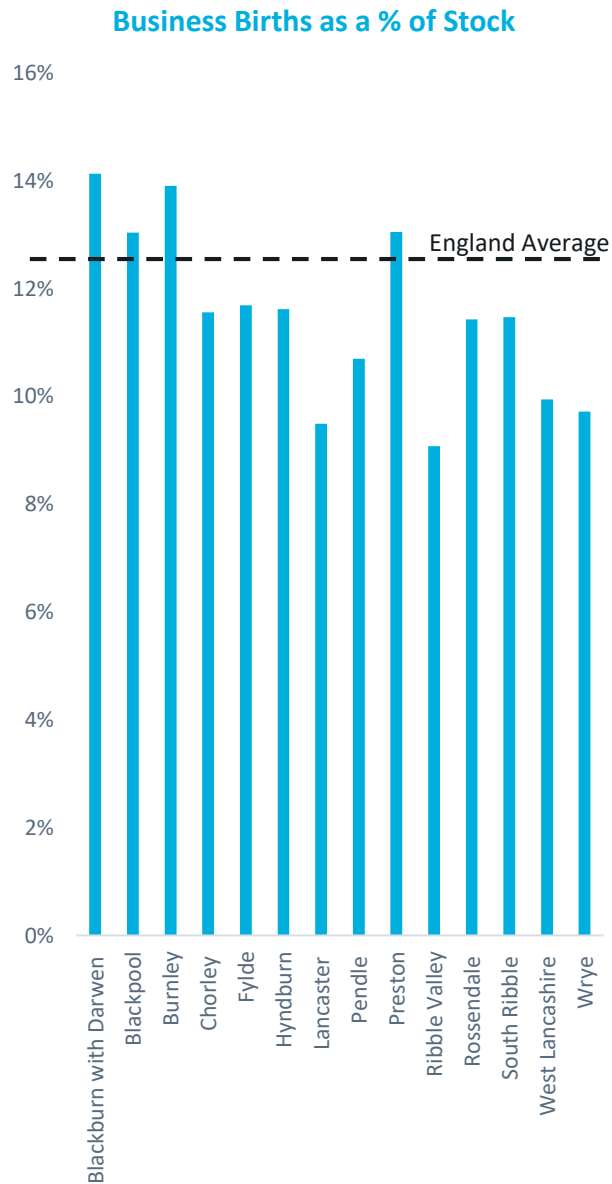
Source: Business Demography & Business Counts, ONS 2010-2016

NB: Figures rounded to the nearest percentage point.

Scale-ups

- The Enterprise Research Centre's UK Local Growth Dashboard draws on data from the Business Structure Database to highlight Scale-up performance (firms growing by 20% by employment a year over three years) by LEP area relative to the England average.
- The UK Local Growth Dashboards shows for 2017 :
- 2.3% of Start-ups Scaling <£500k to £1m + in 3 years 2014-17 (%) – relative to an England average of 1.9%; and
- 6.2% of Scaling Survivors £1-2m to £3m+ in 3 years 2014-17 (%) – relative to an England average of 7.5%.

New businesses across Lancashire's Local Authority Districts



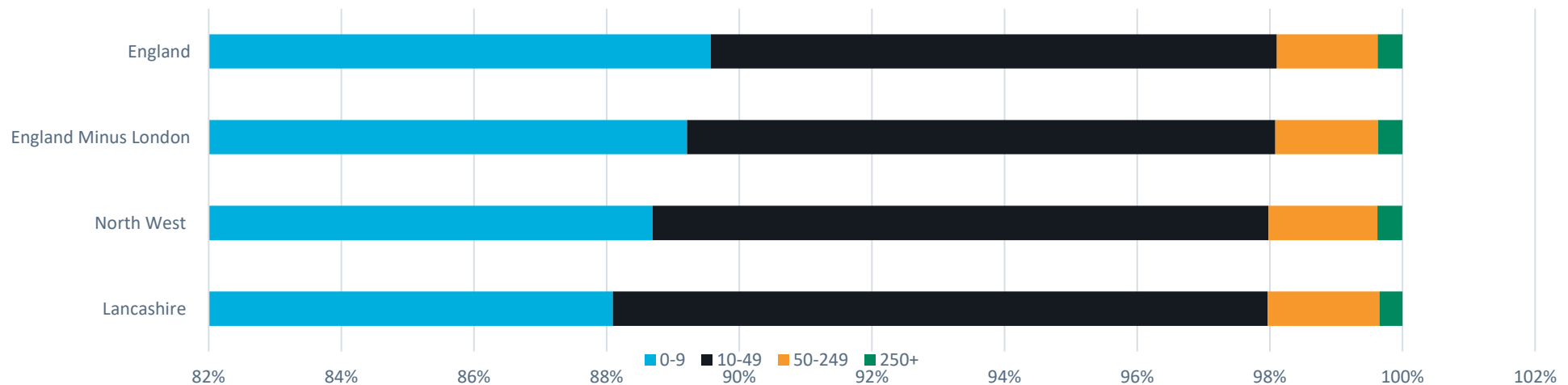
- On the whole, Lancashire's Local Authority Districts underperform in terms of business births and 5-year survival rates when compared to the England average.
- However, the picture of business births and business survival varies significantly between Lancashire's local authority districts.
- In terms of new businesses as a proportion of the total business stock, Blackburn with Darwen and Burnley outperform the England average.
- In terms of 5-year business survival, Ribble Valley and Pendle outperform the England average.

Source: Business Demography, ONS 2011 for 5 years

Business size

- Lancashire has a small proportion of micro-businesses when compared to any other assessed spatial level. These are often the source of fast growth – therefore Lancashire may be missing out on potential high-growth businesses

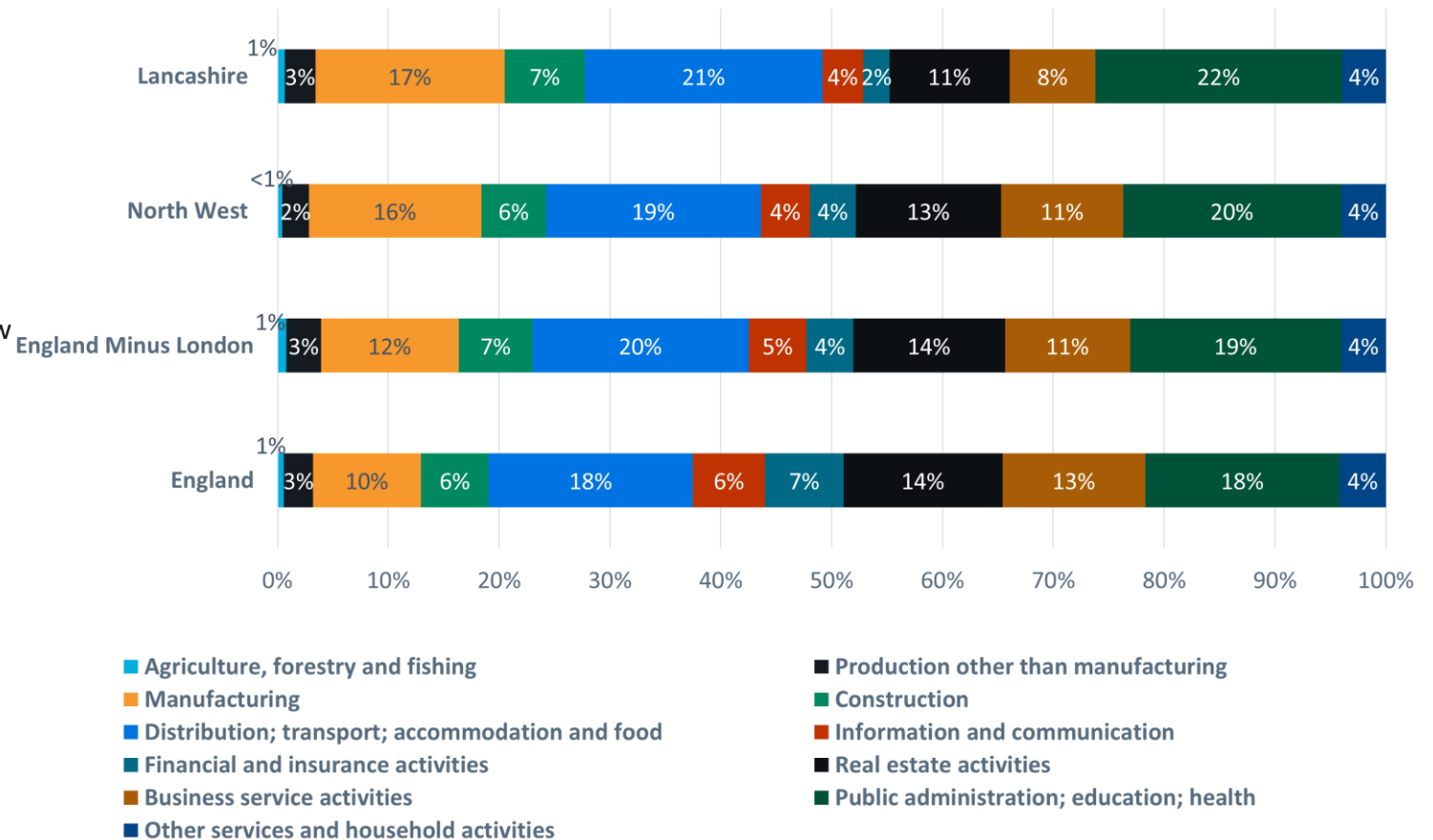
Proportion of businesses by employment size band



Key sectors

- Lancashire's GVA-driving sectors are broadly inline with North West averages.
- The county draws a large proportion of its GVA (60%) from its three largest sectors: Manufacturing; Distribution, transport, accommodation and food; & Public administration; education; health
- Lancashire also draws a relatively low proportion of its GVA from Business service activities.
- Thus, the economy has a specialism in manufacturing, a relatively high concentration of public sector activity, a low concentration of high-value added service activities.
- Although, in line with What Works Centre guidance, local partners note that industrial structure is not something that may be easily influenced through local intervention.

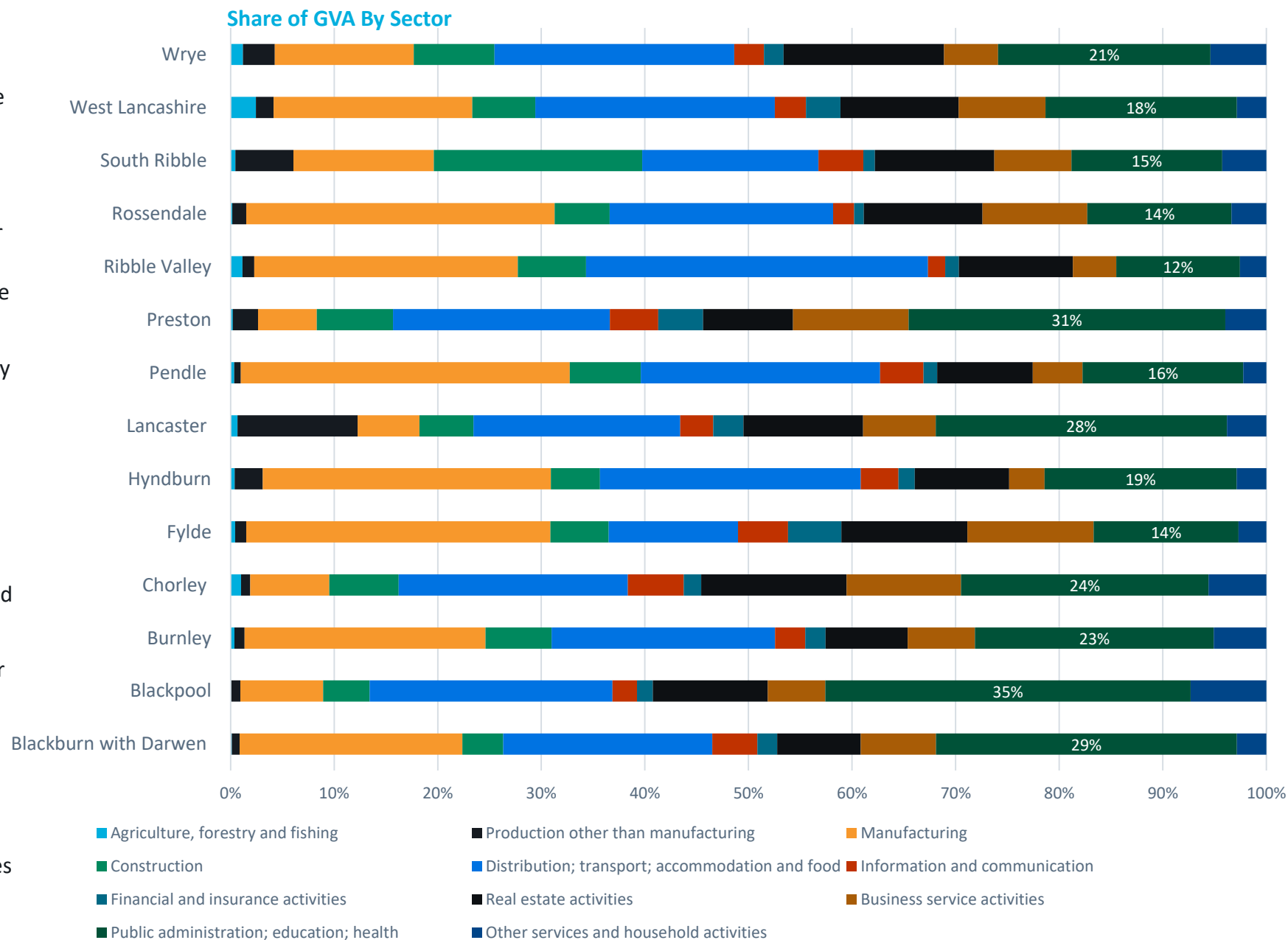
Share of GVA By Sector



Source: ONS Regional Accounts, 2015

Variation in sectoral mix between Local Authority Districts in Lancashire

- Over 25% of GVA in Rossendale, Ribble Valley, Pendle, Fylde comes from the Manufacturing sector – well above the county average.
- In Lancaster, 12% of GVA comes from production other than manufacturing – compared to a county average of 3%.
- South Ribble has a particularly large construction sector – 20% of GVA compared to a county average of 7%.
- Wyre, Ribble Valley, Pendle and Hyndburn have small business services sectors – less than 5% of GVA compared to a county average of 8%.
- In Preston and Blackpool over 30% of GVA comes from Public administration, education and health sector activities – compared to a county average of 22%.
- Thus, local economic priorities are likely to vary between districts.

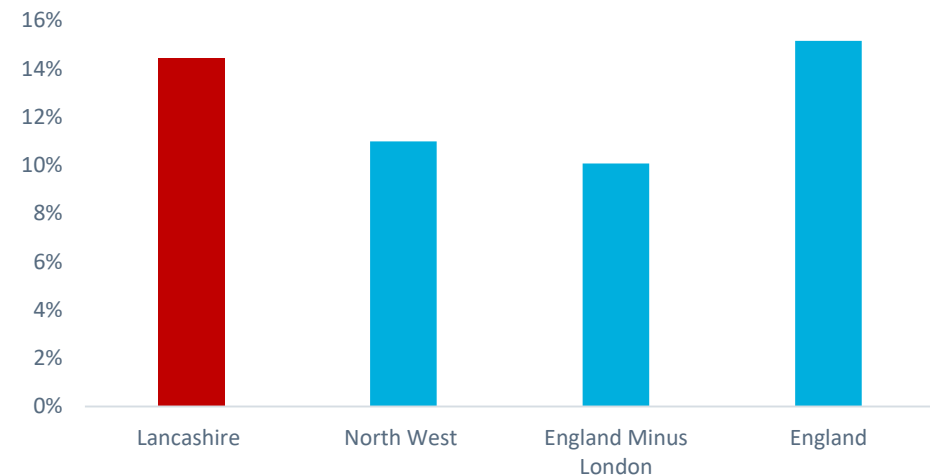


Source: ONS Regional Accounts, 2015

Exports and foreign ownership

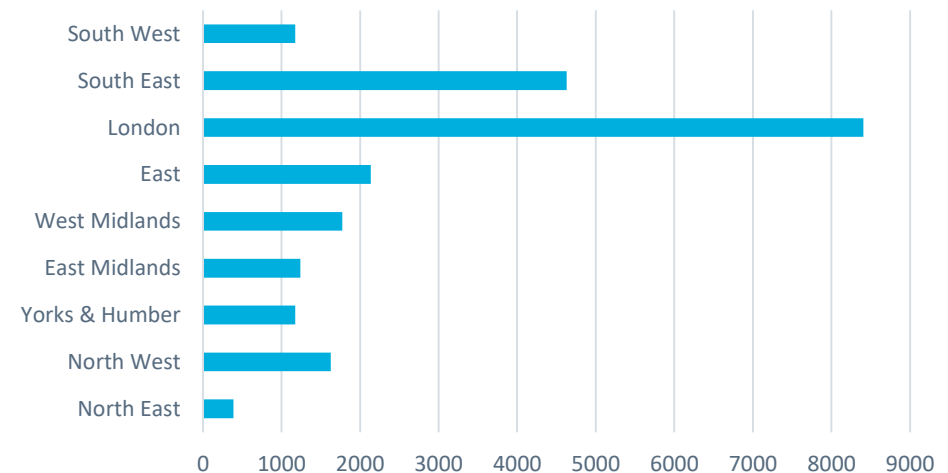
- Publicly available data on exports at the local authority level are limited.
- Experimental data on service exports show Lancashire performs strongly on service exports as a proportion of its GVA.
- Similarly, publicly available data on foreign ownership at local authority level is limited, regional data show the North West has the fourth largest number of foreign-owned businesses, after London, the South East and the West Midlands.
- Foreign ownership may be advantageous to an economy, as foreign-owned businesses tend to export more than domestic firms and can tap in to wider supply and innovation networks – however, in the current policy environment with uncertainty regarding international trade and investment arrangements, stakeholders have expressed a need to identify and mitigate risks associated with key investment decisions being taken overseas.

Service Exports as a Proportion of GVA



Source: The Pink Book International Trade in Services ONS 2016 & Regional GVA by Local Authority, ONS 2016

Number of foreign-owned businesses by Region



Source: VAT and/or PAYE based Enterprises by Country of Ultimate Foreign Ownership ONS, 2010

Business supply chains

NB: Further evidence is required.

Ideas



Introduction

Outline of this section

- This section reviews the innovation landscape in Lancashire. It provides an overview of:
 - Research, Development, Demonstrator and Innovation Assets including Higher Education Institutions;
 - Patent activity by sector;
 - University research performance;
 - University Commercialisation, Spin-offs, Knowledge Transfer Partnerships and Graduate Start-ups; and
 - Regional-level data on innovation active businesses and R&D spending by business and universities.
- It draws on national datasets, plus the:
 - Lancashire Innovation Plan, 2018;
 - North West Coastal Arc Partnership for Clean and Sustainable Growth Science and Innovation Audit, 2018 – a partnership led by Lancaster University, involving Merseyside, Cheshire, Staffordshire and North Wales;
 - Innovation North Progressing Innovation in the Northern Powerhouse, NP11 and Innovate UK, 2018; and
 - Lancashire Innovation Ecosystem Project – ongoing.

Key messages

- Lancashire is home to leading global businesses at the cutting edge of advances in Advanced Manufacturing, which are supported by a cluster of high-tech SMEs that are amongst the most productive in the country.
- Lancashire's manufacturing base is led by aerospace, automotive, and energy sectors, with additional strengths in digital and healthcare sectors.
- There are excellent examples of innovation in Lancashire's business base, including BAE Systems in the aerospace sectors and AMS Neve in digital/sound engineering.
- Lancashire is developing its innovation links with neighbouring cities, including but not limited to Manchester, Liverpool and Sheffield. An example of collaboration with Sheffield partners is the Advanced Manufacturing Research Centre North West.
- Lancashire's HEIs have research strengths in Allied Health Professions, Chemistry, Computer Science, Earth Systems and Environmental Sciences, General Engineering, Mathematical Sciences and Physics.
- IPO data show strong intellectual property advances in areas such as Civil Engineering, Mechanical Elements, Medical and Computer Technology, and Thermal Processes.
- Lancashire's strengths in industries at the forefront of Industry 4.0 and its participation in the Made Smarter Pilot in the North West mean that it is well-placed to capitalise on productivity improvements associated with increased automation and the adoption of new technology.
- Lancashire has an unusual mix of sectors and supply chains with (as yet untapped) potential to combine capabilities which may open up new competitive opportunities.

