

West Yorkshire Economic Assessment

March 2020

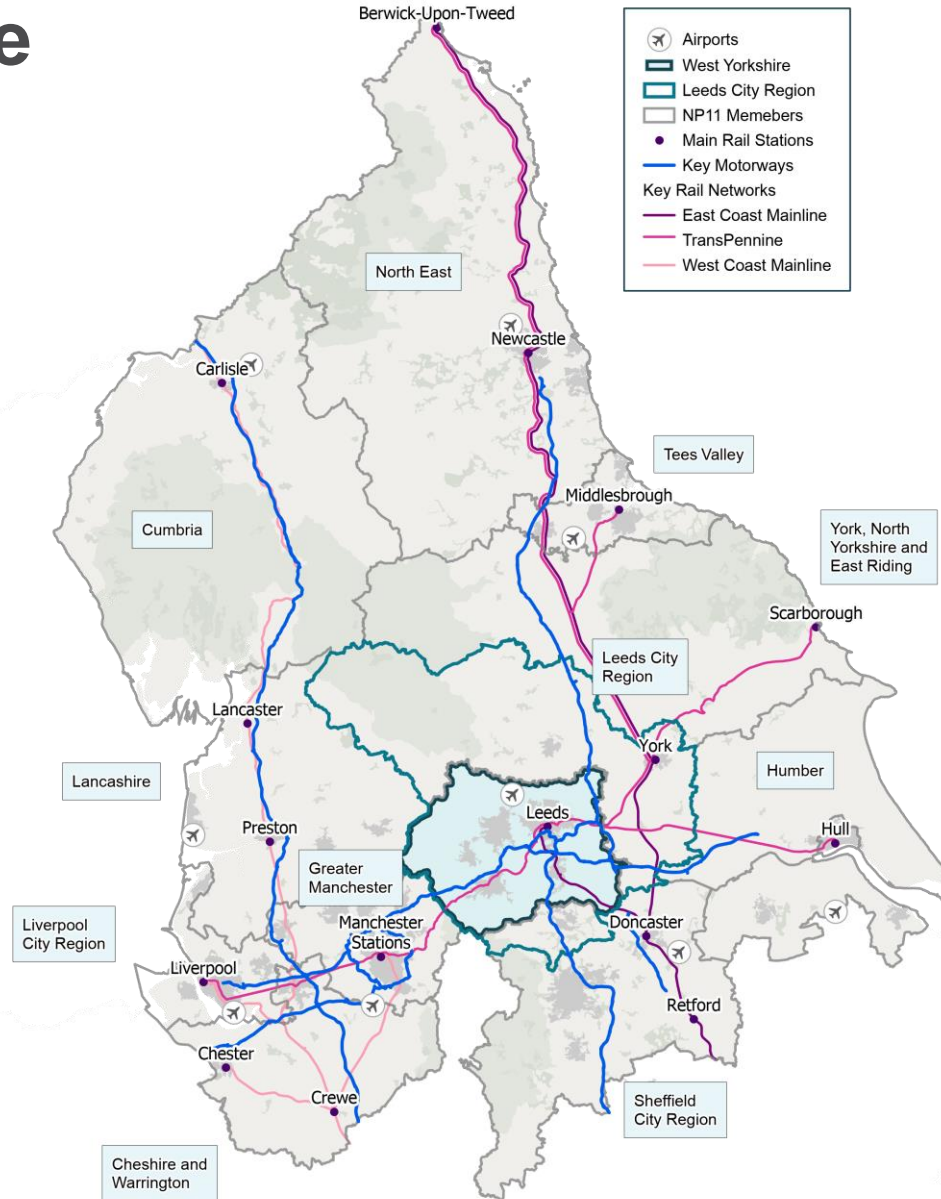
Introduction

- Local industrial strategies are long-term, evidence based-plans aligned to the national Industrial Strategy. They will strengthen local economic growth and reduce disparities by boosting productivity, earning power and competitiveness by focusing on distinct local strengths and opportunities.
- This Economic Assessment provides a broad analysis of available data to understand the economy and economic geography of West Yorkshire. It primarily draws on analysis of published data from the Office for National Statistics and other official sources to provide an understanding of economic performance on a range of indicators. It is structured around the five foundations of the national Industrial Strategy.
 - Business environment
 - Ideas
 - Infrastructure
 - People
 - Place

National and international context

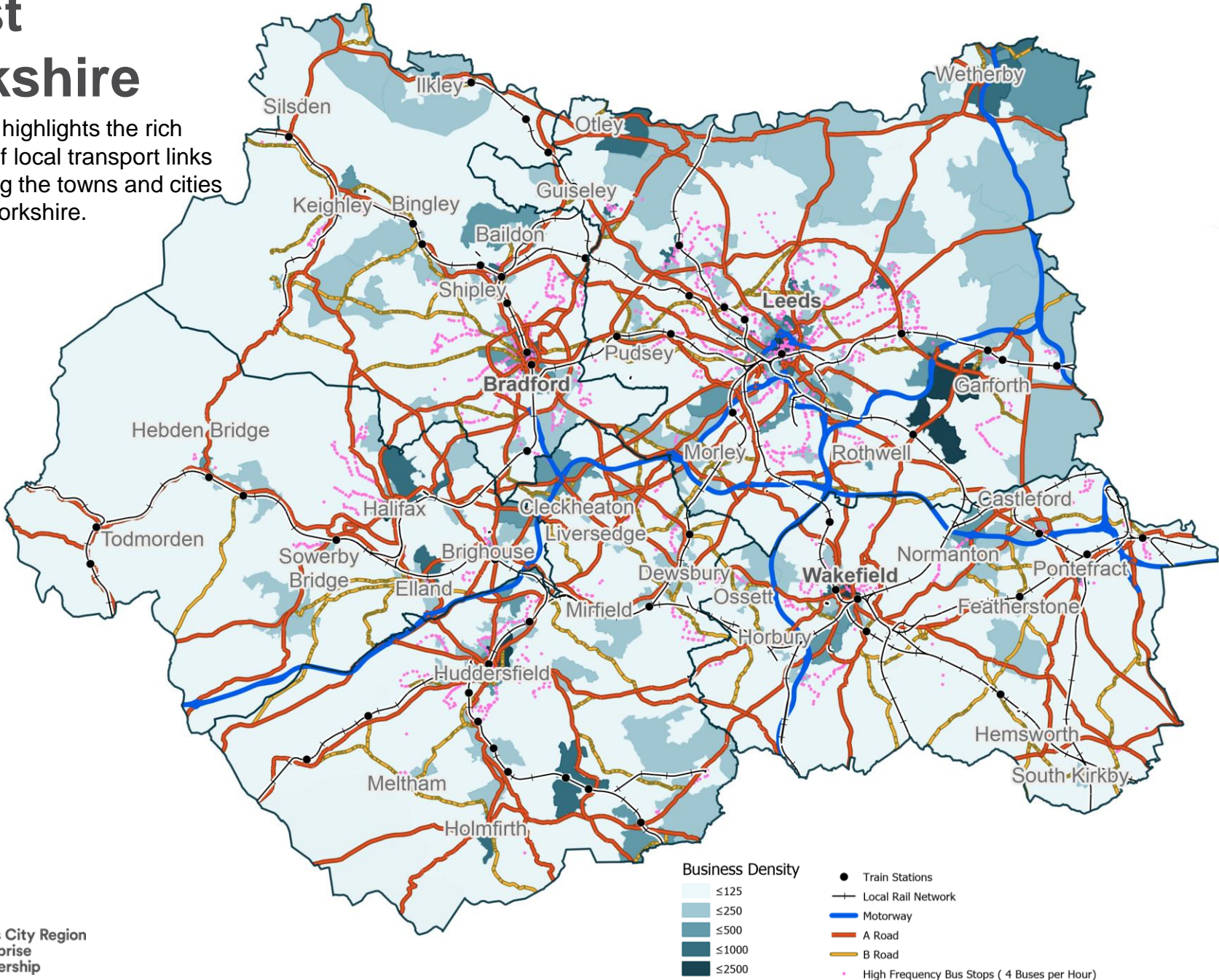
The Northern Powerhouse

West Yorkshire, part of the wider City Region is located at the heart of Northern Powerhouse (NP11). It is home to 2.3 million people and is well served by East-West and North-South road and rail links.



West Yorkshire

This map highlights the rich network of local transport links connecting the towns and cities of West Yorkshire.



About our area

- £55.4 billion economy – bigger than 9 EU countries
- 2.3 million people
- 1.1 million workforce
- 90,000 businesses

- 7 universities, 91,000 students and 30,000 graduates
- UK's largest regional finance centre
- More manufacturing jobs than anywhere in the north

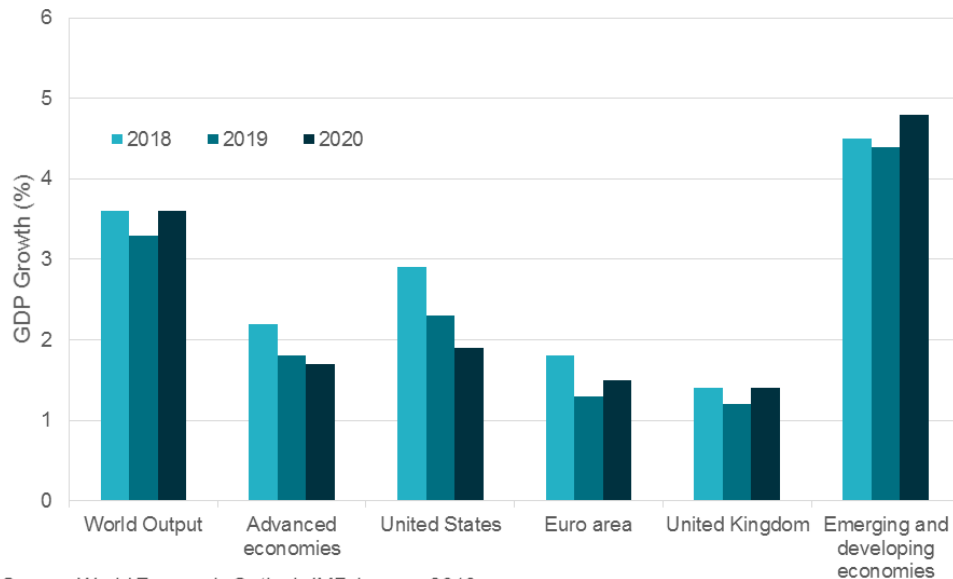
- At the centre of the UK, within one hour's drive of 7 million people.
- 1.6% of the land area of England, and 4,600 hectares of national parks.



A global economy still affected by the crash

The economic context in which the UK and its constituent parts are operating has shifted in recent years. Internationally, in headline terms developed nations have seen something of a recovery from the financial crash of 2008.

Global growth - actual and forecast, 2017-20

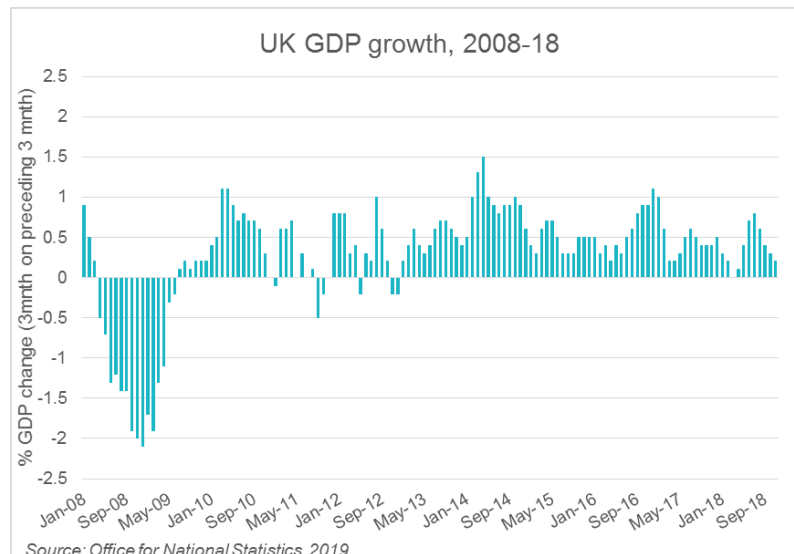


Source: World Economic Outlook, IMF January 2019

The US and UK have in particular have seen strong employment growth, and whilst the European recovery has been slower to take hold, Eurozone economies have strengthened to varying extents.