Innovation assets

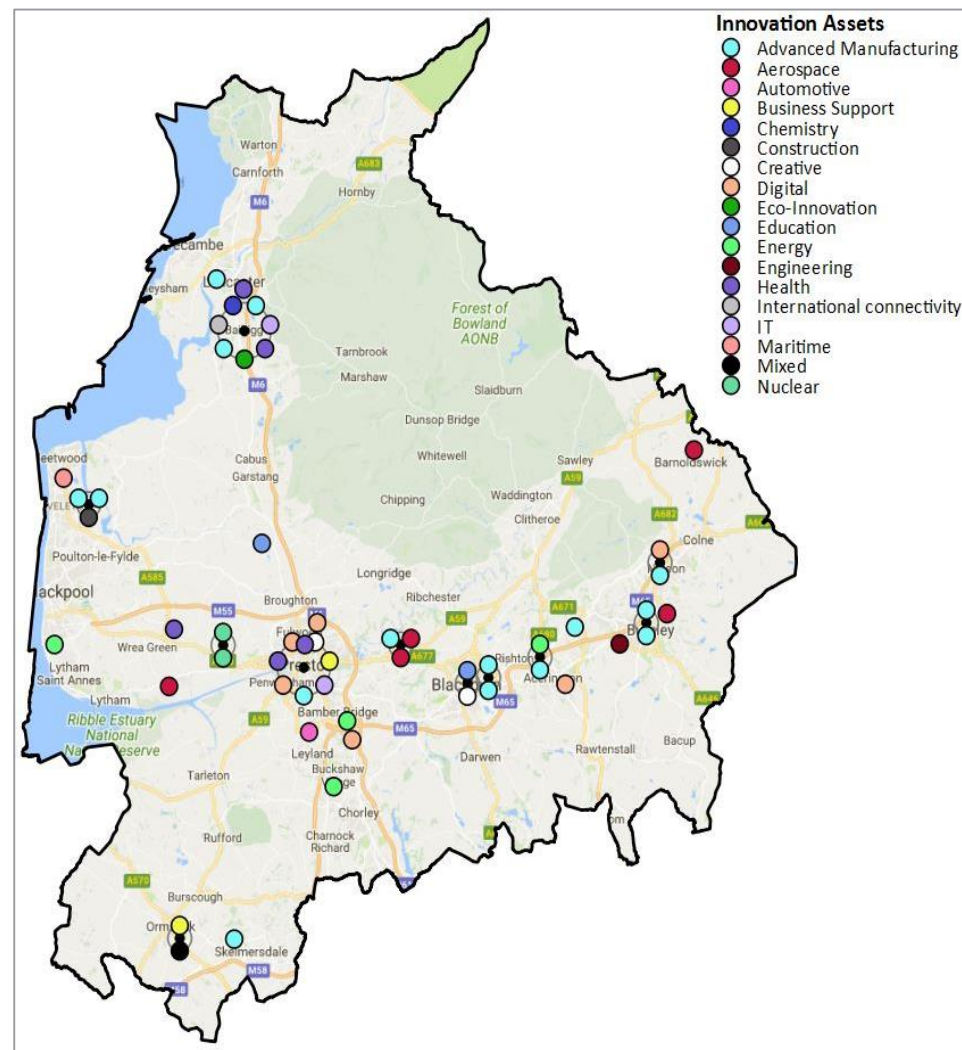
- Four universities operate in Lancashire – the table below shows how they rank in terms of different ranking schemes.
- The Lancashire Innovation Plan identifies: 54 innovation assets that support and enable innovation, which cover 16 sectors, including:
 - Advanced Manufacturing (15 assets);
 - Digital (6 assets);
 - Energy (5 assets);
 - Aerospace (5 assets); and
 - Health (5 assets).
- There is a concentration of assets along the West to East corridor (M55-M6-M65).
- There is a substantial concentration of assets around the Lancaster University and UCLAN Campuses.
- Digital assets appear to be disparately distributed, with no apparent signs yet of effective clustering.

Higher Education Institutions

	Times UK Ranking	Times World Ranking	QS World Ranking	REF Power Ranking	FTE Students	Intl Students
Lancaster University	6	=150	=135	25	11,637	38%
University of Central Lancashire	93	601-800	801-1000	74	16,500	18%
Edgehill University	61	-	-	96	-	-
Cumbria University	125	-	-	142	-	-

Source: The Times/The Sunday Times: Good University Guide 2018, Times Higher Education World University Rankings 2018, QS World University Rankings 2018, REF 2014 Power Rankings

Lancashire's Innovation Assets

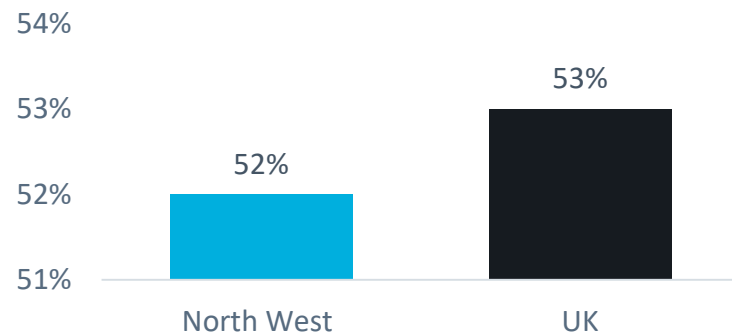


Source: Lancashire Innovation Plan, 2018

Patent applications

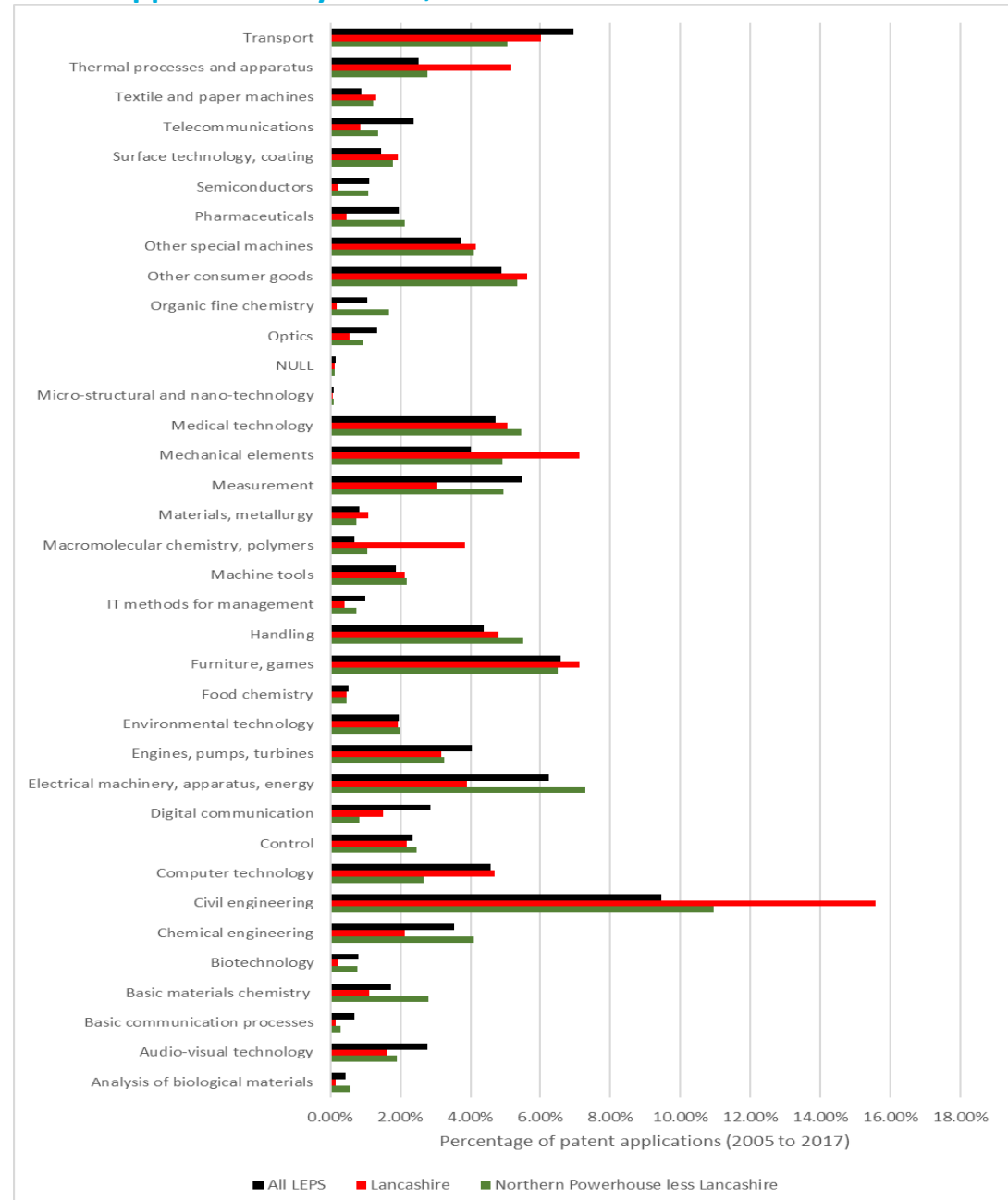
- Firms and research institutions based in Lancashire are actively developing patents across a broad range of sectors.
- Relative to other LEP areas, Lancashire has particular prominence in patents for:
 - Thermal Processes & Apparatus;
 - Mechanical Elements; and
 - Civil Engineering.
- With further strengths in Digital and Healthcare.
- It should be noted that these data capture 'local' patenting, which does not include patents from major multi-national corporations (MNCs) with registered HQs outside Lancashire, so these data understate the level of activity in Lancashire
- Data on innovation active businesses are only available at regional level – the North West is only marginally behind the UK average.

Innovation active businesses



Source: Innovation Active Enterprises, UK Innovation Survey 2015 (survey period 2012-2014)

Patent applications by sector, 2005 to 2017

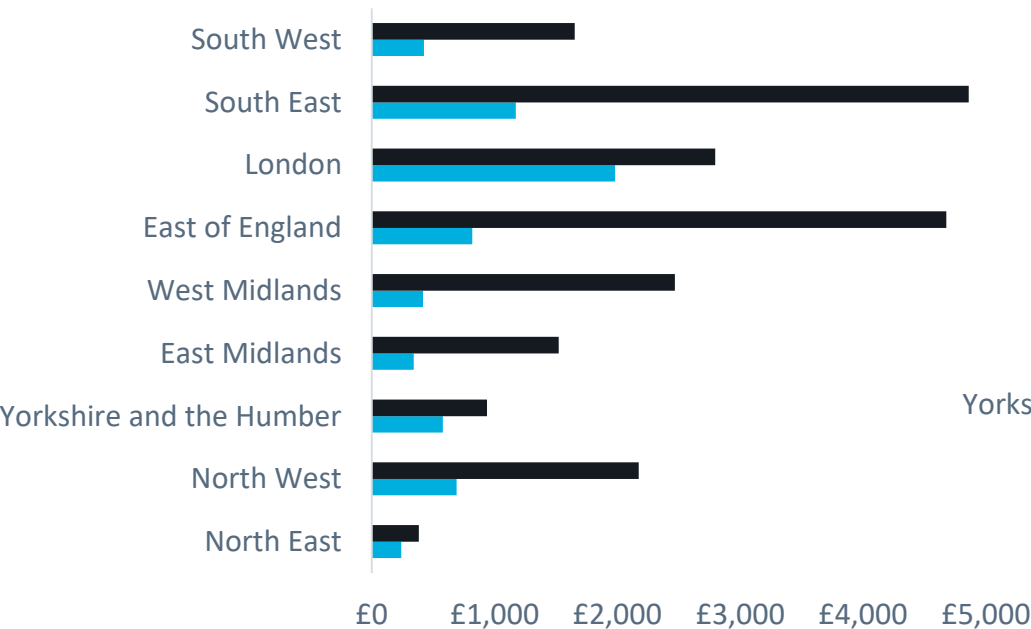


Source: IPO, 2017

R&D Spend

- Data on R&D expenditure is available at regional level for university and business investment – this provides an indication of the levels of investment in R&D in Lancashire.
- It shows:
 - HE R&D investment per head is £95 – 80% of the England average; and
 - Business R&D investment per head is £300 – around 80% of the England average.
- Data on investment in R&D by government and charities is not available at the level of the NW due to issues of confidentiality.

Gross R&D Expenditure by Business and Higher Education



R&D Expenditure per person by Business and Higher Education



■ Business R&D Spend (£ million) ■ Higher Education R&D Spend (£ million)
 ■ Business R&D Spend per head ■ Higher Education R&D Spend per head

Source: ONS Country and regional breakdown of expenditure, 2017 and ONS Population Estimates 2019

University research performance

- As noted above, four universities operate in Lancashire:
 - Lancaster;
 - UCLAN;
 - Edge Hill; and
 - Cumbria.
- The Research Excellence Framework (2014) shows Lancashire's HEIs have significant research strengths.
- The high-rated subjects of relevance to the Industrial Strategy are:
 - Business & Management Studies;
 - Mathematical Sciences;
 - Allied Health Professions, Dentistry, Nursing & Pharmacy;
 - Computer Science & Informatics;
 - Earth Systems and Environmental Sciences;
 - Psychology, Psychiatry & Neuroscience;
 - Physics;
 - Chemistry; and
 - General Engineering.
- The next slide illustrates the universities' performance relative to the UK average.

Highest % of research (overall) rated 4* or above by subject & by university

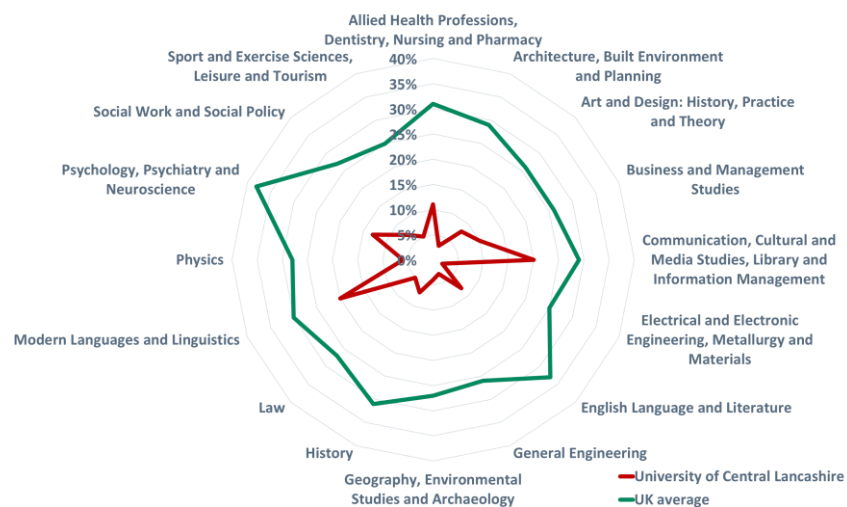
University	Subject	Average of 4* Research
Lancaster	Theology & Religious Studies	42%
Lancaster	Business & Management Studies	41%
Lancaster	English Language & Literature	40%
Lancaster	Mathematical Sciences	40%
Lancaster	Allied Health Professions, Dentistry, Nursing & Pharmacy	39%
Lancaster	Sociology	39%
Lancaster	Computer Science & Informatics	36%
Lancaster	Earth Systems & Environmental Sciences	32%
Lancaster	Art & Design: History, Practice & Theory	31%
Lancaster	History	30%
Lancaster	Psychology, Psychiatry & Neuroscience	29%
Lancaster	Law	28%
Lancaster	Education	25%
Lancaster	Physics	24%
Lancaster	Chemistry	20%
UCLAN	Communication, Cultural & Media Studies, Library & Information Management	20%
UCLAN	Modern Languages & Linguistics	20%
Lancaster	General Engineering	17%
Edge Hill	Psychology, Psychiatry & Neuroscience	15%
Cumbria	Sport & Exercise Sciences, Leisure & Tourism	14%
Edge Hill	Sport & Exercise Sciences, Leisure & Tourism	13%
UCLAN	Psychology, Psychiatry & Neuroscience	13%

Source: REF, 2014

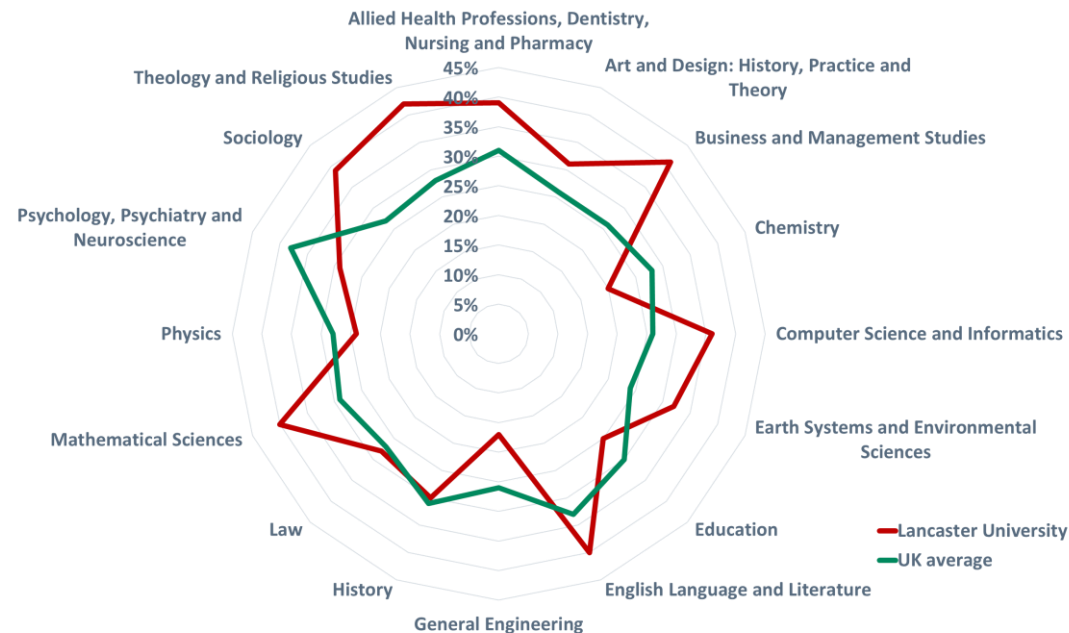
Research performance

% of research (overall) rated 4* or above by subject

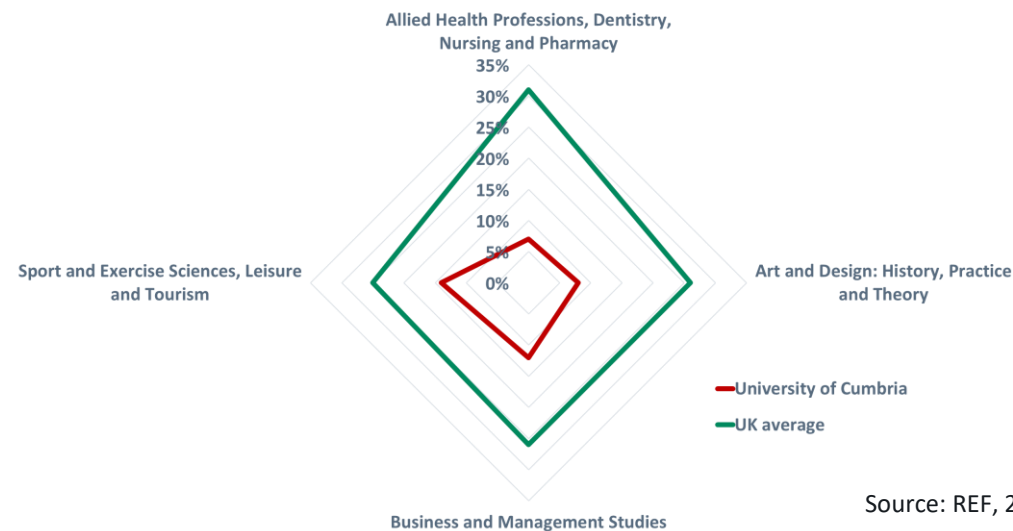
University of Central Lancashire (UCLAN)



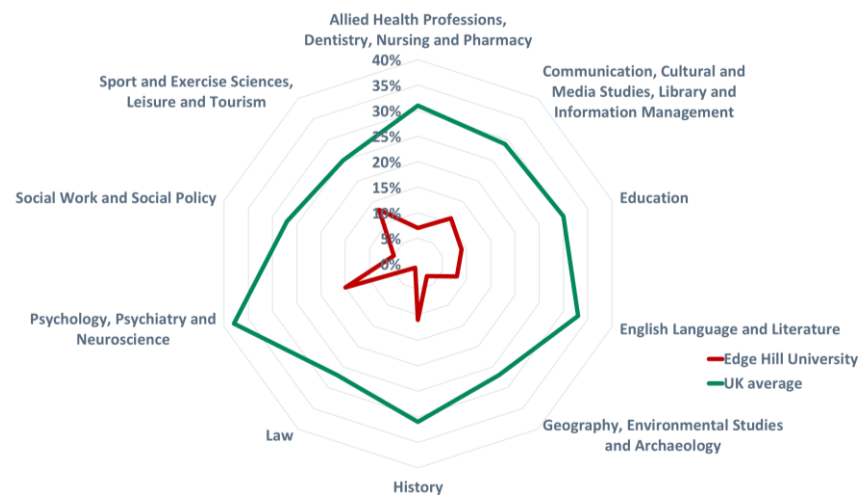
Lancaster University



University of Cumbria



Edgehill University

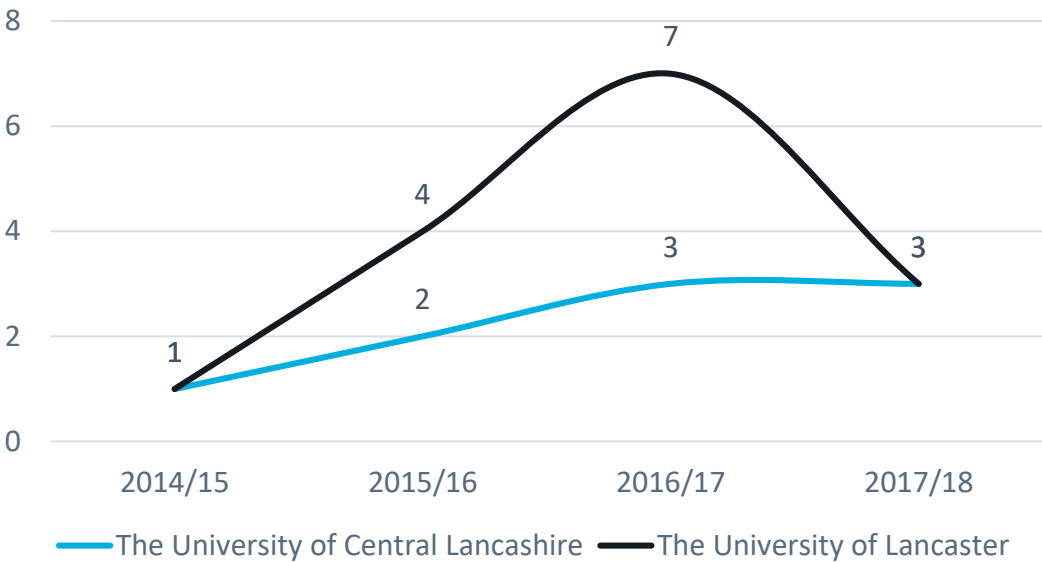


Source: REF, 2014

Universities and Intellectual Property

- Two of Lancashire’s universities, Lancaster and UCLAN, actively generate new IP.
- In 2017/18, UCLAN had 27 disclosures, i.e. research that may be commercially relevant and require a patent, and Lancaster identified 29.
- The generation of findings which may be patentable and then achieves a patent can take time and is ‘lumpy’ making year-on-year comparisons tricky. The range of patents granted each year for Lancaster is in the range of 1-7 and for UCLAN 1-3.
- Between the two universities there are 141 active patents in their portfolios.

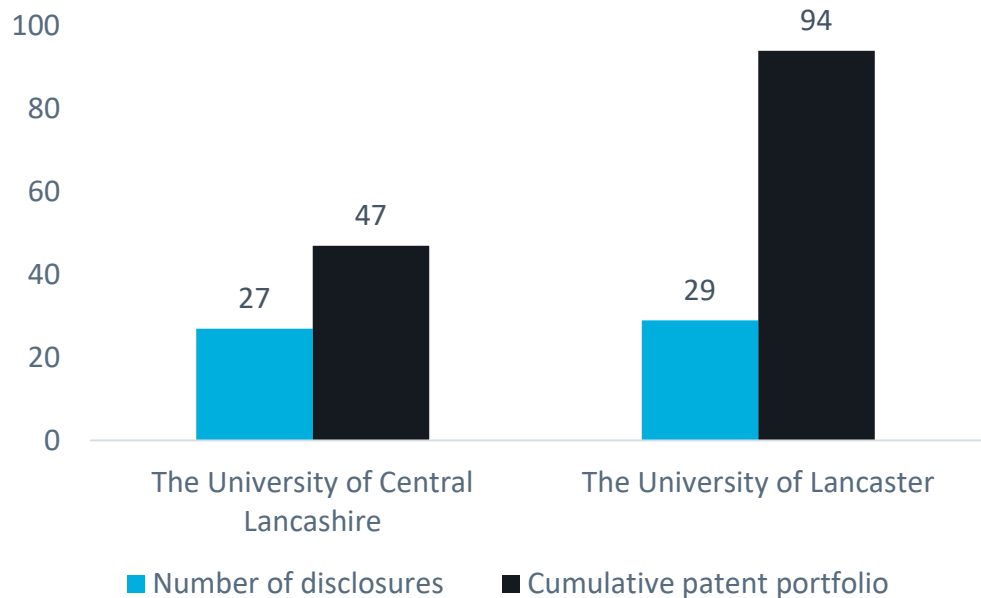
Granted number of patents by year



Source: HESA, 2014/15-2017/18

- In terms of driving GVA and growth, the key challenge for the universities is commercialisation of their research – the next slide provides a breakdown of the data on this.

Patent portfolio and number of disclosures by university



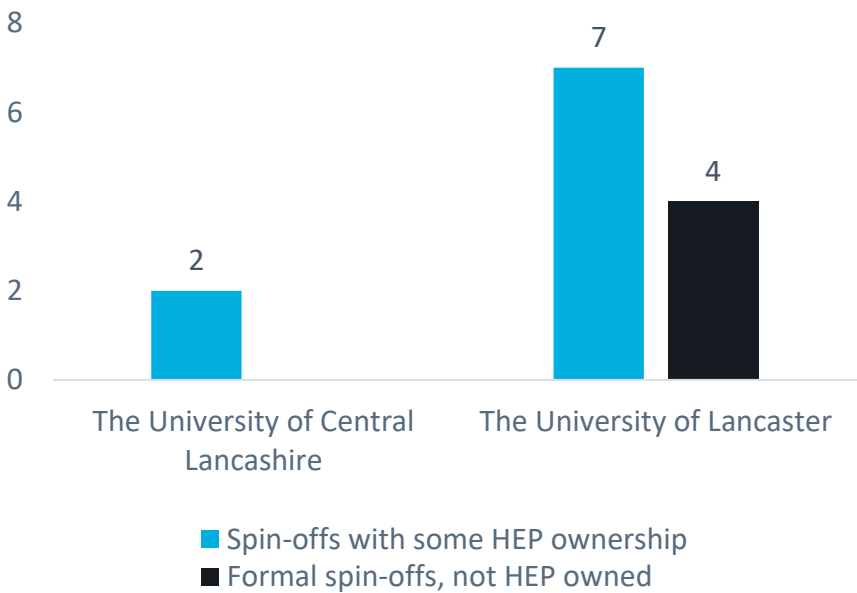
Source: HESA, 2017/18

Source: Lancashire Innovation Plan, 2018

Commercialising Research

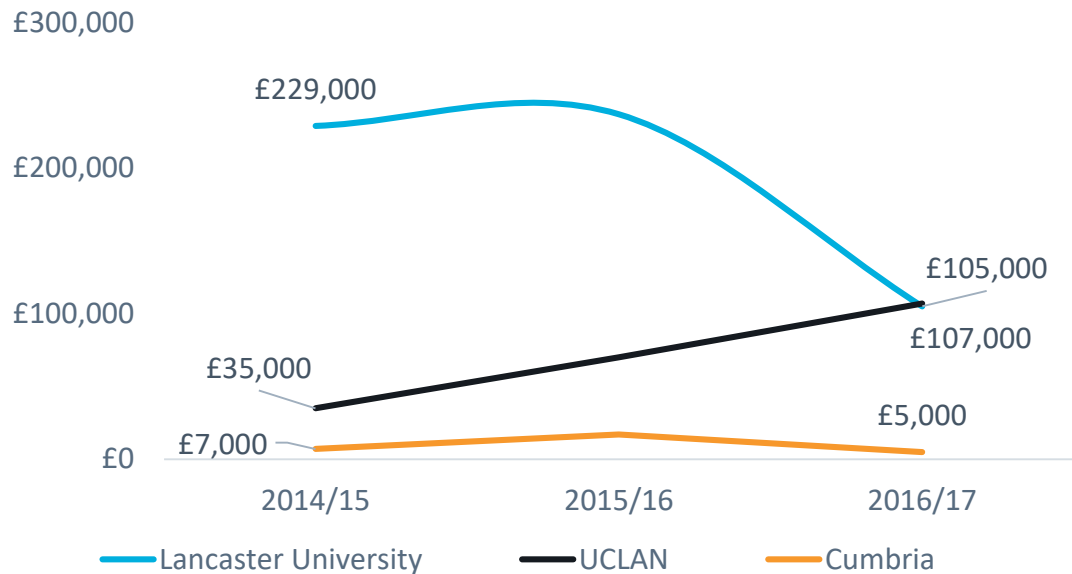
- University research is translated into commercial activity through spin-off companies or licensing.
- Data for 2017/18 show two active spin-offs for UCLAN and 11 active spinoffs for Lancaster – seven of which have at least some ownership with the university.
- To provide a comparison in terms of scale of activity, data for the University of Manchester show 14 active spinouts with university ownership and 12 with no university ownership, and data for the University of Liverpool show 12 active spinouts with some university ownership and 2 without.

Spinoff activity



Source: HESA, 2017/18

Intellectual property income (including patents, copyright, design, registration and trade marks) by university



Source: HESA, 2014/15-2016/17

- The above chart shows income from licensing for Lancaster, UCLAN and Cumbria universities.
- It shows significant variation from year to year – and income of a relatively modest scale.
- To provide a comparison in terms of scale, data for the University of Manchester show £1.65m in 2014/15, £3.6m 2015/16, £1.27m 2016/17 and data for the University of Liverpool show £361,000 in 2014/15, £524,000 in 2015/16 and £683,000 2016/17.

Supporting Business

KTPs

- Universities support the adoption and the spread of innovation via Knowledge Transfer Partnerships
- Lancashire has a strong KTP network – with 10 active KTPs and a track record of successful delivery

Knowledge Transfer Partnerships

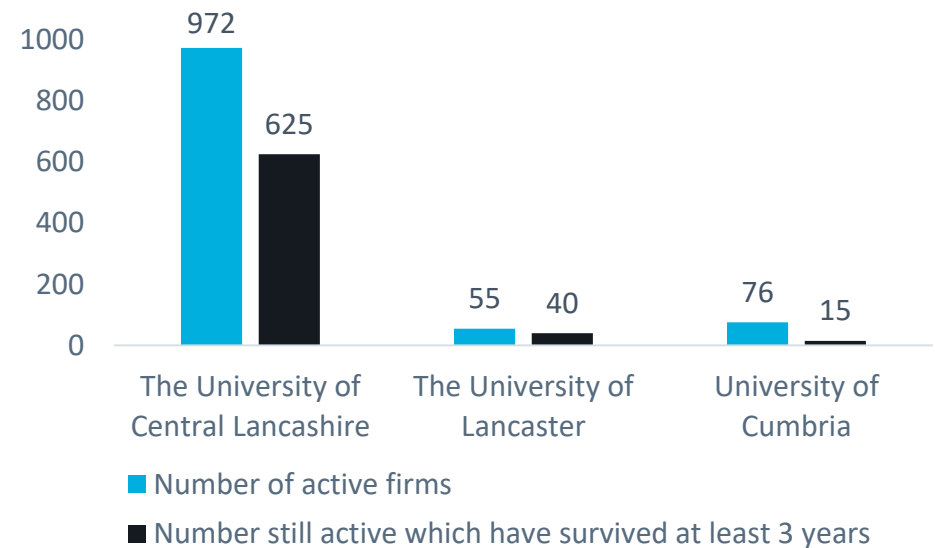
	Current KTPs	Total completed KTPs
Edge Hill University	1	4
Lancaster University	7	43
University of Central Lancashire	2	48
University of Cumbria	0	15

Source: Knowledge Transfer Partnerships Database , InnovateUK (Accessed 05/19)

Graduate entrepreneurship

- Universities in Lancashire have a good track record in graduate entrepreneurship – UCLAN has one of the best records in the country in terms of graduate start-ups.
- Graduate start-ups include all new businesses started by recent graduates (within two years of graduation) regardless of where any IP resides, but only where there has been formal business/enterprise support from the HE provider

Graduate start-ups

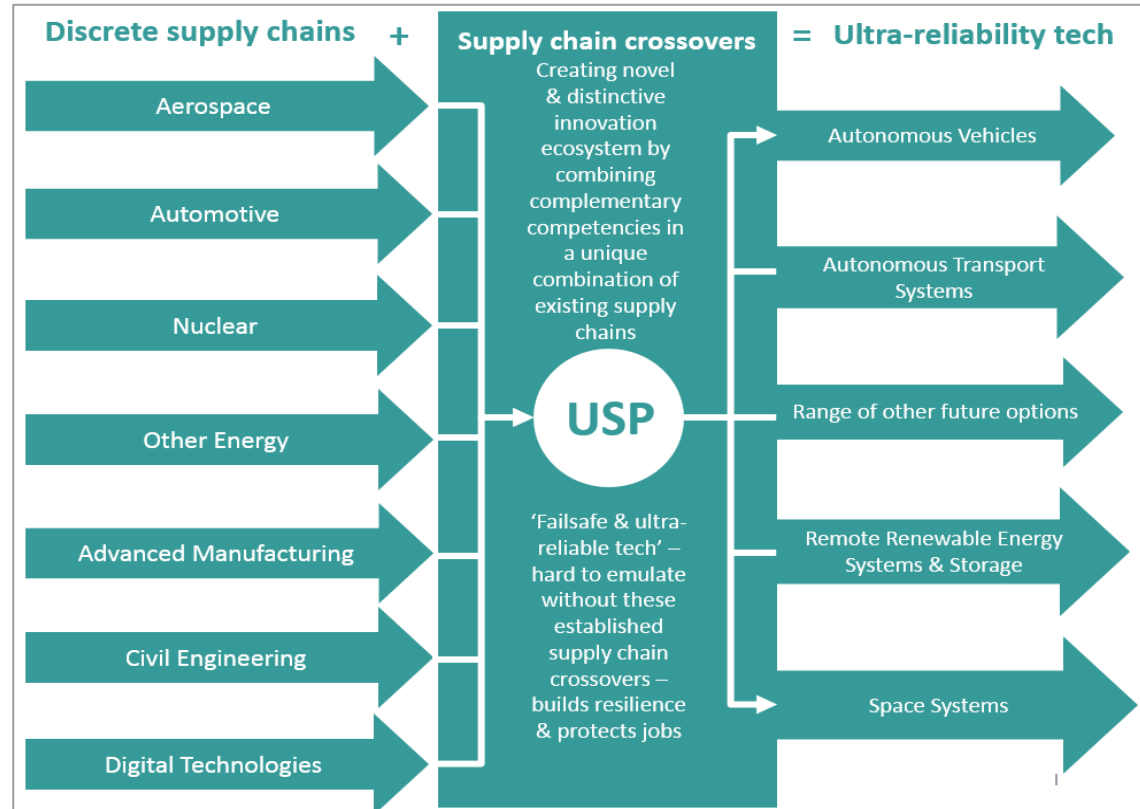


Source: HESA, 2017/18

Supply-chain strengths and innovation opportunities

- Given its mix of industrial sectors, supply chains, and research strengths, plus the technology drivers, which are driving convergence across many sectors, as a result of the digital economy, Lancashire is ideally placed to generate innovative products, services and process across of range of industrial and consumer markets.
- The Lancashire Innovation Plan argues that partnerships and collaboration between businesses and the knowledge base, as well as with Centres of Excellence, within and outside Lancashire should be a focus of innovation activity.
- The Plan goes on to argue that the activity should focus on crossovers between sectors and supply chains where there is untapped potential to combine capabilities which may open up new competitive opportunities
- The figure opposite provides an illustration of Lancashire's existing supply-chain strengths which, for example, could be developed to produce a new capability in 'ultra-reliable technologies'.

An example of how supply-chain strengths and opportunities may be combined...



Source: Lancashire Innovation Plan, 2018

People



Introduction

Outline of this section

- This section covers the size, occupational mix, qualifications and skills of Lancashire's current workforce and projected future requirements.
- It draws on national datasets to look in turn at:
 - Employment rates;
 - Employment by sector;
 - Employment by Occupation;
 - Current skill shortages;
 - Potential sector and occupational changes to 2028;
 - Projected changes in demand for workers at different levels of skill;
 - Educational outcomes;
 - Subject choices of students in Further and Higher Education, as an indication of future talent flow; and
 - Current health as a potential cause of relatively low productivity.

Key messages

- Lancashire's employment rate is relatively good compared to regional and national averages. There are, however, significant variations in the employment rates achieved in different districts. Thus, there is untapped employment potential in the county.
- The employment rate appears to be more volatile than regional and national rates, indicating a need to build resilience in local economies and the workforce.
- Lancashire has a greater proportion of lower level occupations and fewer high-level occupations than the England.
- The largest sectors by employment are Wholesale & Retail Trade, Human Health & Social Work, Manufacturing, Education, and Accommodation & Food.
- Currently there are skills shortages in Skilled Trades, and Administrative and Clerical Staff.
- There are projected reductions in demand for process Plant and Machinery Operatives and Administrative and Secretarial Support.
- The challenge for the local economy in terms of those currently in work will be to reskill those who need to move sectors and upskill those who need to attain new roles in their current sector.
- The education system locally performs well in aggregate but this masks significant variation at the local level.
- STEM subjects are relatively popular with student studying at university, but there is a risk of a mismatch between the educational choices of students and the needs of the economy in the future.
- Some of Lancashire's Districts suffer above average sickness absence rates, which reduces worker productivity – health interventions as part of workforce development will help drive up productivity in some of the areas with relatively low worker productivity.

Employment Rate

Variation in the employment rate

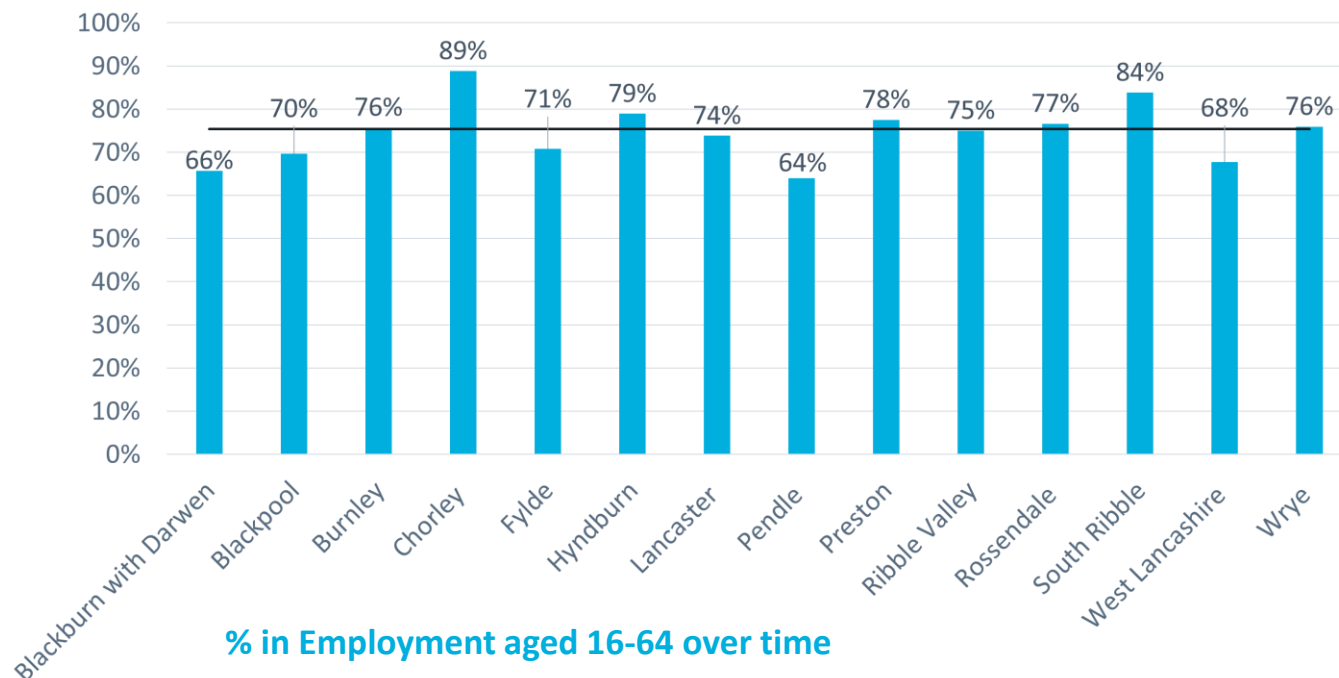
Variations by local authority

- The employment rate varies between Lancashire's Local Authority Districts with a number falling below (and a few significantly below) the England average, namely: Blackburn with Darwen, Blackpool, Fylde, Pendle and West Lancashire.
- A number of areas also outperform England in terms of the employment rate, most significantly Chorley and South Ribble (both areas have employment rates above 80%).

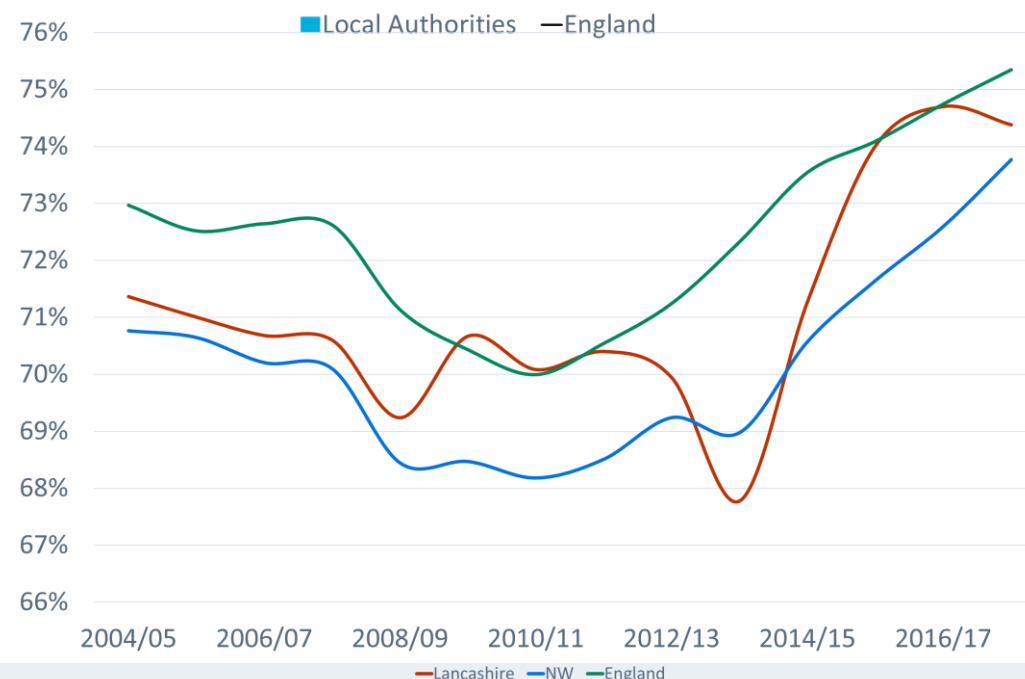
Variations over time

- The employment rate has fluctuated across time, with much of this variation accounted for by national economic trends. However, Lancashire's employment rate appears to be more volatile than North West and England trends.
- Following the 2008 recession, Lancashire initially recovered faster than national and regional averages. This was followed by a more severe second decline in 2013-14. However, Lancashire again recovered quickly with employment growth rates outpacing national and regional averages. More recent data show a tailing off of this growth.
- This pattern of volatility implies a need to build economic resilience.