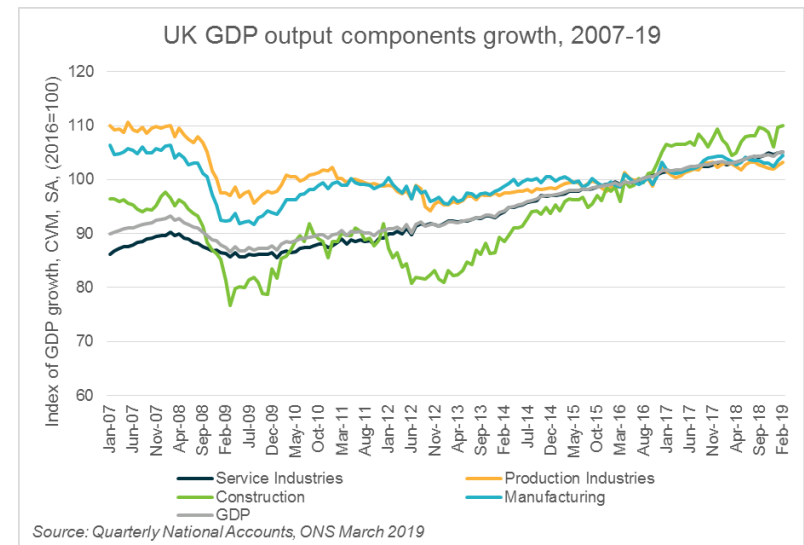
However, the effects of the 2008 crash still linger, with interest rates at historically low levels in Europe, and monetary policy still affected by stimulus packages that were unprecedented little over a decade ago.

The UK economy has maintained some momentum despite uncertainty

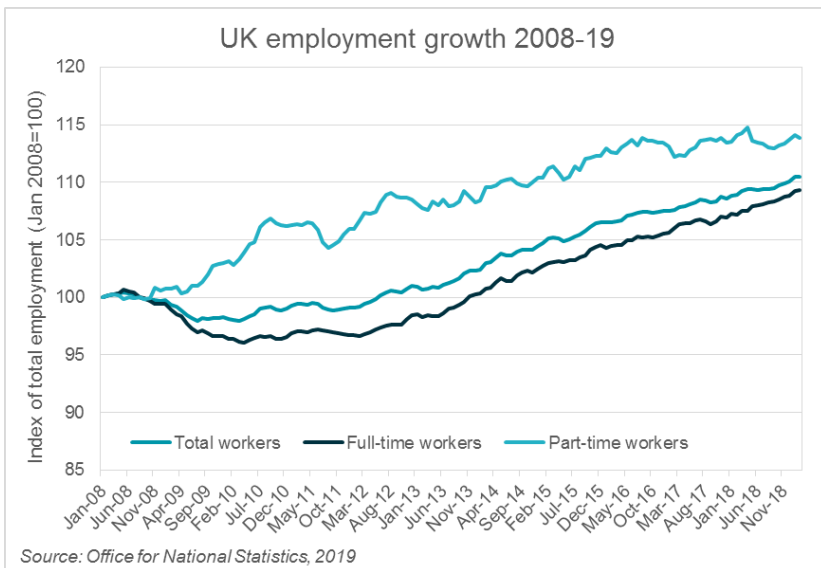


In the UK, Brexit is central to political and economic debate, but on many indicators the UK economy has performed better than many expected since the referendum in 2016.

Whilst GDP growth has slowed since 2016, the economy has maintained a degree of momentum. This has however been driven by the service sector, whilst manufacturing output remains below its pre-recession peak.



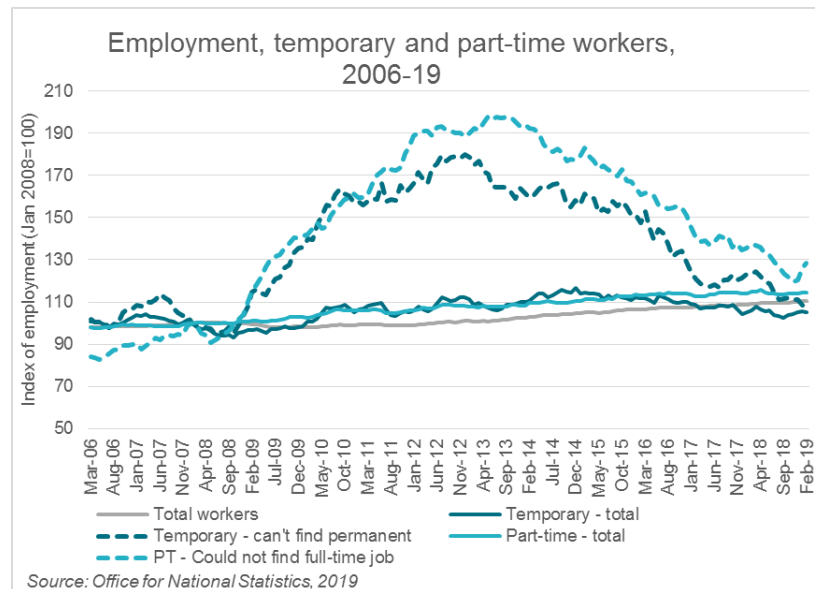
Employment at record highs, though persistent issues around security



Employment in the UK has reached record levels, with the unemployment rate also below 4% for the first time since records began.