% in Employment for aged 16-64



% in Employment aged 16-64 over time

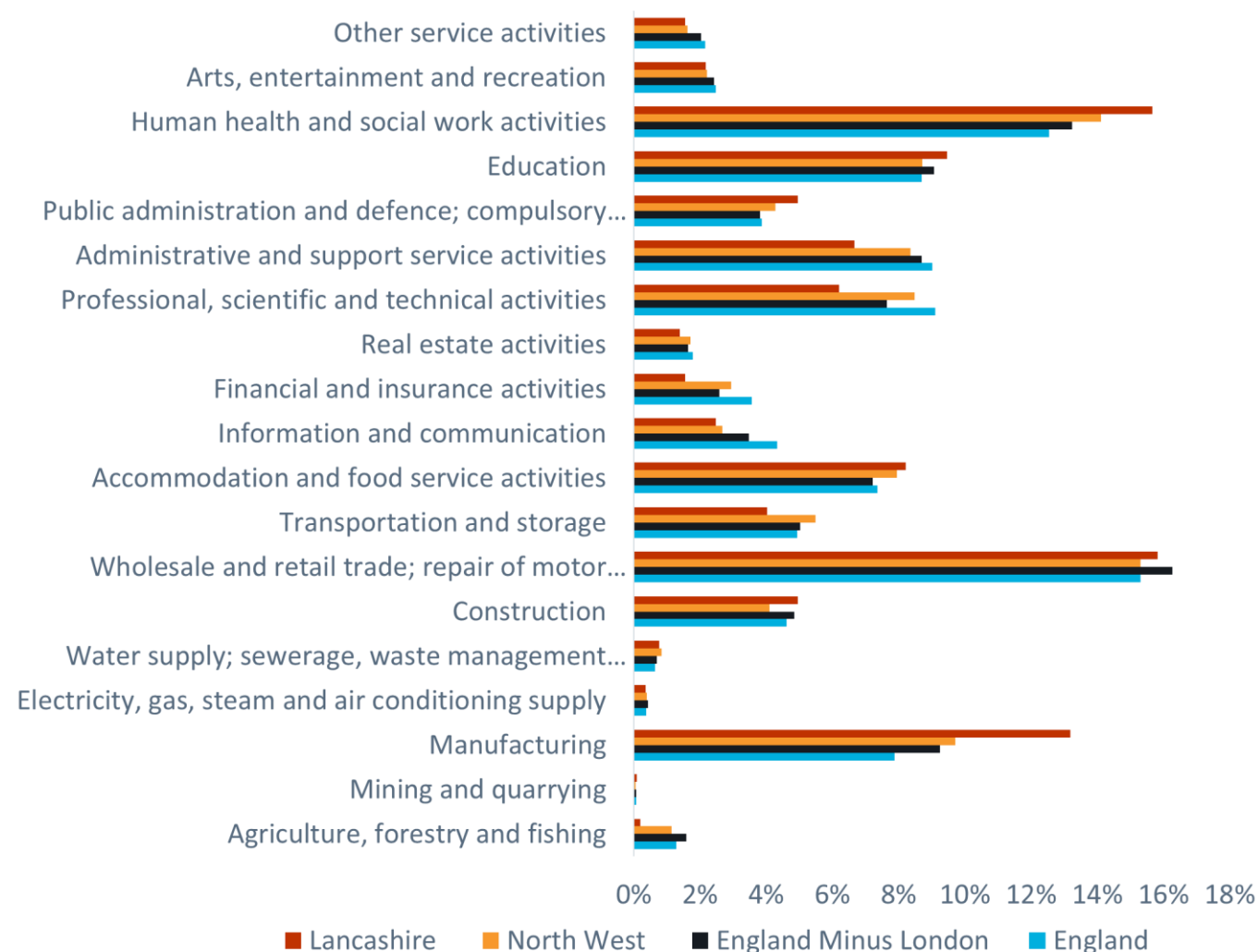


Employment by sector

- Lancashire's sectoral breakdown is distinct from the North West and England for the scale of 'human health and social work activities' and, more significantly, manufacturing in terms of employment numbers.
- Lancashire also has a relatively low proportion of employment in the 'financial and insurance activities' and 'information and communication' sectors.
- The county's largest sectors by employment are detailed in the table below.

Sector	% total jobs
Wholesale & Retail Trade	16%
Human Health & Social Work	16%
Manufacturing	13%
Education	9%
Accommodation & food	8%

Employment by sector

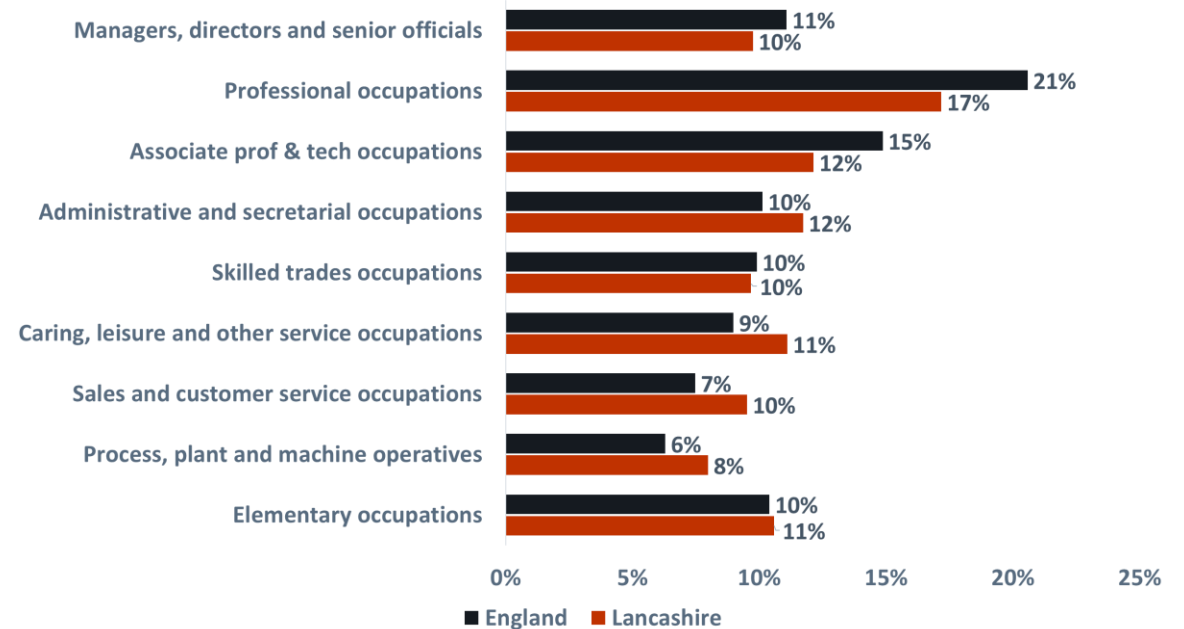


Source: BRES, 2016

Occupational breakdown

- An economy's occupational mix helps to determine the overall worker productivity and earnings.
- Compared to England, Lancashire has a larger proportion of employment in lower skilled occupations and a smaller proportion of employment in higher skilled occupations.
- This mix needs to shift if Lancashire's economy is to increase productivity and earnings.

Employment by occupation, 2018

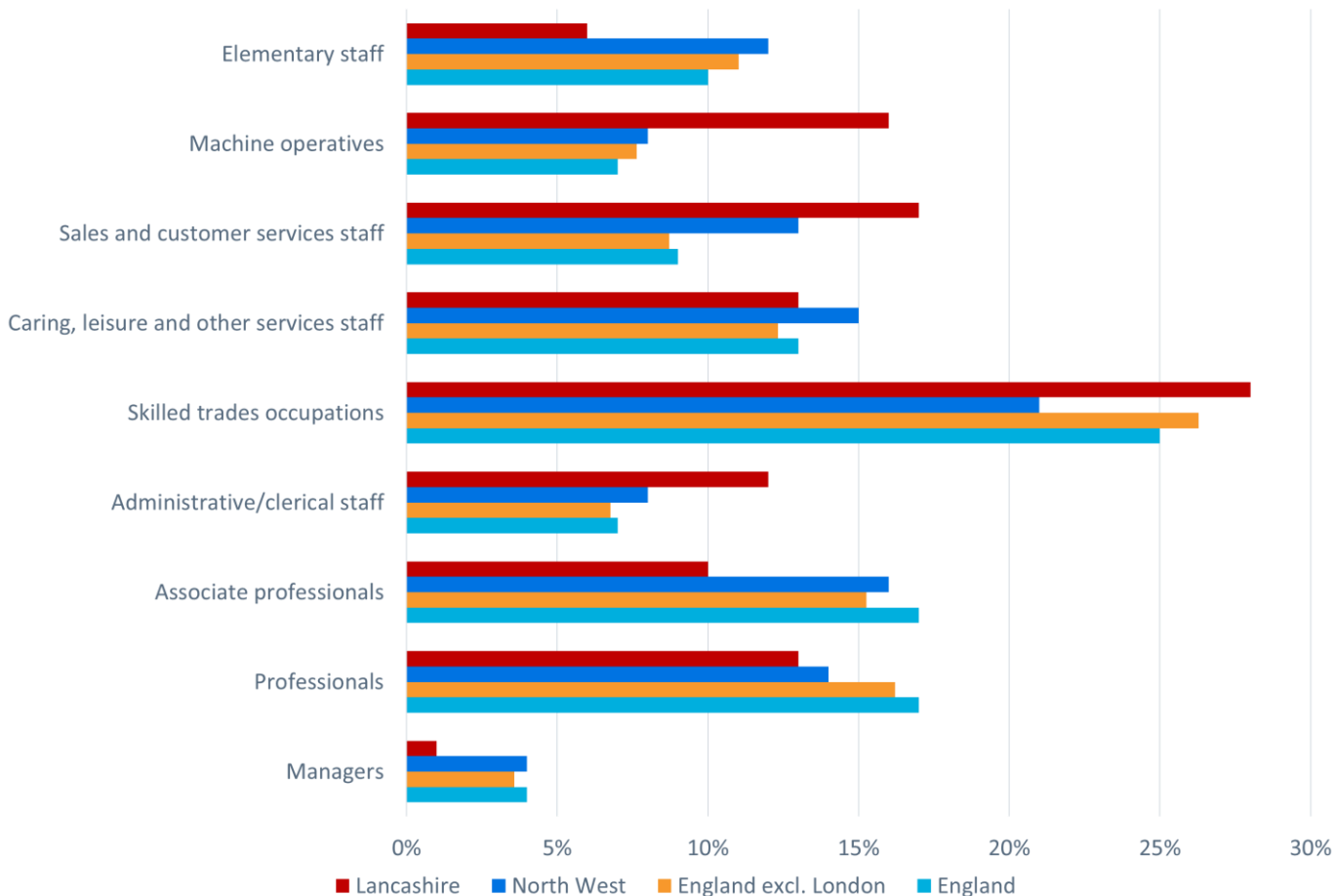


Source: Lancashire Labour Market Intelligence Toolkit, 2018

Skills shortages

- In terms of the current level of supply and demand for skills, Lancashire suffers fewer shortages in elementary staff, associate professionals, and manager when compared to the North West and England.
- On the other hand, Lancashire has greater levels of skills shortages in Machine operatives, sales and customer services staff and skilled trades occupations than the North West or England.
- This pattern - which is mirrored by data on hard-to-fill vacancies - indicates that the majority of current skills shortages in Lancashire are focused on mid-level skills.
- However, this pattern may change in future, as sectoral and occupational change occurs due to shifting technological drivers.

Employers reporting skills shortage vacancies by Occupation



Source: UKCES, 2015

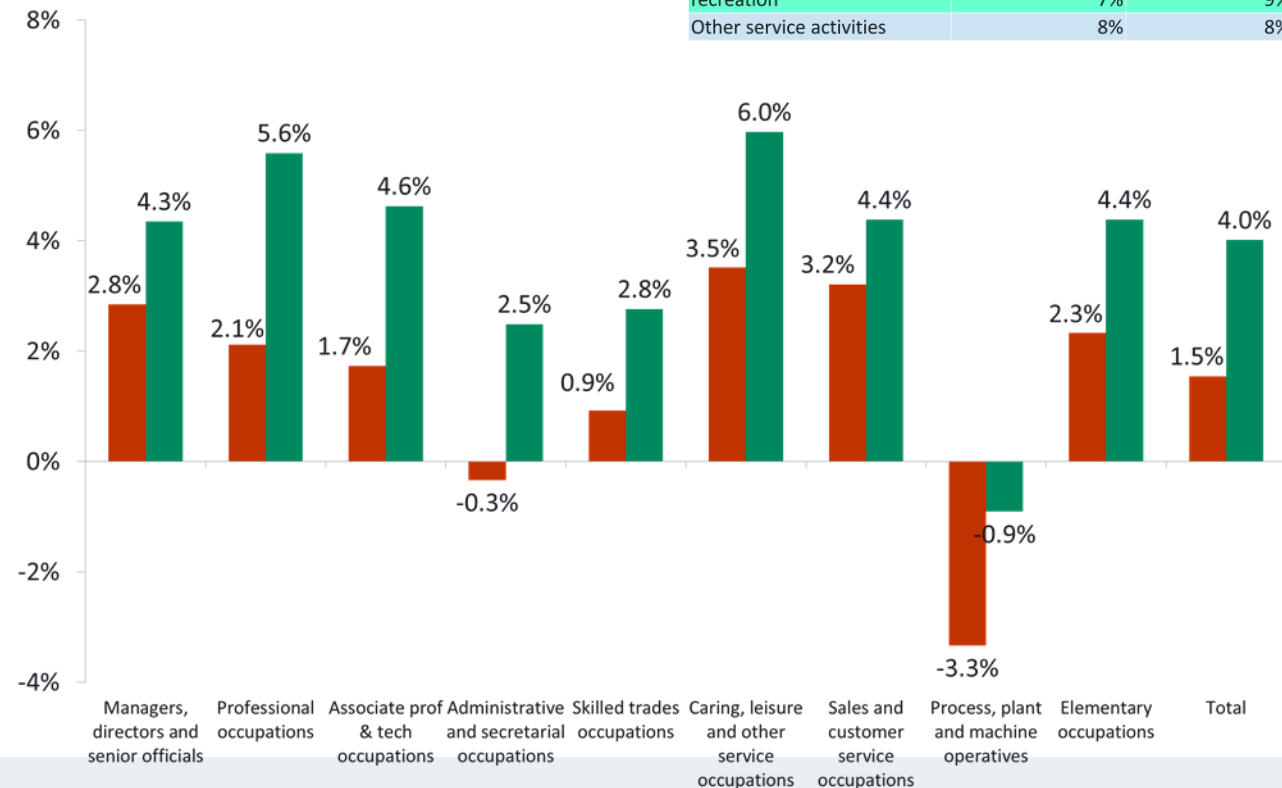
Employment change by sector and occupation 2018-2028

- Between 2018-2028 the UK is projected to experience shifts in employment by sector. Lancashire is projected to experience similar changes to the UK.
- Key anticipated employment growth sectors in Lancashire are:
 - Construction;
 - Professional, scientific and technical;
 - Administration and support;
 - Health and social work; and
 - Arts, entertainment and recreation.
- Sectors projected to shrink in terms of employment include:
 - Agriculture;
 - Mining and quarrying;
 - Manufacturing;
 - Energy;
 - Water and waste; and
 - Public administration and defence.
- These sectoral shifts are projected to link to changes in Lancashire's occupational mix, with falls in demand for Process, plant and machine operatives (linked to a projected decline in manufacturing employment associated with digitisation and automation), and a decline in demand for Administrative and secretarial occupations (linked to digitisation and automation).

Sector change 2018-2028

	Lancashire	UK
Agric', forestry & fishing	-10%	-9%
Mining & quarrying	-32%	-28%
Manufacturing	-13%	-12%
Energy supply	-15%	-14%
Water & waste activities	-10%	-9%
Construction	11%	11%
Wholesale & retail	5%	5%
Transportation & storage	0%	2%
Accommodation & food	4%	6%
Info & comms	8%	10%
Financial services	-3%	-2%
Real estate	6%	10%
Prof, sci & tech	13%	14%
Admin & support	14%	15%
Public admin & defence	-8%	-5%
Education	-1%	2%
Health & social work	3%	6%
Arts, entertainment & recreation	7%	9%
Other service activities	8%	8%

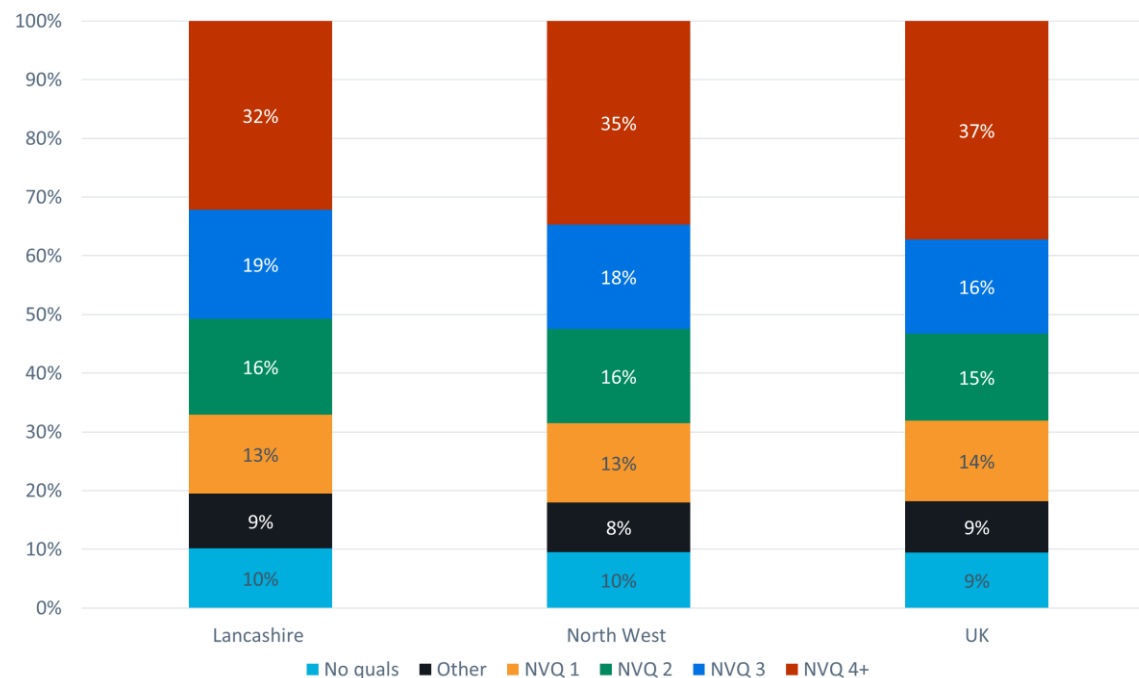
Occupation change 2018-28



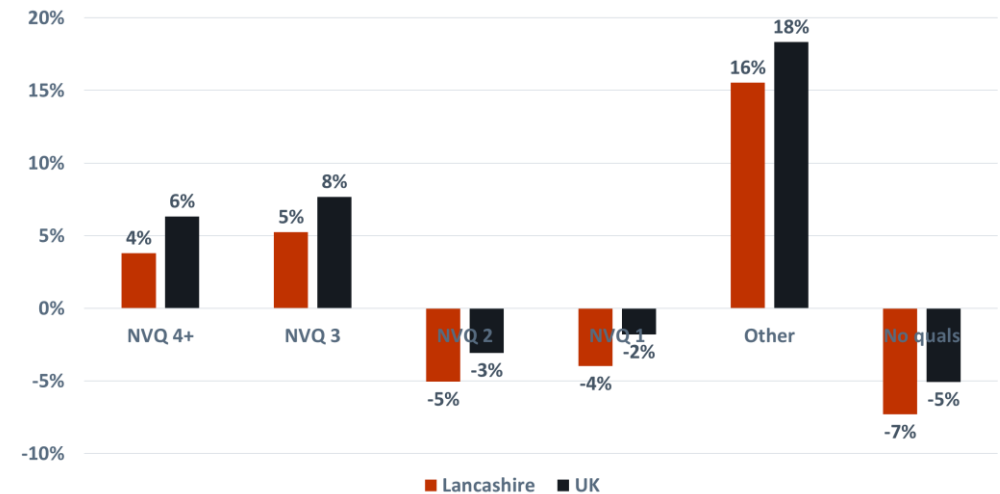
Skill levels – present supply and future demand

- Lancashire currently has a lower proportion of residents with NVQ Level 4+ qualifications than the North West and UK and a higher proportion of those with Level 3.
- Projections of demand for qualifications to 2028 show increased demand for NVQ Level 3 and 4+ with declines in demand for Levels 1 and 2, and a significant fall in demand for those with no qualifications – Lancashire is projected to experience a larger decline in the demand for those with no qualifications than the UK overall.
- Thus, there is a challenge for the local economy to upskill its existing workforce and to ensure that the next generation of workers has the qualifications necessary for the skill-hungry economy of the future.

Existing qualification Levels



Projected demand for qualification levels 2018-2028

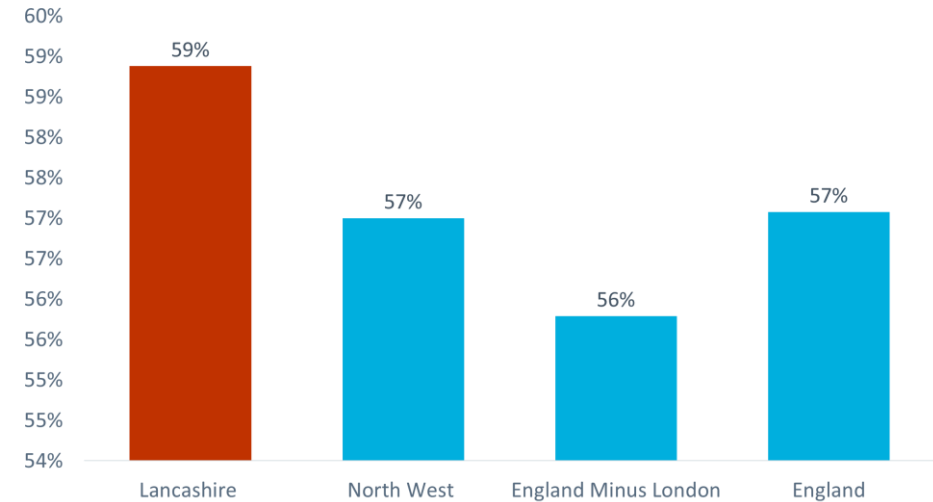


Source: Lancashire Labour Market Intelligence Toolkit, 2018; & Census, 2011

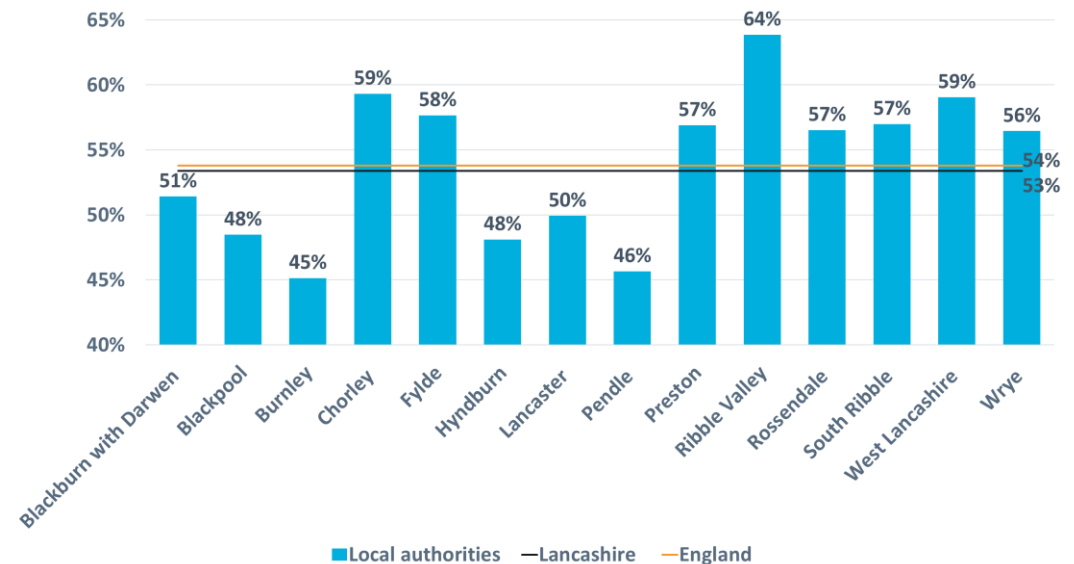
Educational attainment

- Schools, colleges and universities in Lancashire drive the future talent pipeline.
- The picture of current educational performance across Lancashire varies depending on the metrics used.
- Looking at the proportion of residents attaining Level 3 qualifications by age 19, Lancashire outperforms the North West and England.
- Looking at the proportion of Key Stage 2 pupils reaching expected their expected level in reading, writing and mathematics the Lancashire average is on a par with that of England.
- However, there is significant variation in Key Stage 2 attainment at the local authority level with some local authorities (i.e. Blackpool, Burnley, Hyndburn and Pendle) significantly underperforming by this metric.
- The Lancaster average of key stage two attainment is weighted upwards by the strong performance of some of its other local authorities.

% of attainment of Level 3 by age 19



% of pupils at key stage 2 reaching expected level in Reading, Writing & Mathematics

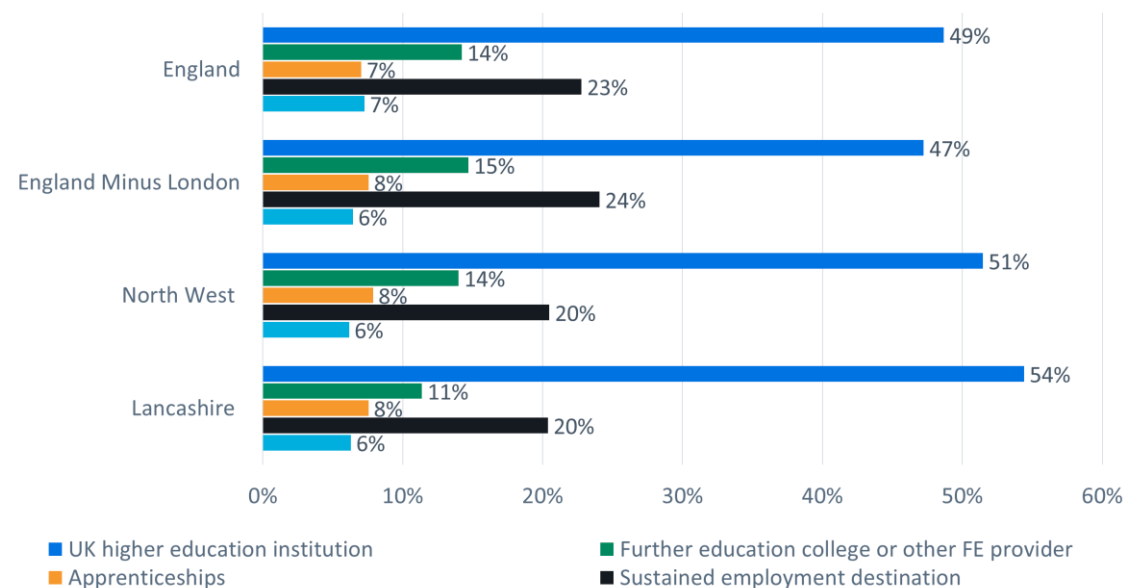


Source: Lancashire Labour Market Intelligence Toolkit, 2018

School leavers destinations

- In Lancashire, a higher proportion of students go into higher education than in the North West or England as a whole – however, there is significant variation between Local Authority Districts.
- However, a smaller percentage of Lancashire’s students move into Further Education than in the North West and England.
- While the percentage of students moving into apprenticeships matches the regional average and is marginally higher than that of England.
- Further Education provision in Lancashire, is mainly rated Outstanding or Good. But there is room for improvement. Stakeholder consultations indicated concern that current funding levels to FE colleges were inadequate to meet expected needs.
- The relative fit of the future talent flow with the local economy’s needs depends on the subject choices of students – the next two slides summarise subject choices in Further Education and Higher Education.

Destination of students after completing Key Stage 5 by %



Source: DfE, 2017

Ofsted Ratings for Schools/Colleges (16-18 years)

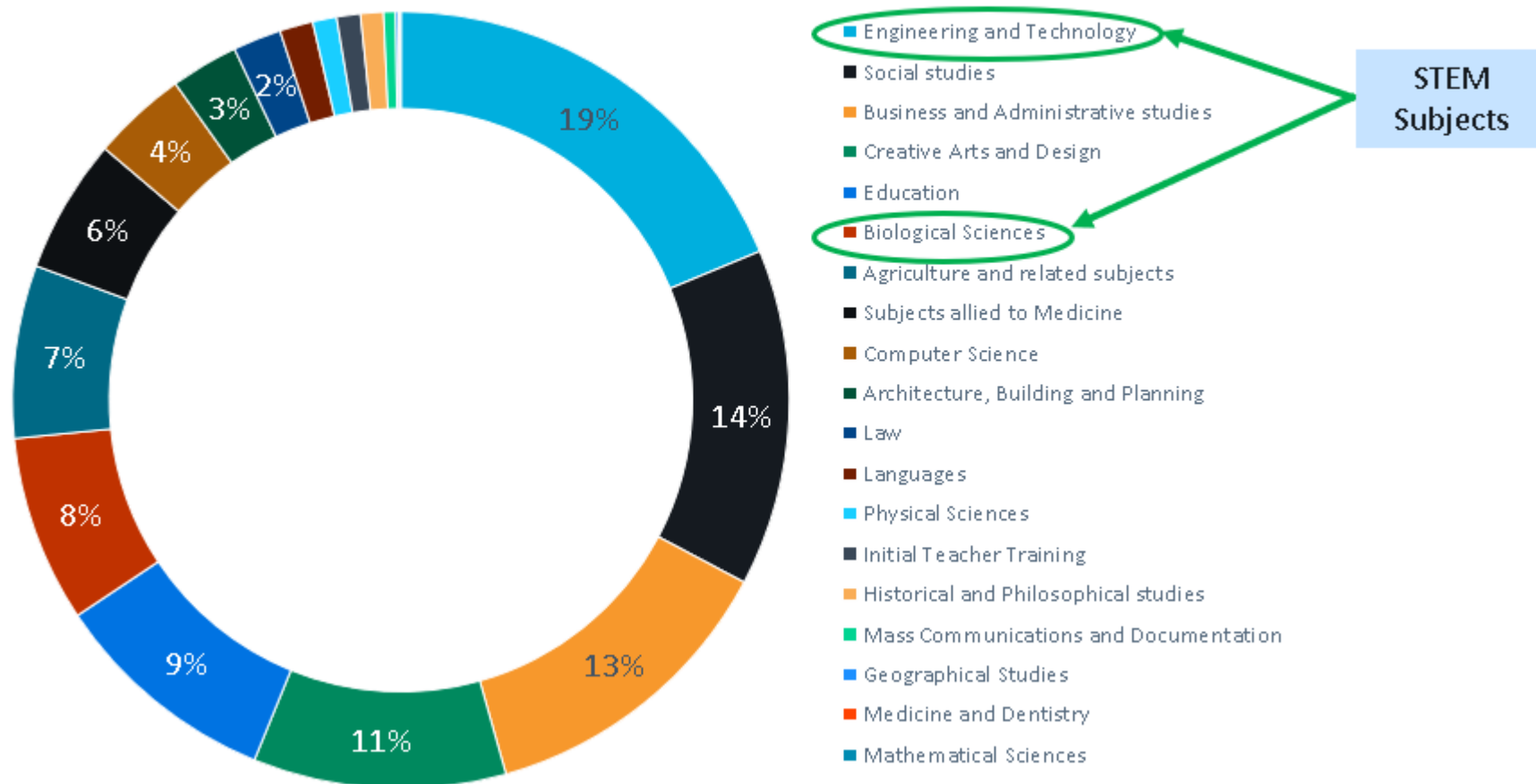
Ofsted Rating	Number of FEI
Outstanding	17
Good	18
Requires Improvement	7
Inadequate	1
No data available	38

Source: DfE, Find and compare schools in England, March 2019

Further Education subject of study

- The figure below presents the breakdown of subjects studied by Lancashire's residents at the further education level – Engineering and Technology is the biggest single subject perhaps reflecting the demand for skills from the county's large manufacturing sector. Biological Sciences is the next largest STEM subject.

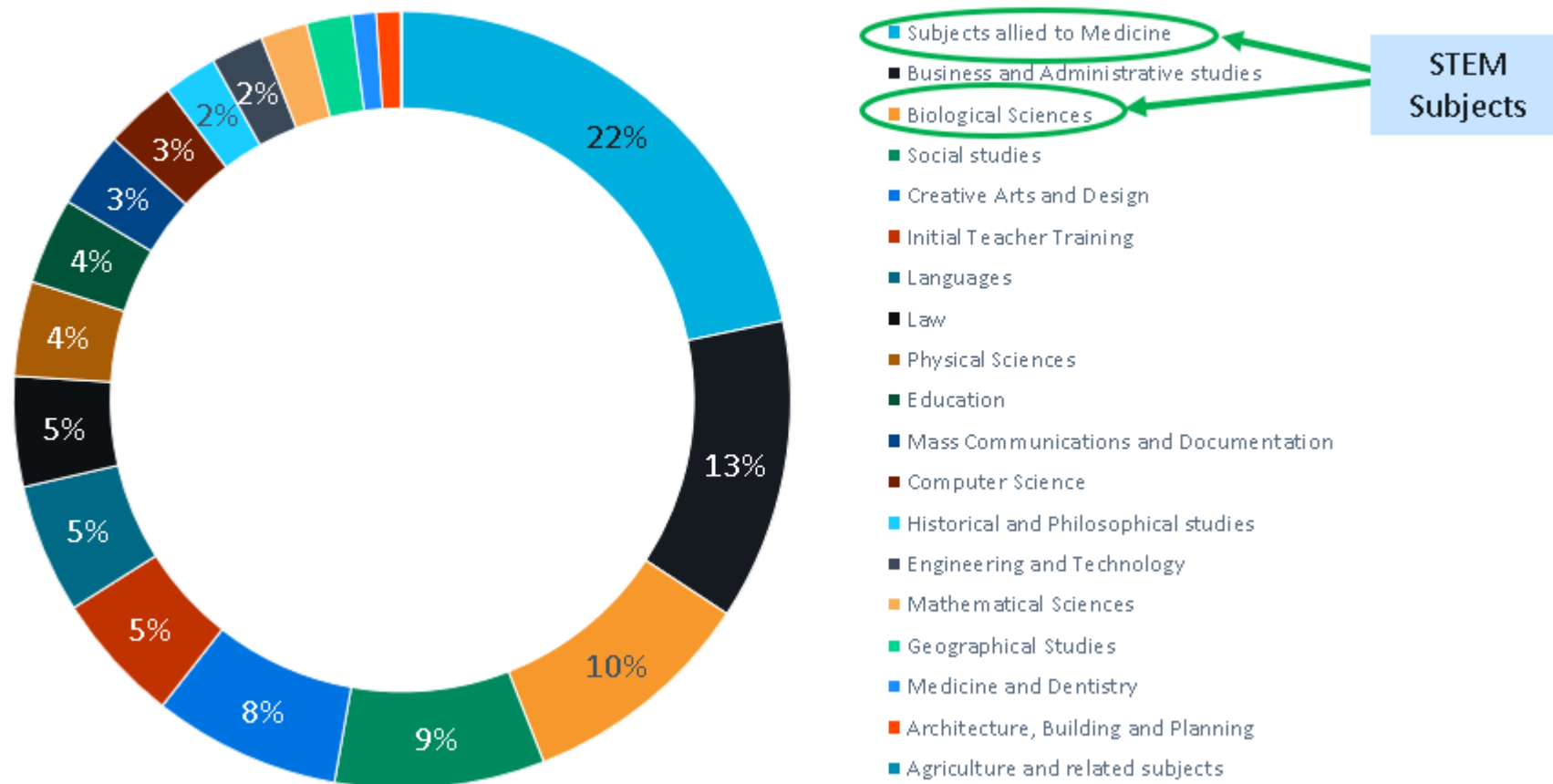
% of Further Education students by subject



Higher education subject of study

- The figure below presents the breakdown of subjects studied by Lancashire's residents at the higher education level.
- A large proportion of students chose to study STEM subjects – particularly related to Medicine and Biological Sciences.

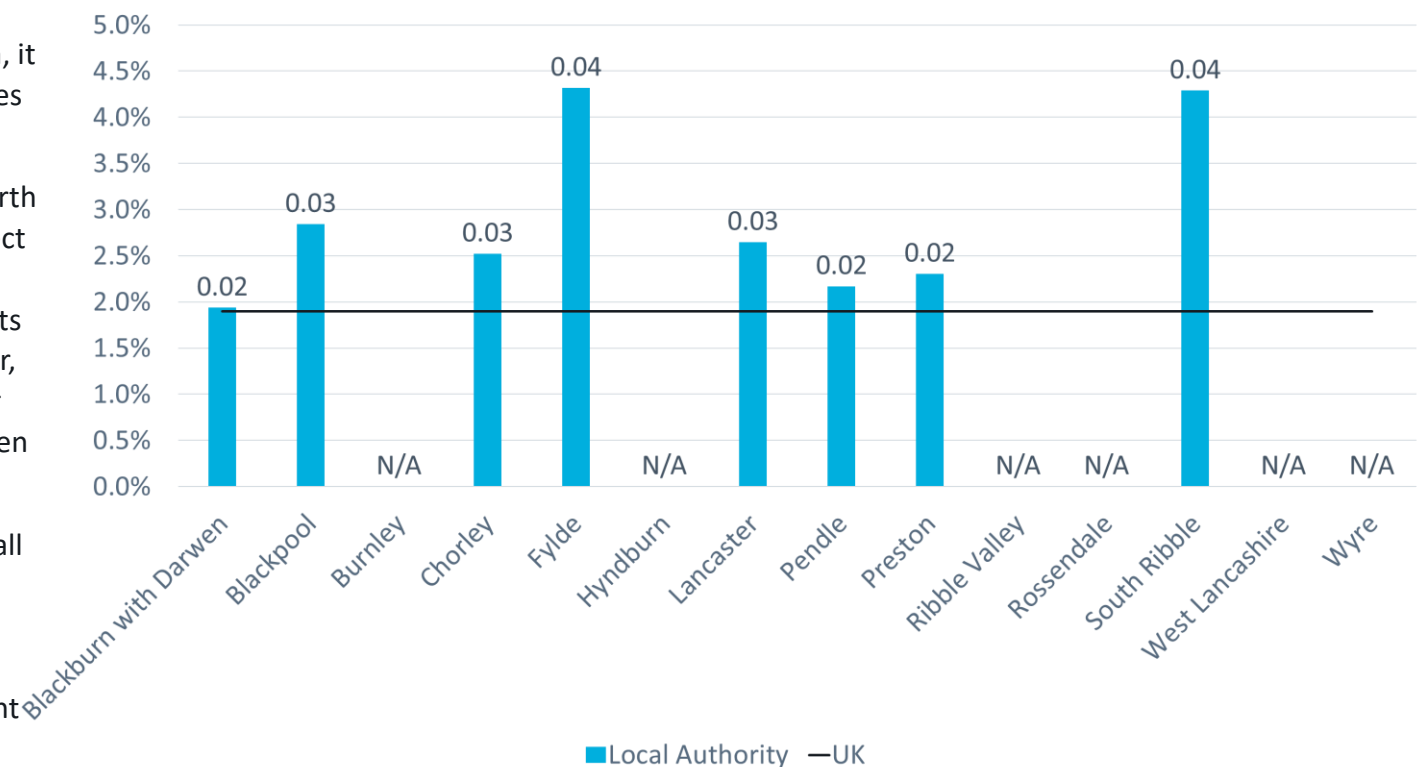
% of Higher Education students by subject



Health

- Health has a significant impact on worker productivity and well-being. For this reason, it is important to understand the health outcomes of residents.
- With regard to healthy life expectancy at birth (i.e. the number of years a person can expect to live in good health), Lancashire underperforms in terms of its male residents compared to the national average. However, Lancashire's female residents have a longer average healthy life expectancy at birth when compared to England and the North West.
- In terms of sickness absence rates, almost all of Lancashire's local authorities appear to perform worse than the UK average. Although, it should be noted that the data provide only a partial picture – they do point to a potential drag on worker productivity.

Sickness Absence Rates



Source: ONS Sickness Absence Rate by Local Authority, 2016

Healthy life expectancy at birth

	Male	Female
England	63yrs	64yrs
North West region	61yrs	62yrs
Lancashire	61yrs	65yrs

Source: Public Health England, 2015-17

Infrastructure



Introduction

Outline of this section

- This draws on national and local data to outline headline evidence in relation to:
- Key transport infrastructure;
- Transport modes for travelling to work;
- Digital connectivity;
- Energy;
- Housing; and
- Land and premises – for which evidence is being collected.

Key messages

- Lancashire is reliant on the road and car travel.
- There are good north-south road links but poor east-west road connectivity.
- Transport infrastructure is concentrated in the south of the county.
- Lancashire has two sea ports, which provide international connectivity, Heysham and Fleetwood, as well as relatively easy access to Manchester airport.
- Digital connectivity appears to be reasonably good compared with national averages, but the lack of fibre optic network is set to limit economic growth under a BAU scenario.
- The county plays a significant role in the country's energy infrastructure with nuclear and offshore wind production. It also has shale gas potential.
- However, lack of access to the gas grid exacerbates fuel poverty in some areas.
- Housing prices are relatively affordable compared to other parts of the country – but there are wide variations within the county.
- Delivery of new housing varies across the county with Chorley exceeding targets.