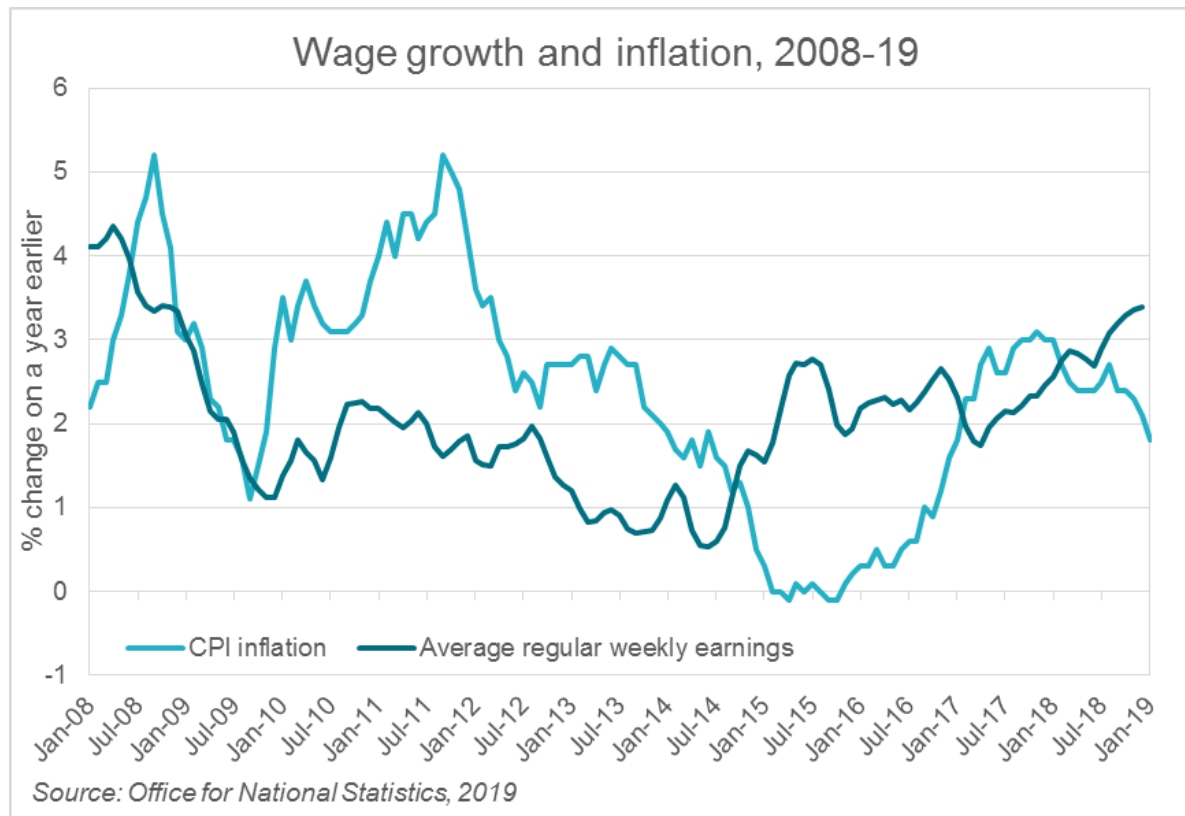
Since 2008 however, the UK has seen an increase in part time work, compared to full-time employment. More recently, full-time employment growth has been stronger, beginning to offset this pattern.

In the years immediately after the recession, the nation also experienced an increase in temporary employment. The number of people in either temporary or part-time work increased markedly and remained elevated until relatively recently as the degree of slack in the labour market has lessened. This has led to debate about job security and underemployment.



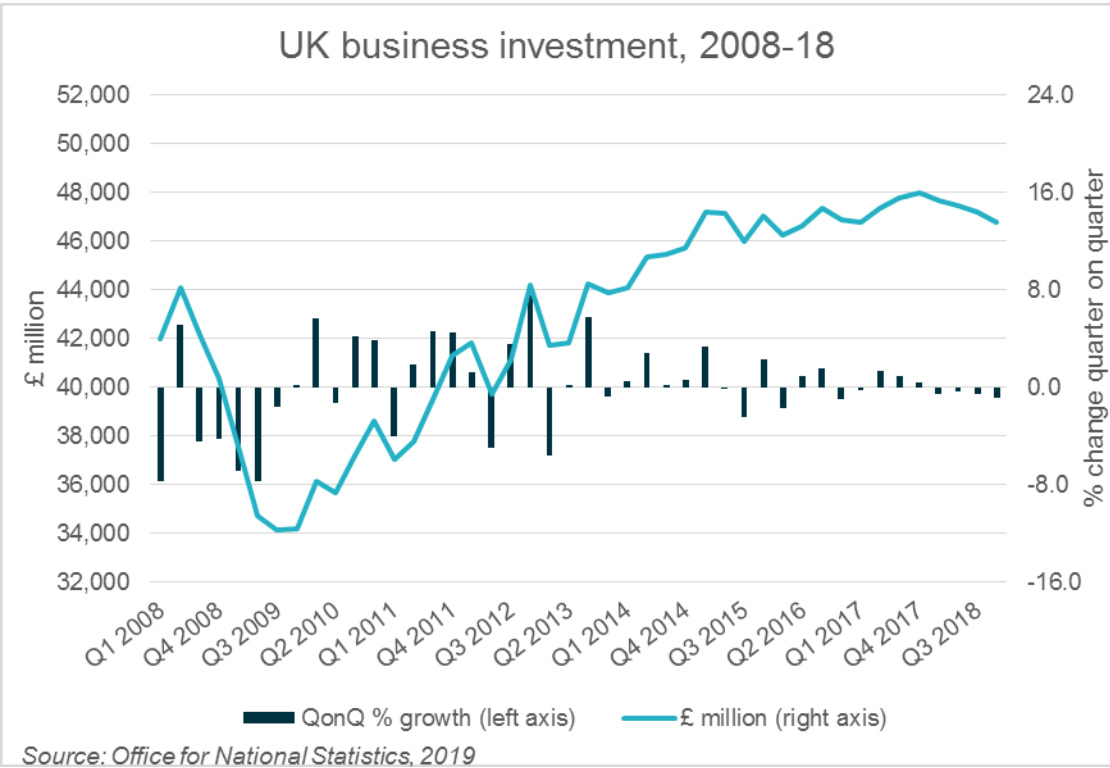
Real wage growth has been subdued since the recession

In light of elevated levels of underemployment, wage growth remained low throughout the post-crash recovery period. With inflation also elevated, wages fell in real terms between 2010 and 2015, and after some respite fell again as inflation spiked post-EU referendum. Only in the past year have wages begun to rise again in real terms.



Business investment has slowed gradually since 2017

Business investment also declined during the economic downturn and took time to recover, not returning to its pre-recession peak until 2013. Growth since then has been relatively subdued, and 2018 saw four consecutive quarters of negative growth.

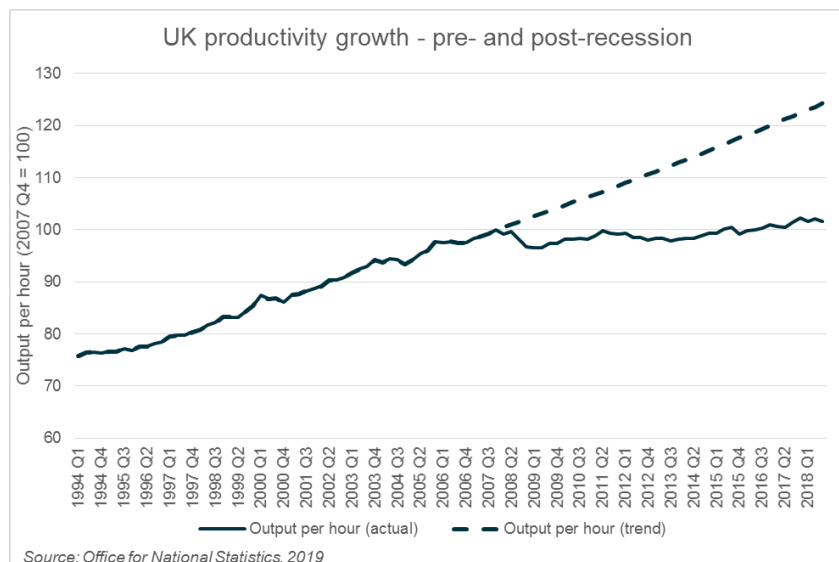


Productivity puzzle – stagnating national productivity growth

UK productivity growth has also not recovered from the onset of the economic crisis in 2008 in the manner seen in other recessions. Although productivity is now increasing, growth remains substantially below pre-recession trend, and whilst other advanced economies have experienced similarly low productivity growth since the recession, the problem is more acute in the UK.