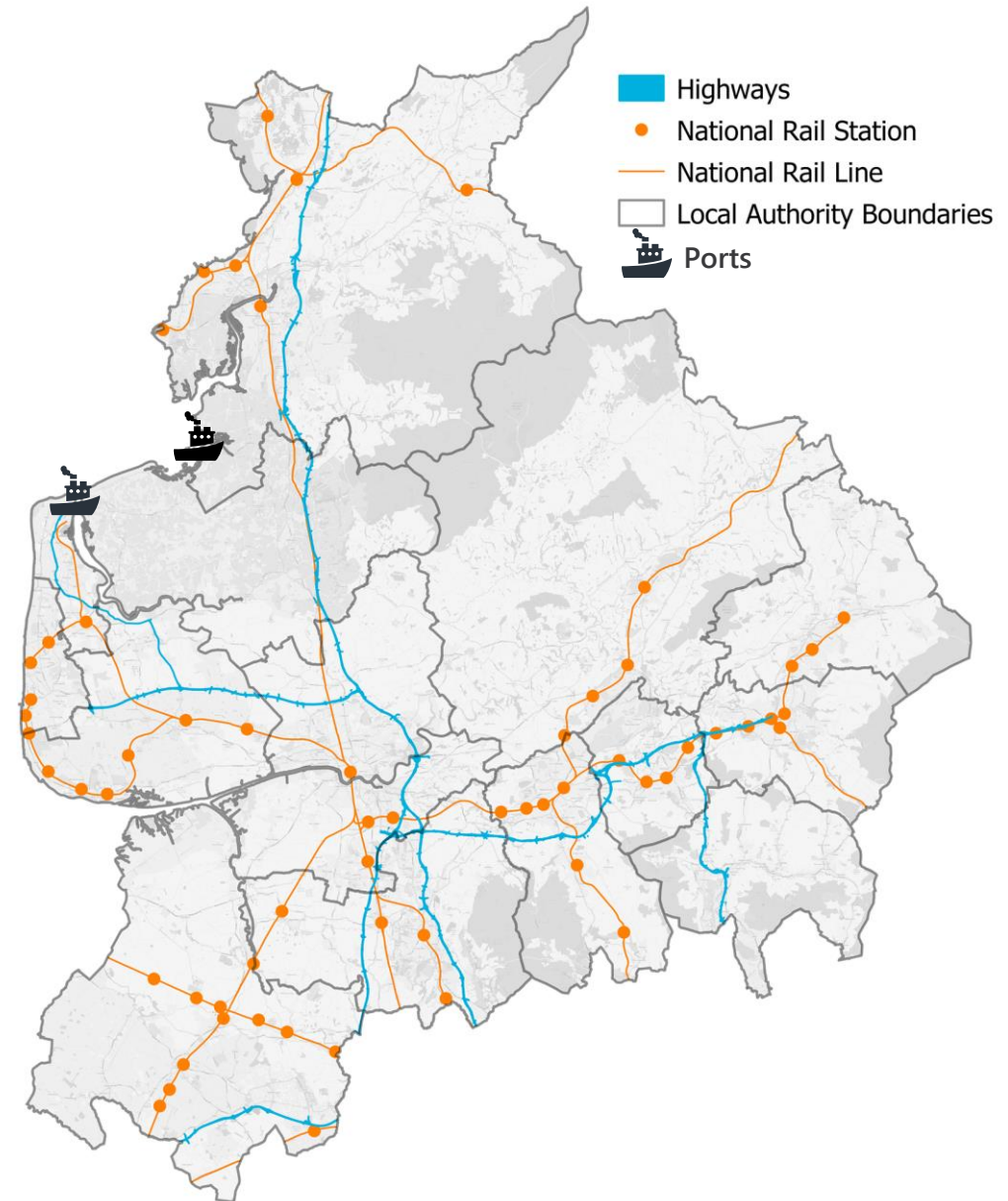
Key transport links

- The distribution of transport infrastructure is uneven across the county with little to no major highways or national rail stations in the northwestern part of the county with the majority of infrastructure concentrated in the south of the county.
- Travel within the county is dominated by road and car.
- The country's road network is characterised by good north-south links and poor east-west links.
- Five of Lancaster's stations see over 1 million passenger entries and exits per year:

Station	Entries and exits 17/18
Preston	4,858,536
Lancaster	2,142,868
Ormskirk	2,006,936
Blackpool North	1,577,596
Blackburn	1,258,190

Source: Office of Rail and Road, 2018

- In addition to its land transport links, Lancashire has two international gateways with ports Heysham and Fleetwood.

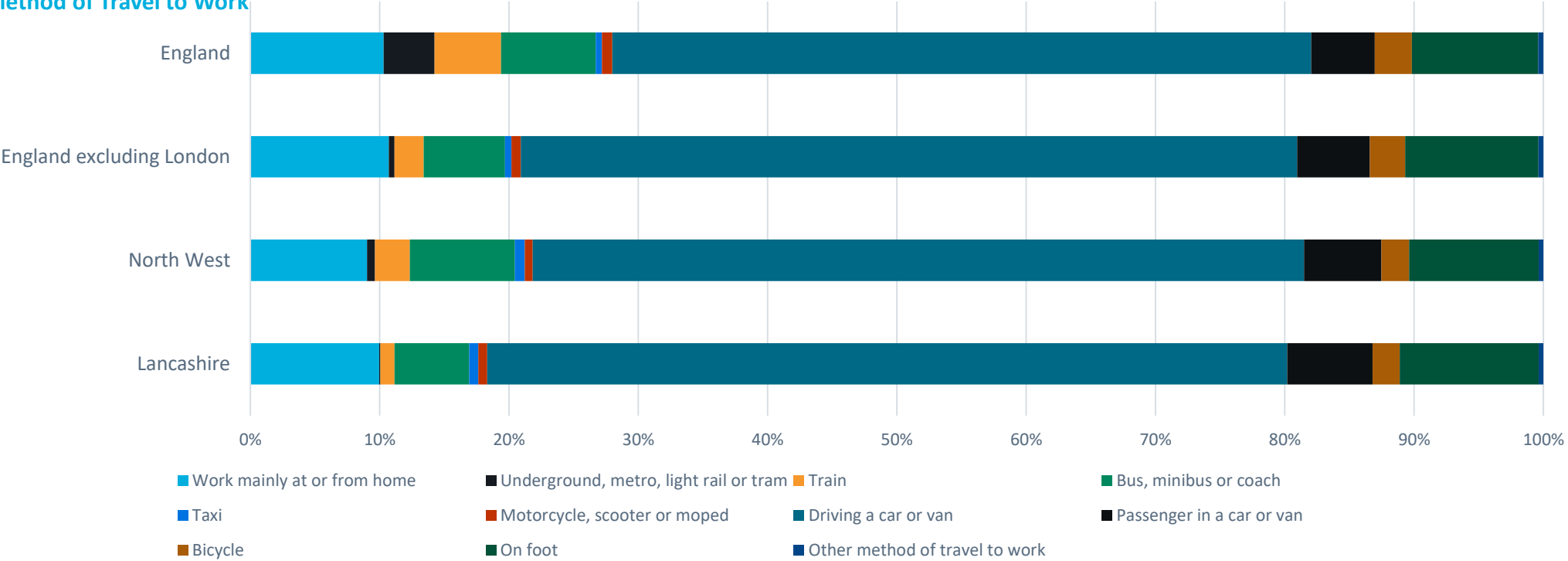


Source: Highways England, National Rail, 2018.

The importance of transport links – Transport modes

- In Lancashire, a relatively low proportion of people travel to work by public transport and accordingly a relatively high proportion travel to work by car.
- Across Lancashire, 7% of residents travel to work by public transport, compared to 11% in the North West, 9% across England excluding London and 16% across England as a whole.

Method of Travel to Work

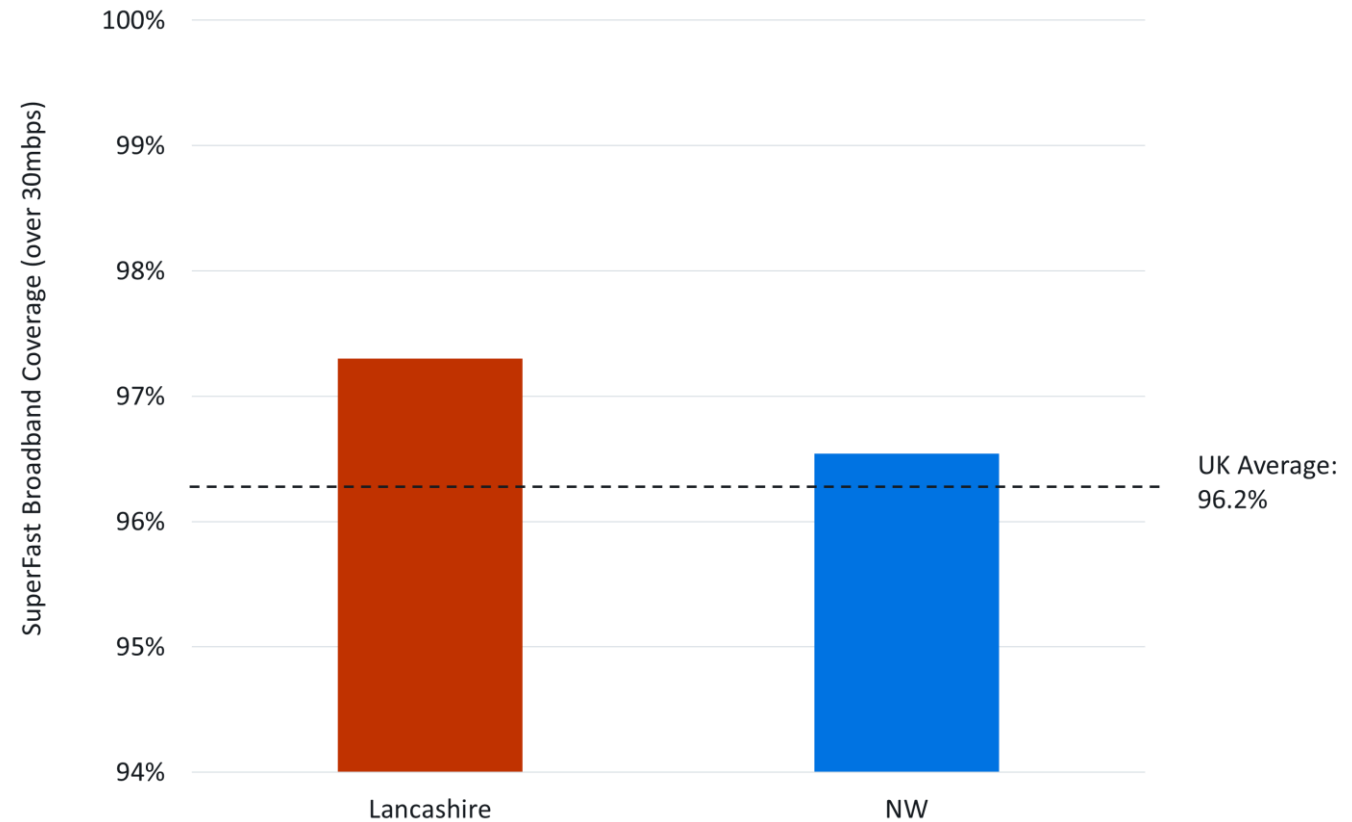


Source: Census, 2011

Digital connectivity across Lancashire

- Lancashire performs well in terms of its digital infrastructure with over 97% of its area benefiting from SuperFast broadband coverage compared to just over 96% across both the North West and UK as a whole.
- However, Lancashire is poorly served by fibre-optic networks, which could hold back the development of the digital economy and adoption of Industry 4.0.

Superfast Broadband Coverage

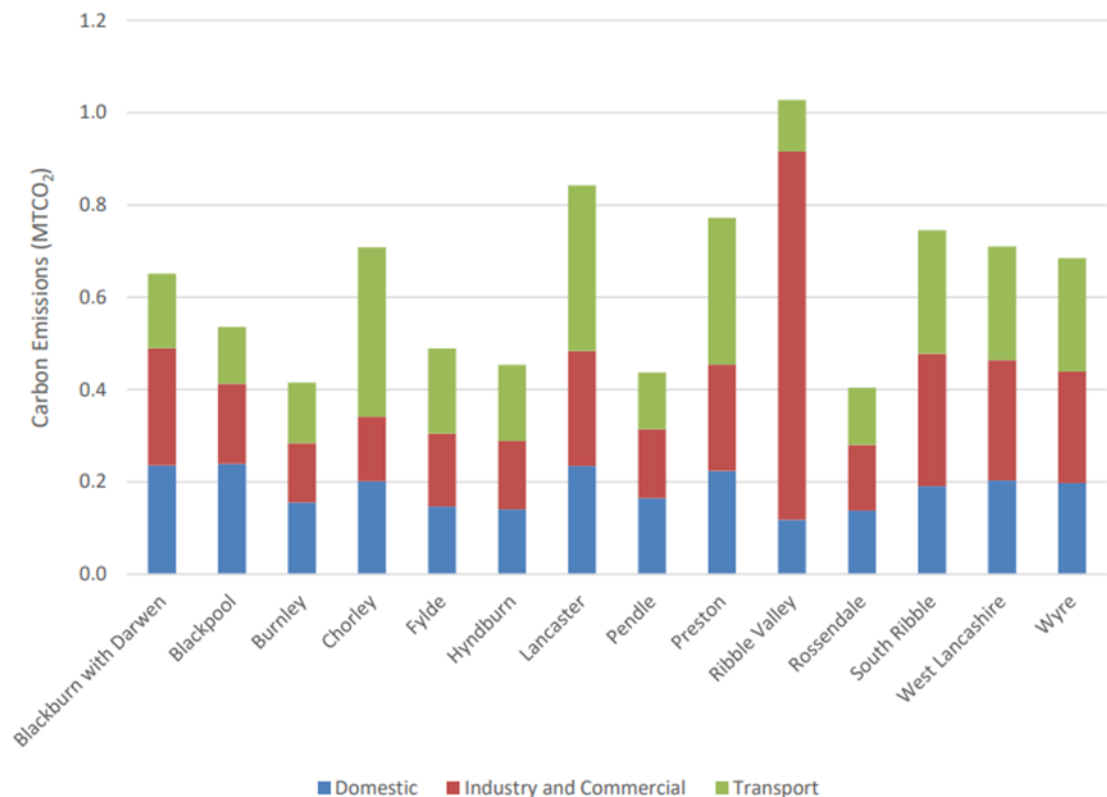


Source: Think Broadband Local Broadband Information, 2019

Energy

- The Lancashire Energy Plan evidence base review found that:
- *“Generally, connections to both the gas and electricity network are not currently providing a barrier to development with good access to both infrastructures. However, specific key development sites can lack the infrastructure to be developed quickly.”*
- It also found that Lancashire has:
- Significant potential for wind power (both on and offshore) however planning barriers may prove a constraint;
- An established nuclear industry and supply chain in which key businesses continue to find new market expansion opportunities; and
- A high-value services sector that supports the small-scale renewable energy industry, which could providing continued growth opportunities.
- Fuel poverty issues exacerbated by lack of access to the gas grid in some areas. Lancashire has Fuel poverty rate of 12.2% compared to 11.8% and 11% across the North West and England respectively.

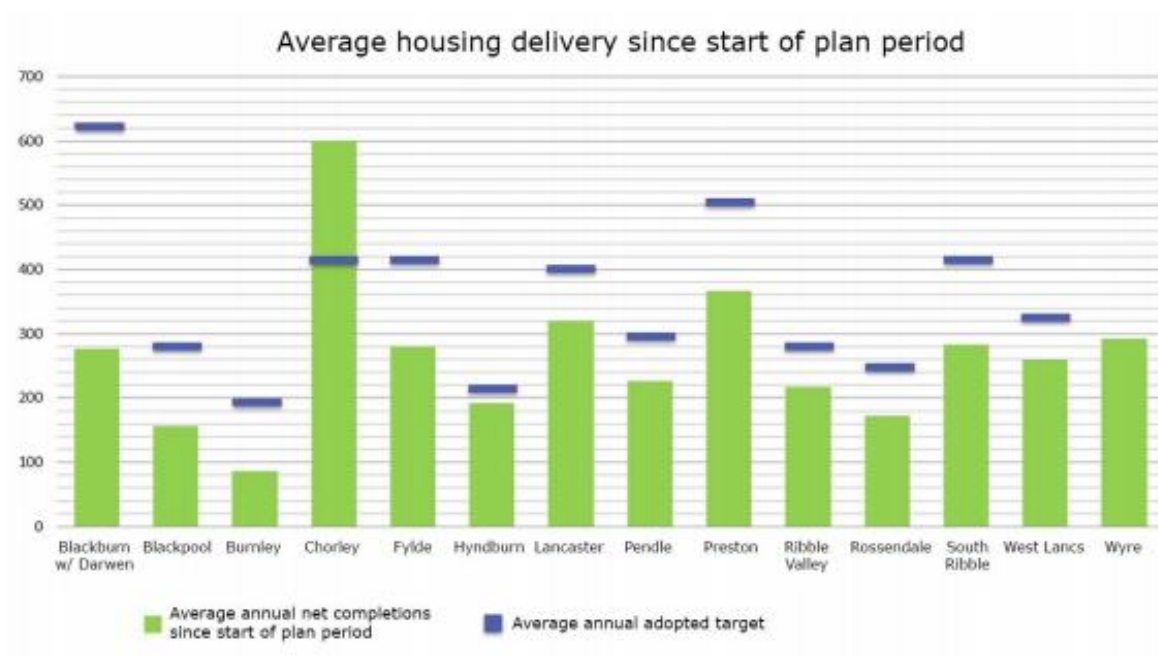
Carbon Emissions by Local Authority District



Source: Lancashire Energy Plan Review

Housing delivery

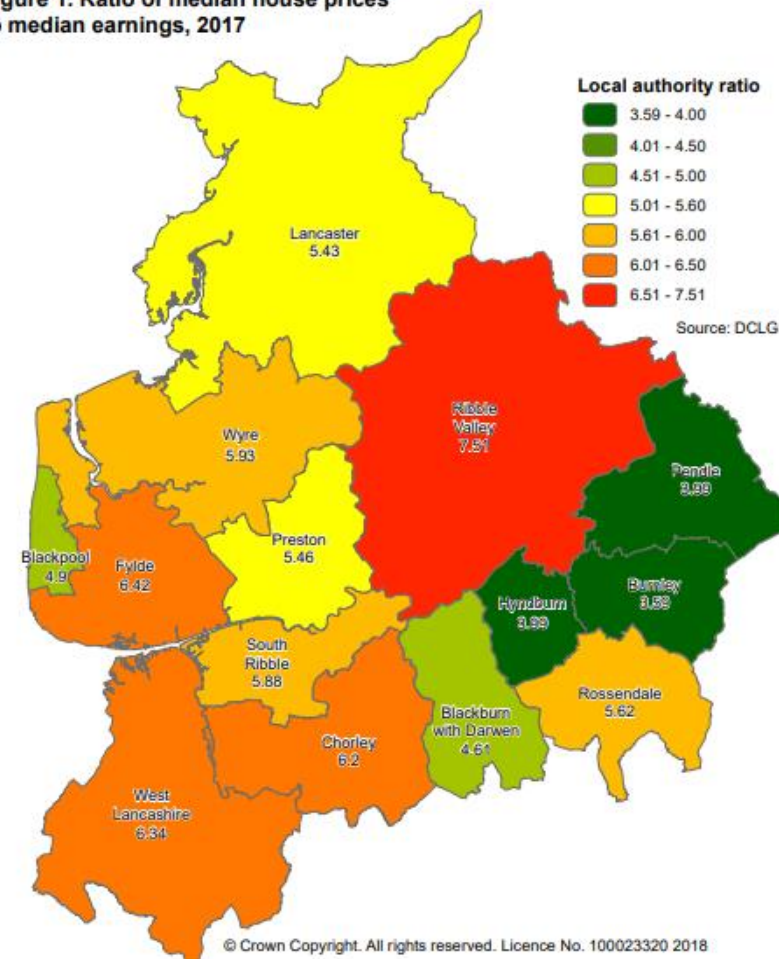
- Lancashire is relatively affordable housing costs, compared to other parts of the country. But housing affordability varies across the county.
- Lancashire is delivering new housing, with Chorley exceeding local plan targets, but most areas have some way to go to achieve their housing delivery targets.



Source: LUC, 2019 & Lancashire County Council, 2018

Housing affordability

Figure 1. Ratio of median house prices to median earnings, 2017



Sites and premises

NB: Further evidence is required.

Source: Census, 2011

Place



Introduction

Outline of this section

- This section looks at the spatial and human geography of Lancashire. It draws on national datasets and local evidence to outline headline issues related to:
- Employment location;
- Travel to Work patterns;
- Variations in employment, earnings and income by Local Authority District;
- Deprivation;
- Housing;
- Quality of Life;
- Visitor economy; and
- Agriculture.

Key messages

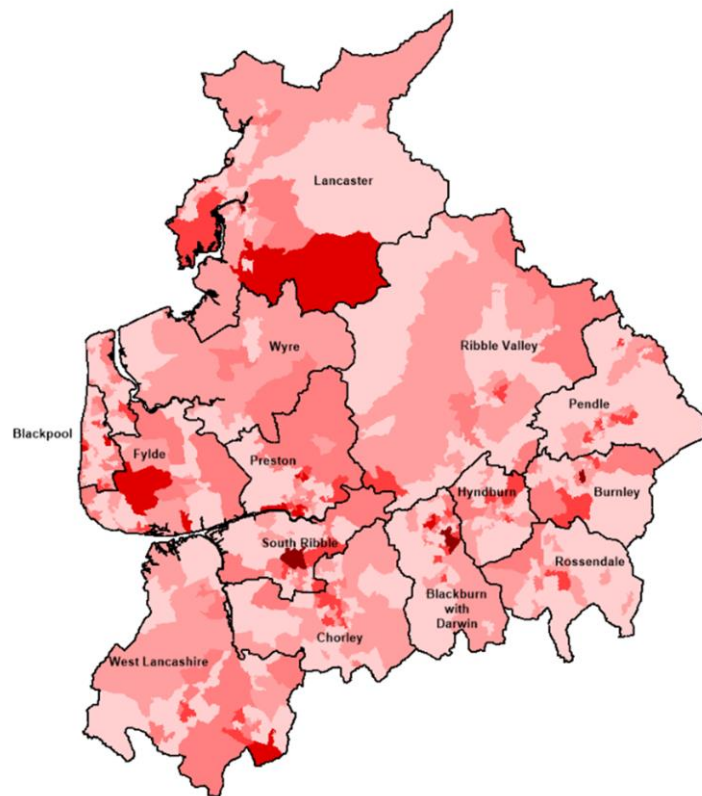
- Lancashire has employment hotspots which are associated with transport provision.
- It has a relatively self-contained labour market – it ‘imports’ 14% of its workforce and exports 12% of its workers to other areas.
- Key sources of workers are: Wigan, Bolton and Sefton, while key destinations for Lancashire residents are these areas plus Manchester.
- There is significant travel to work between local authority areas with sub-regions.
- There are stark variations in rates of benefit claimants and job seekers between Local Authority Districts. These variations are also reflected in weekly pay and disposable income, and maps of deprivation.
- The county has relatively affordable housing, good access to green space, limited issues of air and light pollution.
- While the county is home to nine arts bodies which receive long-term funding from Arts Council England, the cultural offer is limited – and is seen as a limiting factor in attracting and retaining talent and investment.
- The visitor economy and agriculture are key sectors which rely on the physical attributes of the county as a place.
- There are long-term historical strengths on which to build the visitor economy – but major challenges for coastal and seaside towns.
- The agricultural, forestry and fishing industries are intimately linked to place – they form an essential part of the management of the place, with over 200, 000 hectares of farmland.