This has been termed the “productivity puzzle”. The factors outlined above are likely to contribute to this, and addressing this issue is central to the national, and therefore our local, industrial strategy.

The issues affecting productivity, and local performance against these, are explored in the rest of this document.

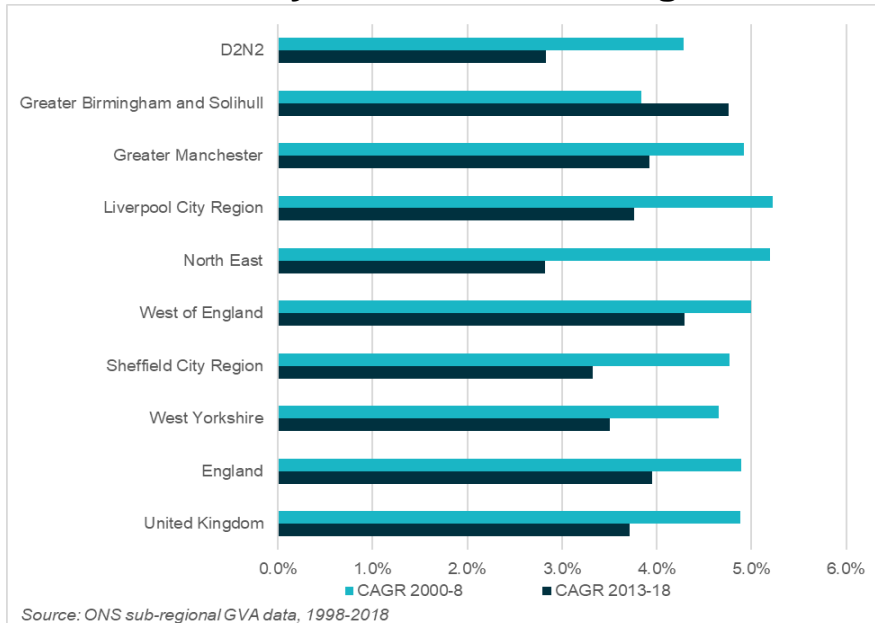


Business environment

Economy and Productivity

West Yorkshire is an internationally significant economy

Chart: Core city LEPs – total GVA growth

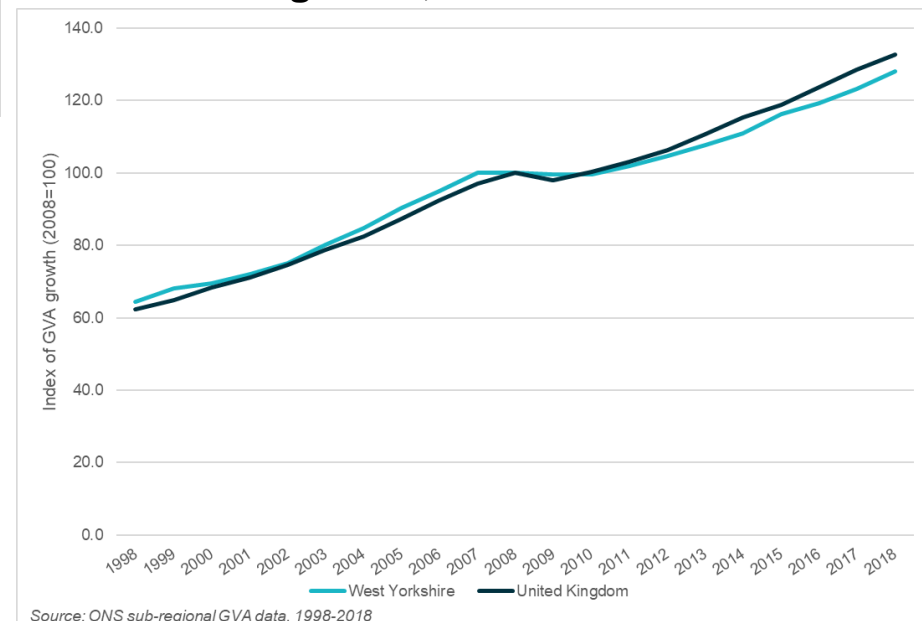


However, since the recession of 2008, growth has almost kept pace but consistently tracked at slightly lower than the UK average. Increasing by an average of 3.5% per year in West Yorkshire, compared to 3.7% for the UK.

West Yorkshire had economic output (GVA, or gross value added) of £55.4bn in 2018, making it a larger economy than nine EU nations.

Like most of its comparator areas, West Yorkshire has seen growth remain lower in the years since the crash of 2008 than in the years preceding it.

Chart: GVA growth, West Yorkshire & UK



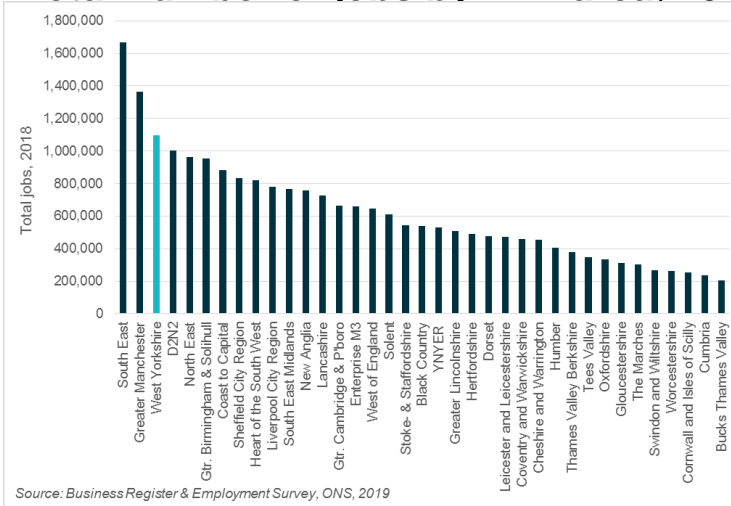
District GVA and growth, 2000-18

Within the area, GVA growth was above national levels in Leeds and growth across West Yorkshire as a whole was only marginally below the national average. At West Yorkshire level, this small gap has persisted in recent years, though there are substantial variations at local authority level. For both West Yorkshire and the UK, annual growth remains 1.2 percentage points down on the years leading up to the recession.

Area	GVA (£m), 2018	Compound annual growth rate, 2000-8	Compound annual growth rate, 2009-18	Share of West Yorkshire GVA
Bradford	£ 9,482	4.4%	2.1%	17.1%
Calderdale	£ 4,721	4.6%	4.7%	8.5%
Kirklees	£ 7,495	3.7%	3.6%	13.5%
Leeds	£ 26,239	5.3%	3.9%	47.4%
Wakefield	£ 7,416	3.7%	3.2%	13.4%
West Yorkshire	£ 55,351	4.7%	3.5%	-
England	£ 1,643,271	4.9%	4.0%	-
United Kingdom	£ 1,908,608	4.9%	3.7%	-

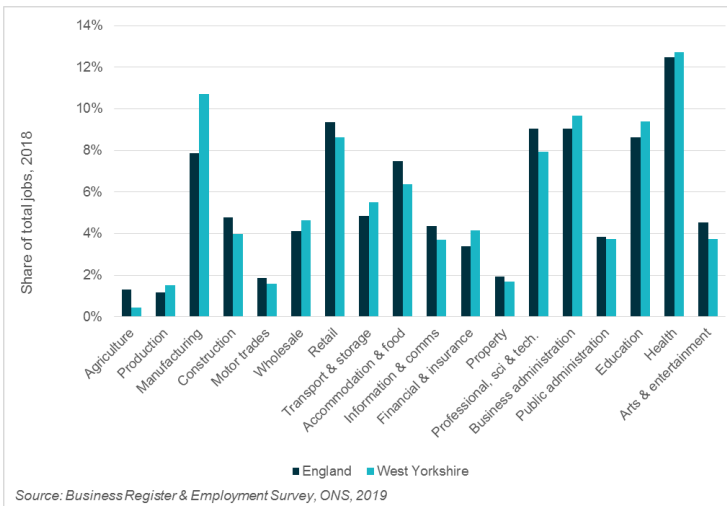
A diverse mix of sectors, with a broad range of strengths

Total number of jobs by LEP area, 2018



With over 1 million jobs, West Yorkshire is the second largest LEP by employment outside of the South East. Its diverse economic structure closely resembles that of the UK.

Share of jobs by broad sector, 2018

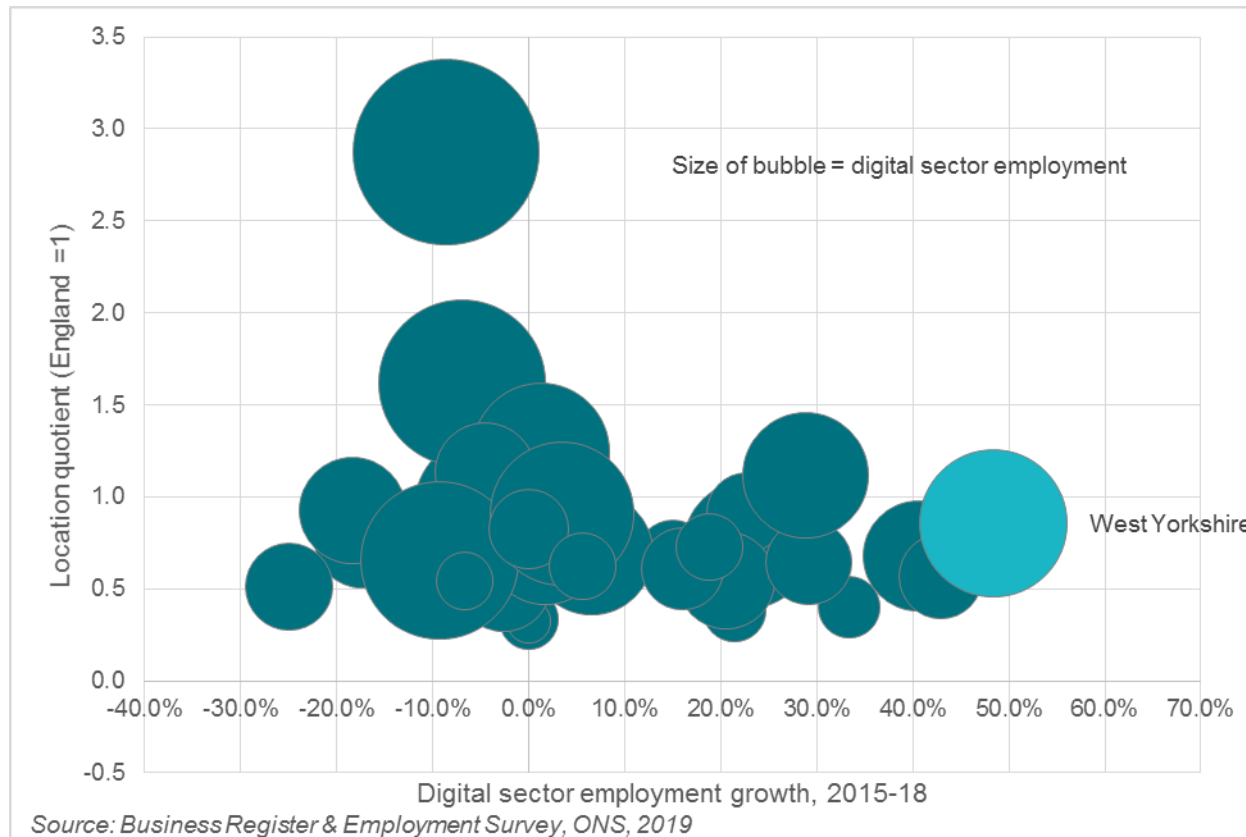


Our sector strengths are explored in more detail in the “Business, employment and sectors” section, but in headline terms, with 140,000 workers, the health sector employs more people than any other sector in West Yorkshire. Health directly accounts for 12.7% of jobs, compared to 12.5% across England as a whole. West Yorkshire also has more manufacturing jobs than anywhere else in the north, and is the country’s leading regional financial centre outside London.

West Yorkshire is home to the UK's fastest growing digital sector

Employment in the digital sector in West Yorkshire has increased by 48%, faster than any other LEP area and six times the rate of growth seen in London since 2015 (8%). Although digital employment outside London is relatively dispersed, the 46,000 jobs in the sector is the 2nd highest in the North.