Travel to work –destinations

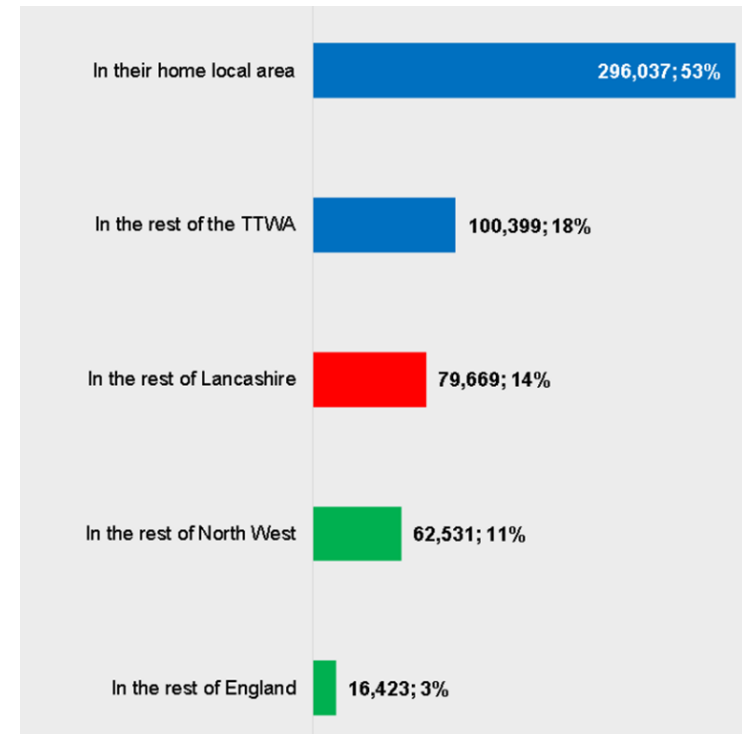
- Given its size, Lancashire has a relatively low level of out-commuting.
- The majority of Lancashire's residents live and work in Lancashire with the areas of highest employment also distributed across the county.

Employment hotspots

(Darker red indicates higher number of jobs)



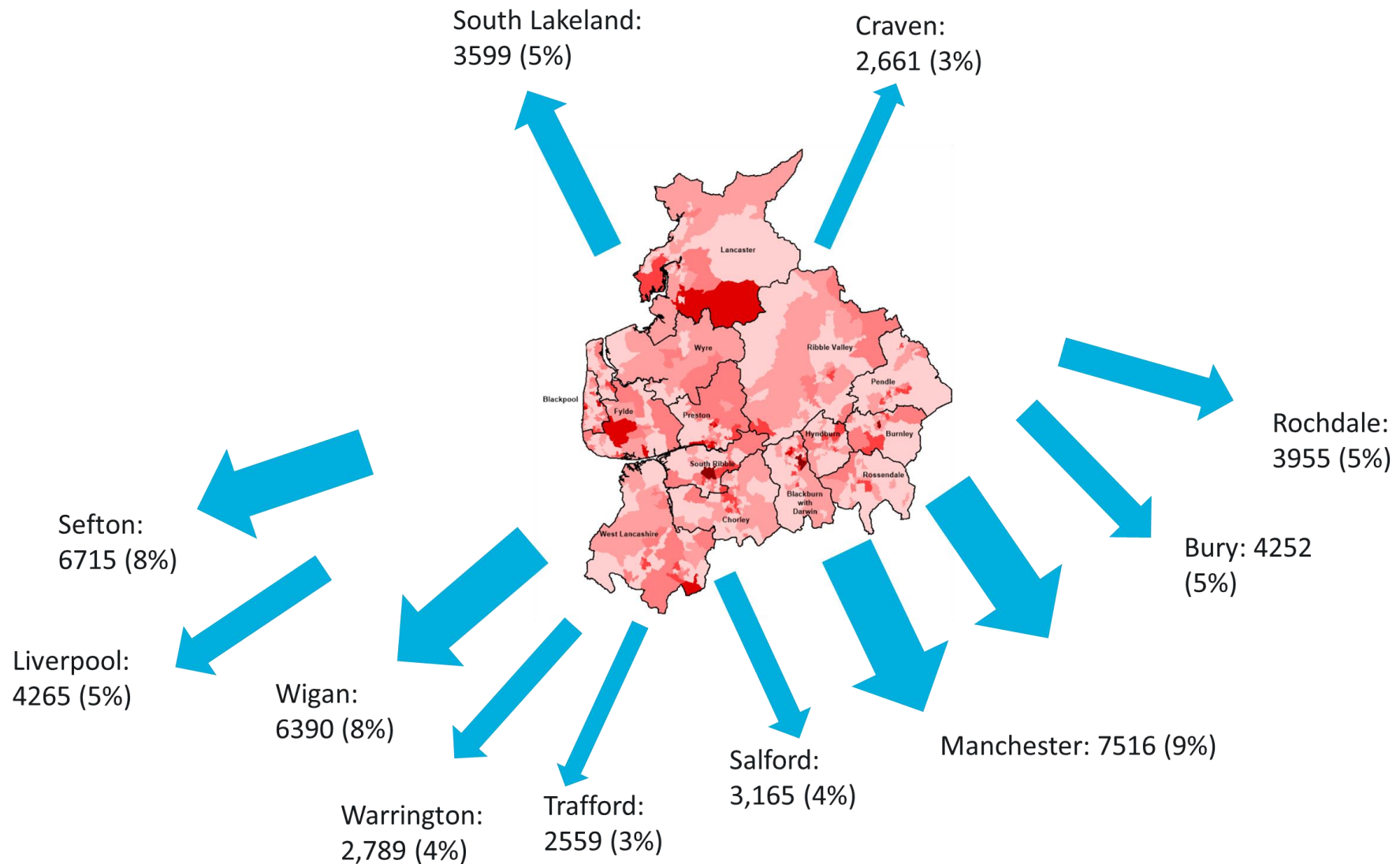
Where to residents work?



Source: Lancashire LEP, The Lancashire Labour Market Intelligence Report, 2018

Travel to work – Worker outflows

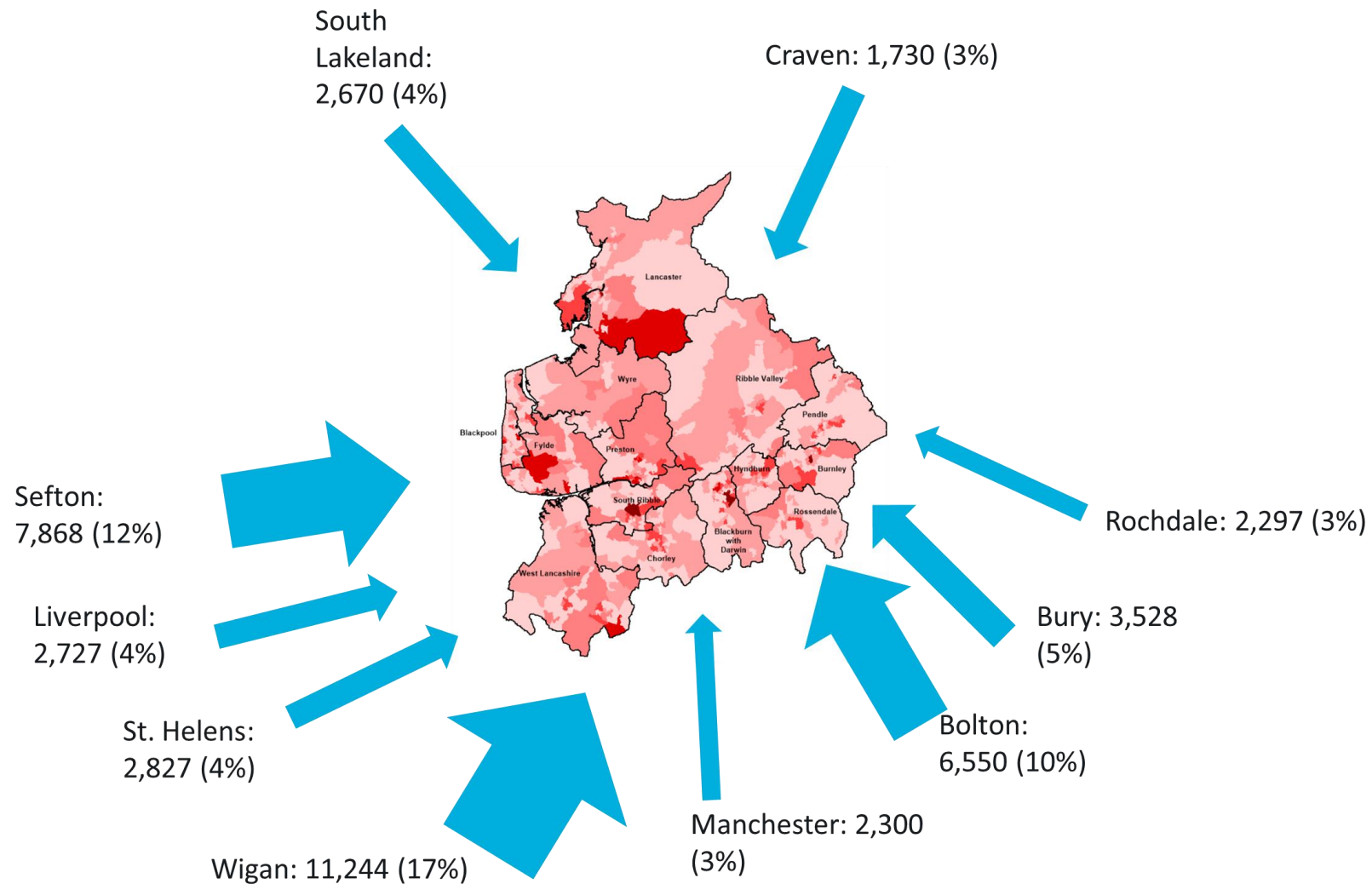
- Of the 79,462 residents who commute to work outside of Lancashire they are dispersed across the following areas:



Source: Census, 2011

Travel to work – Worker inflows

- Of the 66,500 people who work outside of Lancashire but live outside of the county the largest proportion of workers live in Sefton or Wigan.



Source: Census, 2011

Travel to Work – Intra-county flows

Place of Residence

Place of Work

	Blackburn with Darwen	Blackpool	Burnley	Chorley	Fylde	Hyndburn	Lancaster	Pendle	Preston	Ribble Valley	Rossendale	South Ribble	West Lancashire	Wyre
Blackburn with Darwen	31,801	193	2,103	1,328	218	6,278	242	1,249	942	3,126	1,155	1,276	161	230
Blackpool	222	32,638	38	308	5,167	81	500	29	1,096	206	25	552	98	10,119
Burnley	1,331	24	17,395	190	32	2,149	47	5,159	172	1,173	1,588	222	53	47
Chorley	739	176	103	17,280	235	275	173	101	1,374	249	103	4,071	942	226
Fylde	367	7,312	57	818	15,100	123	536	73	3,320	358	58	2,112	282	3,353
Hyndburn	3,351	60	2,151	338	72	13,194	68	1,226	307	1,433	1,330	381	56	90
Lancaster	131	354	38	213	343	65	39,800	31	542	261	15	250	51	1,452
Pendle	636	35	4,692	113	19	851	29	18,170	96	645	701	114	37	30
Preston	2,315	1,897	468	4,770	2,904	726	1,657	386	34,082	2,155	256	13,492	1,298	2,404
Ribble Valley	1,942	256	1,187	637	412	1,923	275	1,108	1,891	9,896	224	1,298	127	451
Rossendale	648	9	825	116	19	1,337	17	399	57	208	10,863	68	13	17
South Ribble	1,278	504	278	6,537	611	472	457	197	5,186	564	145	17,478	1,177	534
West Lancashire	110	68	25	1,077	42	36	74	25	353	43	34	849	20,637	64
Wyre	139	4,902	32	274	1,310	59	1,040	19	1,299	308	16	404	62	17,703

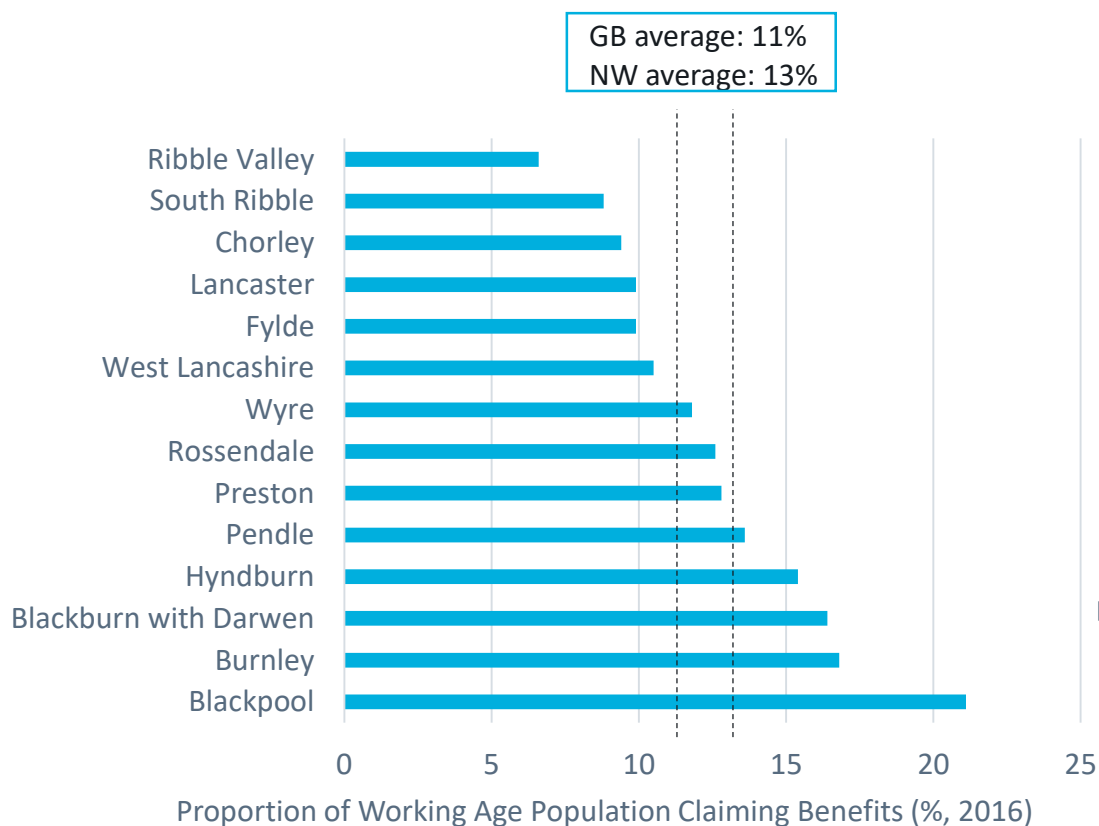
- The table above outlines travel to work flows between Lancashire's districts.
- Highlighted in yellow are places where more than 1,000 people move between local authorities for work.

Source: Census, 2011

Unemployment rates

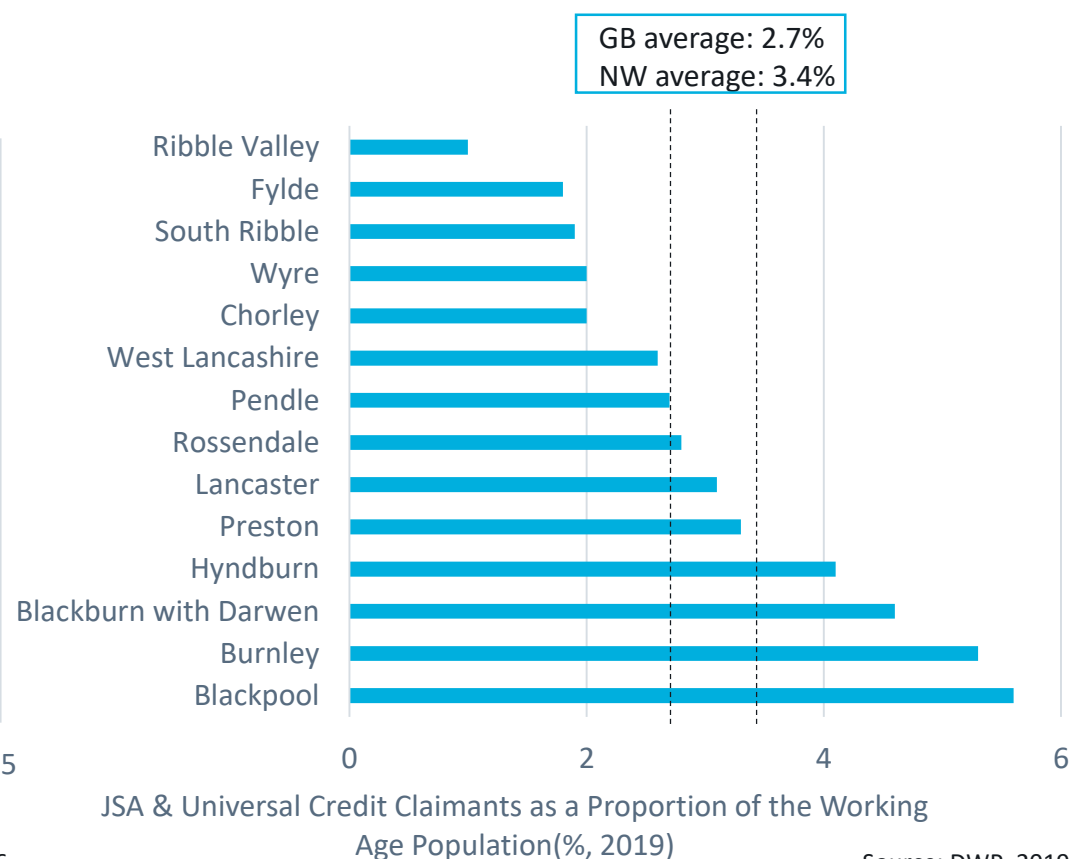
- There is significant variation in unemployment rates between Local Authority Districts in Lancashire – seven achieve rates below the national average, while seven exceed the national average.
- There is also significant variation between districts in the proportion of the population claiming benefits, with Blackpool, Burnley, Blackburn with Darwen, Hyndburn, Pendle, Preston, Rossendale, and Wyre above the national average.

Benefit claimants, 2019



Source: DWP, 2016

Jobseekers, 2019



Source: DWP, 2019

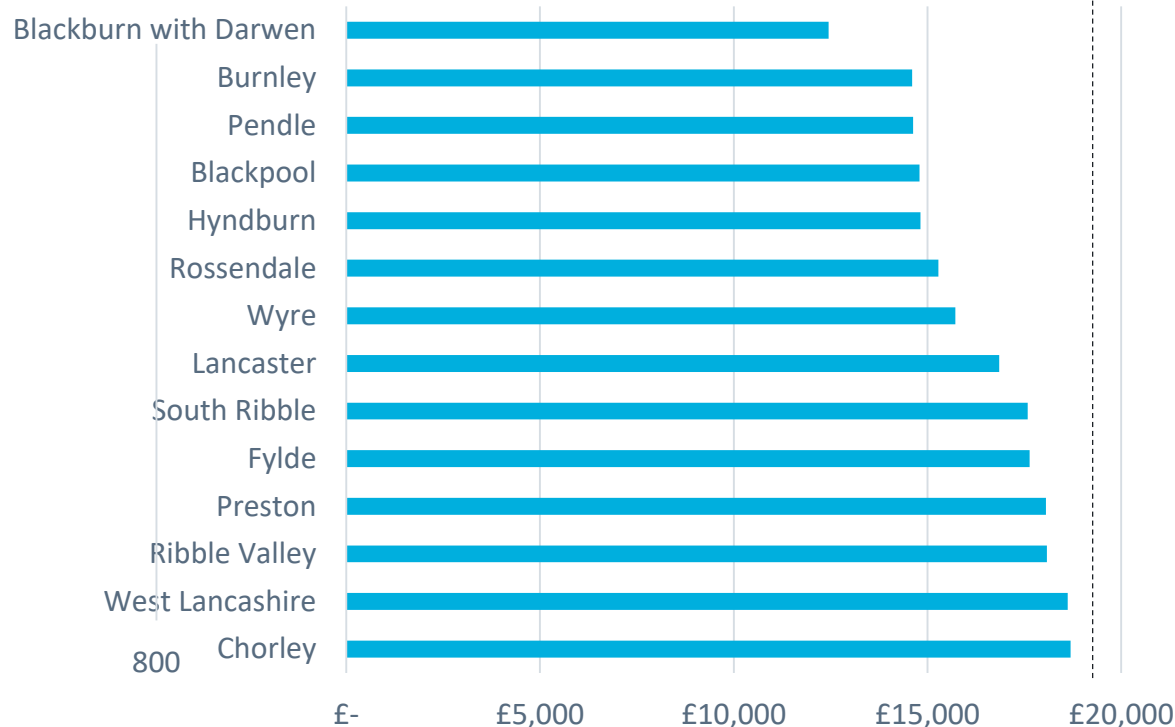
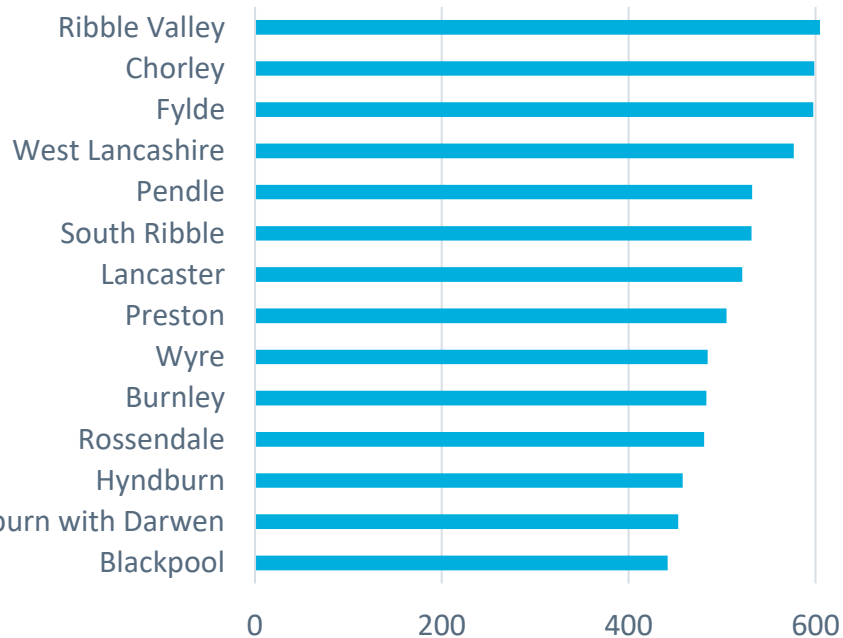
Gross Weekly Pay and Disposable Household Income (GDHI) per person

- Average Gross Weekly Pay in Lancashire lags the UK average of £541 by £61 a week, but Ribble Valley, Chorley, Fylde, and West Lancashire exceed this level, while Pendle, South Ribble, Lancaster, Preston, Wyre, Burnley, Rossendale, Hyndburn, Blackburn with Darwen and Blackpool are below the national average.
- IN terms of personal disposable income, all districts are below the UK average.