Chart: Digital sector employment by LEP area (exc. London)



Manufacturing is the key source of output in West Yorkshire

Manufacturing accounts for more output (GVA) in West Yorkshire than any other sector – 12.4% compared to 9.9% nationally. Other sectors where the local share of GVA exceeds the national share include financial services, health, education and wholesale and retail.

In terms of growth, scientific R&D and information services have both seen output more than double between 2013 and 2018 though both remain small in absolute terms with output around £60m per year. However, the region has a number of billion industries where growth has exceeded 60% in diverse industries – computer programming, social care and motor trades.

Chart: GVA by sector – West Yorks & UK, 2018

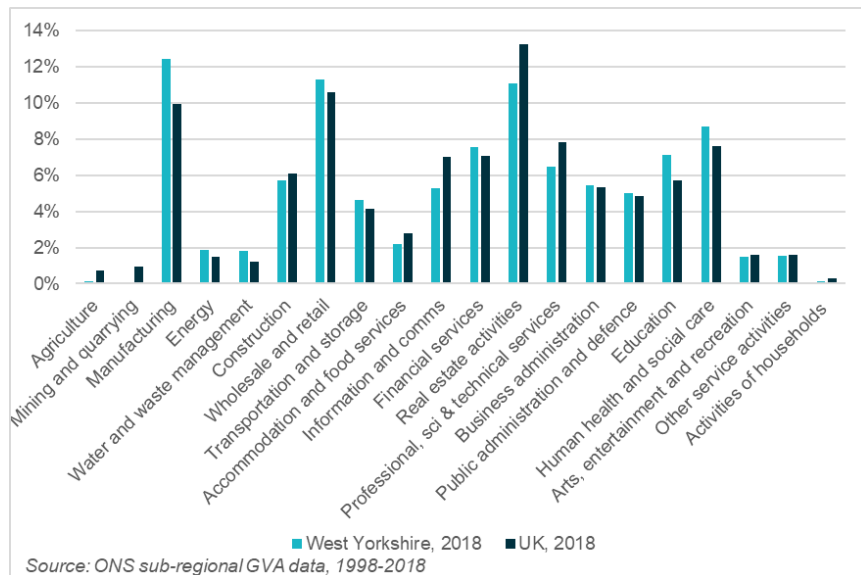
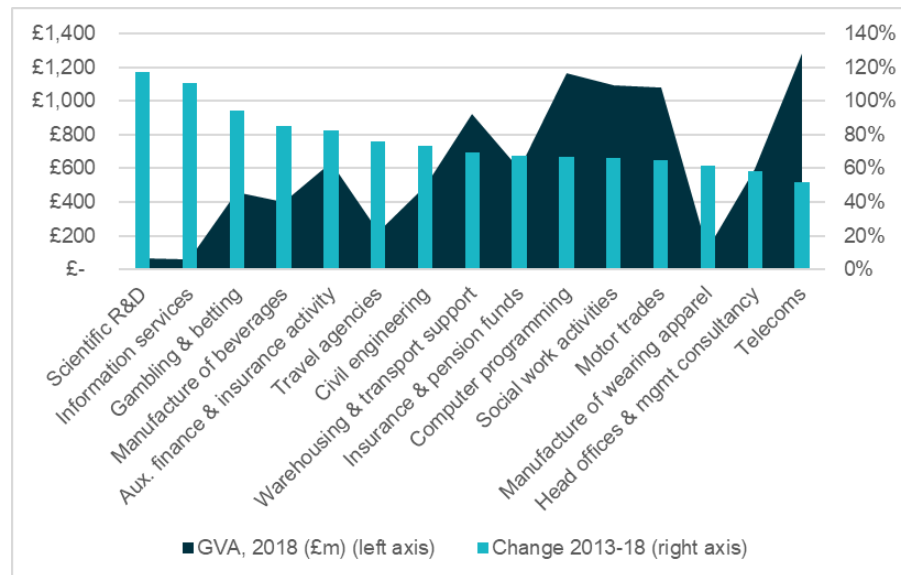


Chart: Top 15 industries for GVA growth, 2015-18

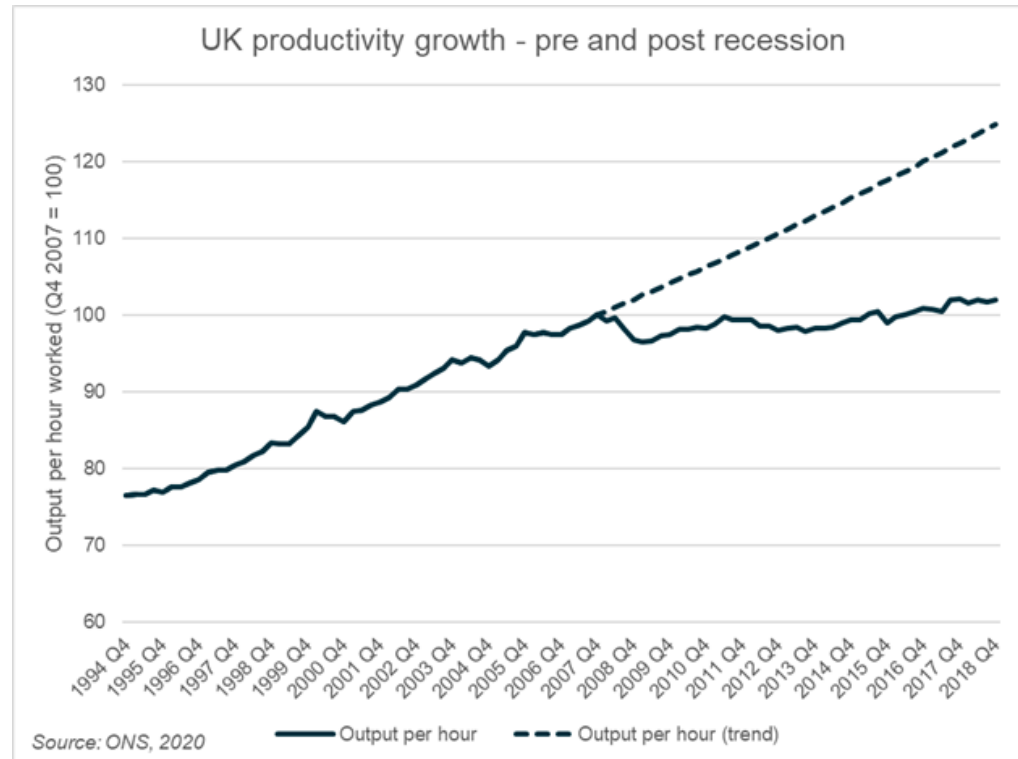


Productivity – why is it important?