Average Gross Weekly Pay (£, 2018)

Gross annual disposable income

UK average: £19.4k



Source: Regional GDHI at current prices, 2016

Deprivation

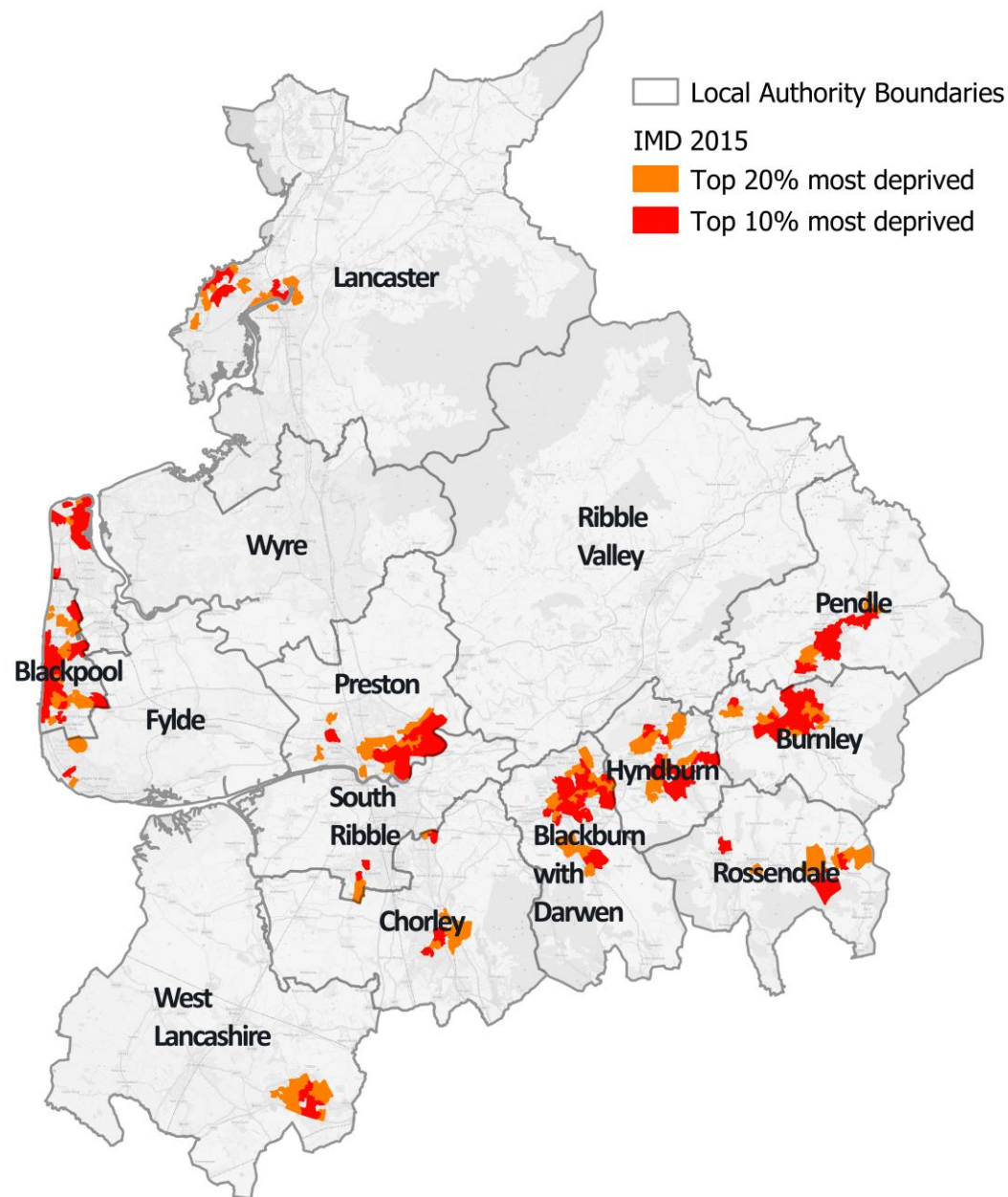
- Lancashire has a mixed pattern of deprivation across its local authorities with some areas of very high and very low deprivation.

Areas of low deprivation

- Ribble valley falls within the top 10% least deprived local authorities in the county.
- Chorley, Fylde and South Ribble fall within the top 50% least deprived local authorities in the country.
- Ribble Valley, Wyre and Fylde see none of the area within the top 20% most deprived.

Areas of high deprivation

- Blackpool, Burnley, Blackburn with Darwen and Hyndburn fall within the top 10% most deprived local authorities in the country.
- Pendle and Preston fall within the top 20% most deprived areas in the country.
- The pattern of deprivation across Lancashire can be seen on the map to the right. There are particular concentrations of deprivation across the Fylde coast and in a strip to the south of the county between Pendle and Blackburn with Darwen.



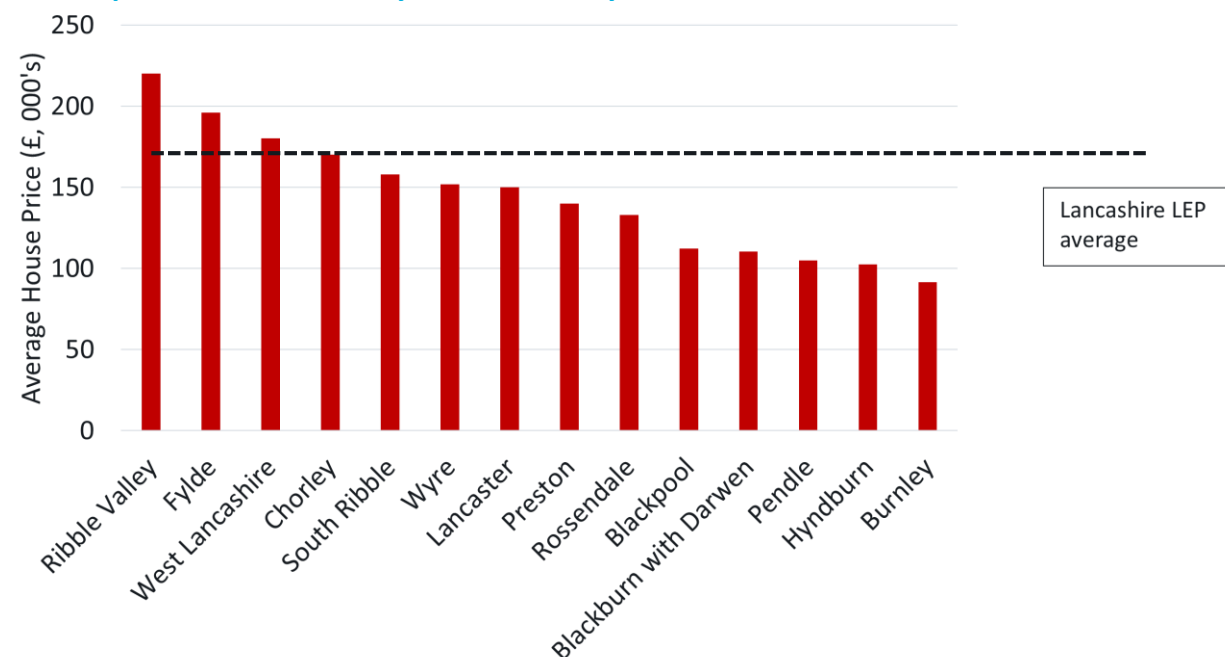
Source: Indices of Multiple Deprivation, MHCLG 2015

Housing affordability

Indicator	Lancashire LEP	North West	England	Source & Date
Average House Price	£143,000	£157,000	£235,000	ONS, House Price Statistics for Small Areas, 2017
Average Salary	£25,800	£26,660	£29,100	ASHE, 2017
Housing Affordability ratio	5.5	5.9	8.1	ASHE & ONS, 2018

- Compared to national and regional housing prices and salaries, Lancashire is relatively affordable.
- However, there is significant variation in house prices (and housing affordability) within the county.

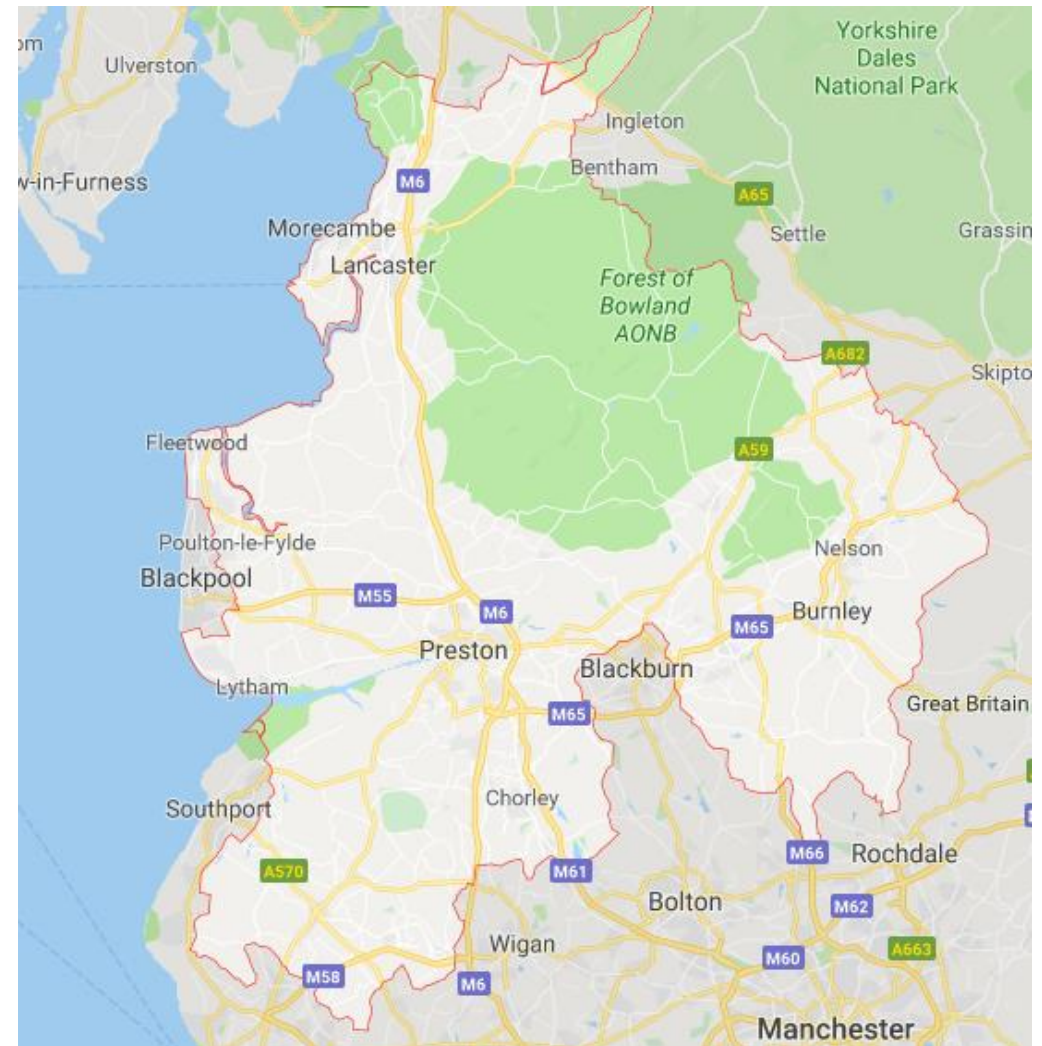
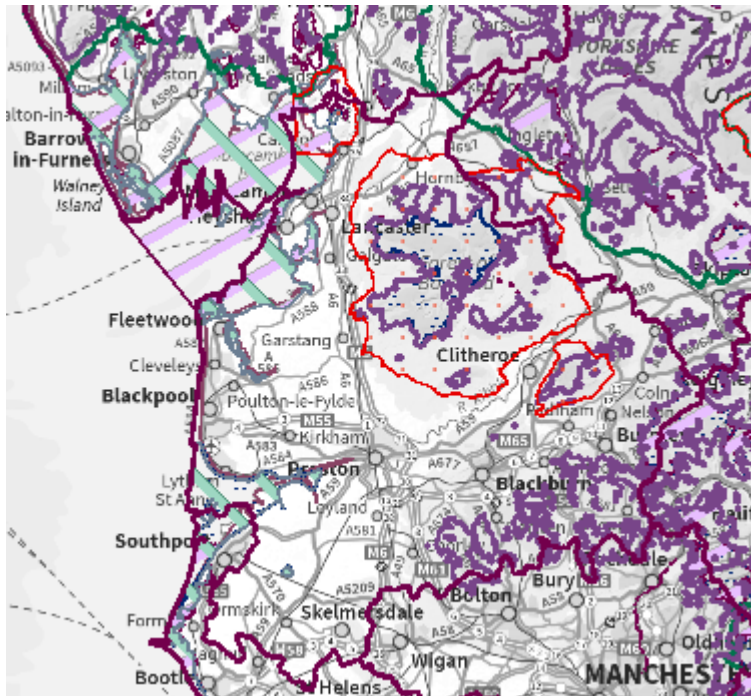
House prices in Lancashire by Local Authority District, 2017



Source: ONS, House Price Statistics for Small Areas, 2017

Quality of life - Natural capital

- Lancashire has significant natural capital. This includes:
- Protected landscapes – e.g. Forest of Bowland AONB (red boundary on map below and opposite);
- Significant areas of Moorland (purple boundary on map below); and
- RAMSAR sites – which are protected wetland areas (green lines on map below).



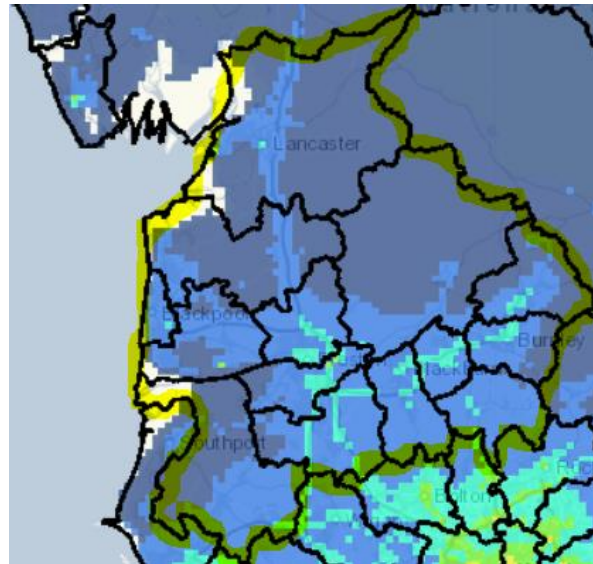
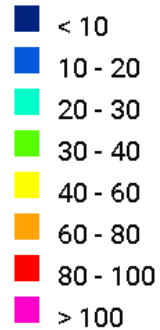
Source: Google Maps, 2019 & Natural England Interactive Map, Accessed 2019

Quality of life - Pollution levels

Air Quality

Nitrogen Oxides background concentration

Annual mean ($\mu\text{g m}^{-3}$ as NO_2)

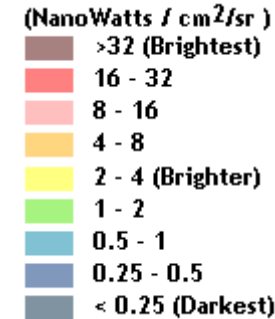


Source: UK Ambient Air Quality Interactive Map, Defra 2017

- The UK's Air Quality Strategy states that nitrogen oxides background concentrations should not exceed an annual average of $40 \mu\text{g m}^{-3}$.
- By this measure, Lancashire on the whole does not suffer from air quality issues, particularly in its rural areas.
- However, there are some small areas with high pollution – most notably Preston town centre, where Air Quality thresholds are being breached.

Light pollution

Night light levels



Source: Natural England, 2016

- Lancashire has a few areas of genuine dark skies concentrated around the Forest of Bowland AONB.
- The southern part of the county has the highest levels of night-time light pollution.

Quality of life – Creative and cultural activity

- There is a considerable amount of investment in creative and cultural activity across Lancashire, including from Arts Council England.
- There are nine National Portfolio Organisations, across a range of disciplines, receiving ongoing support from the Arts Council.
- In addition to professionally led cultural activities, funding through the public sector there is ongoing development of cultural activity across Lancashire's third and private sectors.
- However, stakeholders have highlighted the lack of a healthy night-time economy and a strong cultural offer as a barrier to attracting and retaining talent and investment.

Arts Council National Portfolio awards 2018-2022

Applicant Name	Local Authority	Discipline	TOTAL Portfolio grant 18/22 - £	
Burnley Youth Theatre	Burnley	Theatre	£	253,460
Curious Minds	Preston	n/a	£	5,341,292
In-Situ	Pendle	Visual arts	£	556,000
Lancaster Arts at Lancaster University	Lancaster	Combined arts	£	412,212
Littleworld Ltd t/a Horse and Bamboo Theatre	Rossendale	Theatre	£	494,528
Ludus Dance	Lancaster	Dance	£	382,576
More Music	Lancaster	Music	£	422,436
Preston City Council	Preston	Museums	£	900,000
The Dukes Playhouse Ltd	Lancaster	Theatre	£	1,024,760

Source: Arts Council, 2018

Visitor economy

Contribution to Lancashire's economy

- Lancashire's visitor economy draws 63 million visitors a year with a diverse offer including both natural heritage and culture assets.
- At present the sector contributes: 56,000 jobs and £3.7 bn GVA.
- This represents 7% of the county's GVA.
- The sector has seen strong growth of 15.5% since 2011 and plans for ambitious continued growth are in place.
- There are targets to increase: visitor numbers, visitor spend, overnight stays and the number of additional jobs supported by the sector.
- Sector growth targets outlined in Lancashire's Visitor Economy Strategy (2016-2020 can be see in the red diagram to the right).



Source: Lancashire Visitor Economy Strategy 2016-2020

Agriculture

Contribution to Lancashire's economy

- Approximately 10,000 people across Lancashire's work in the farming sector. This accounts for c. 3.4% of England's workforce highlighting the importance of the sector for the county.
- The fishing industry, focused around Fleetwood, is now fairly modest. However, relying on supplies arriving by road or port, fish processing remains an important local industry.
- Blackpool, Fylde and Wyre are important areas for pig farming. Combined they account for 57.3% of all British pigs.
- Farming in Lancashire is focused on fruit and vegetable production due to it's top grade farming land. Fruit and vegetable production account for 94% of in-use farming land in Lancashire compared to 64% across the north west as a whole.

Local Authority breakdown of agricultural land

Local Authority ⁽³⁾	Number of holdings 2016	Hectares		
		Total farmed area		
		2013	2016	% difference 2016/2013
BLACKBURN WITH DARWEN	112	5 654	5 775	2
BLACKPOOL & FYLDE	174	11 183	10 961	- 2
BURNLEY	87	6 124	8 750	43
CHORLEY	253	13 859	13 710	- 1
HYNDBURN	108	4 160	3 862	- 7
LANCASTER	536	45 204	45 819	1
PENDLE	254	10 858	11 680	8
PRESTON	198	8 814	8 616	- 2
RIBBLE VALLEY	653	48 579	48 464	0
ROSSENDALE	197	8 675	9 548	10
SOUTH RIBBLE	170	6 941	7 925	14
WEST LANCASHIRE	411	23 207	24 004	3
WYRE	397	22 889	21 377	- 7

Source: Defra, 'Structure of the agricultural industry in England and the UK at June', 2013-16

Source:

Town centres and high streets

NB: Additional evidence required.