- Productivity generally refers to how efficiently inputs (labour and capital) are used to produce outputs (goods and services). It is directly linked to living standards – increasing productivity increases firms’ ability to increase wages. Therefore, at the national level a country’s ability to improve its standard of living over time is almost entirely dependent on productivity growth.
- Productivity is also crucial in determining long-term growth rates of an economy. In other words, stronger productivity growth leads to stronger Gross Domestic Product (GDP) growth. This, in turn, increases tax revenues and lowers government budget deficits.
- ONS note that “economic output can only be increased by either increasing the amount of inputs or by raising productivity. Furthermore, changes in labour productivity are also related to changes in real wages. Increasing productivity is, therefore, an important aim for both national and local economies.”
- Improving productivity is central to the HM Government’s Industrial Strategy, and the five foundations of the strategy are all focused on improving productivity performance.
- This section deals with understanding productivity performance, with the rest of the document providing detail on the drivers of productivity.

Productivity puzzle – stagnating national productivity growth

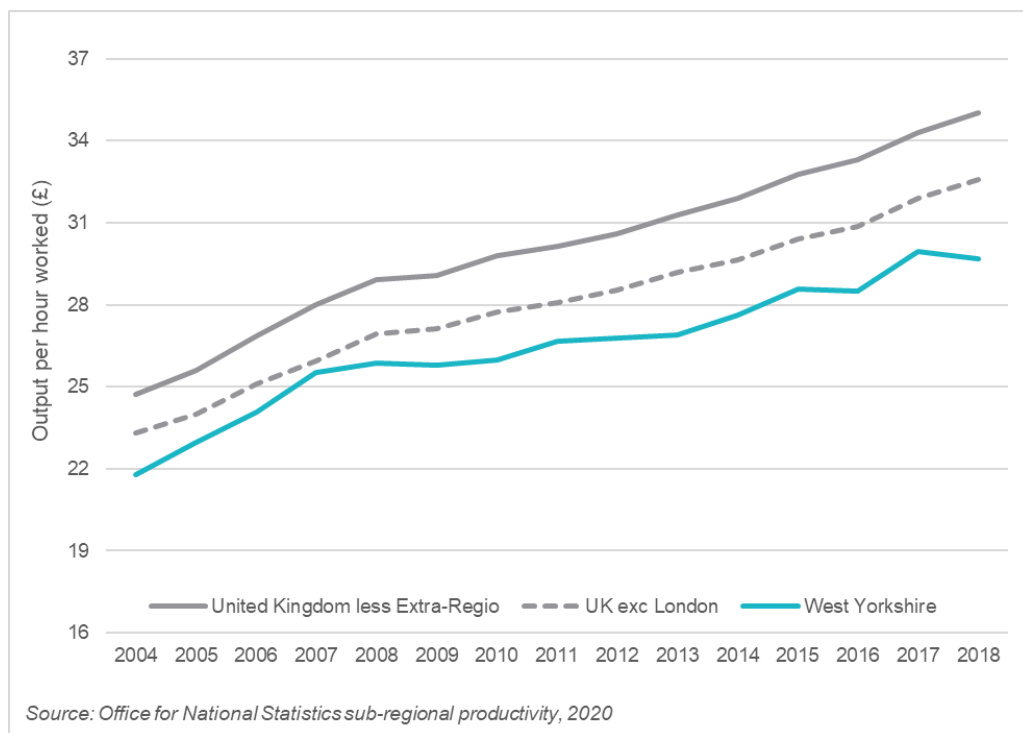
UK productivity growth has not recovered from the onset of the economic crisis in 2008. Whilst some disruption to growth during a recession is expected, the length of this downturn is unusual and has been termed the “productivity puzzle”. Although productivity is now increasing, growth remains substantially below pre-recession trend. As of the end of 2018, output per hour worked was only 2% higher in real terms than it was at the end of 2007. Had productivity continued on its pre-recession trend, it would have been 25% above 2007 levels.



Productivity has lagged UK levels locally since 2004

Whilst UK productivity growth has been below trend since the recession, local productivity has persistently lagged behind UK levels. In 2008, output per hour in West Yorkshire was, around 89.4% of UK output. Since the downturn of 2008 this gap widened further, and has averaged around 86.3% of UK levels since 2013. As of 2018, output per hour in West Yorkshire stood at £29.68 per hour, 84.7% of UK levels.

Chart: Productivity in the UK and West Yorkshire, 2004-18

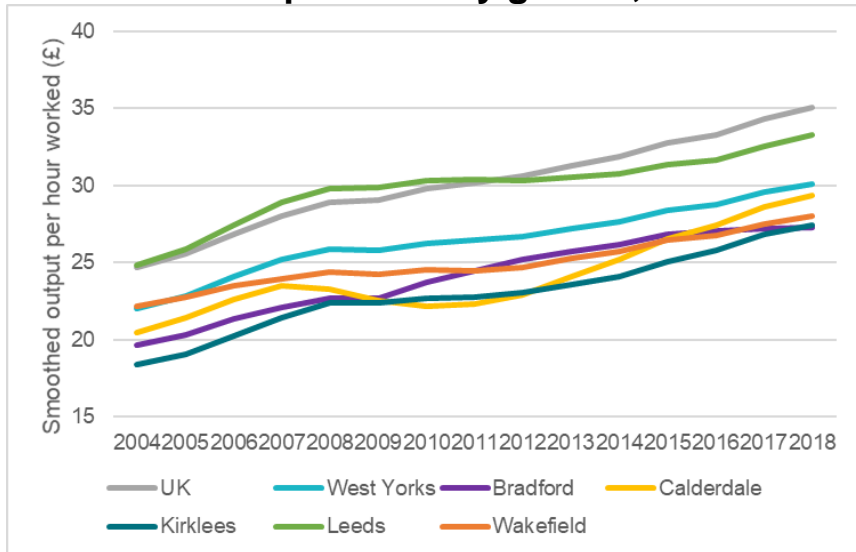


The fact that London is significantly more productive than the rest of the country skews UK data slightly. Despite this, West Yorkshire productivity is still 8.9% less productive than the rest of the UK, excluding London.

If productivity in West Yorkshire matched UK levels the economy would be £10bn larger.

Mixed productivity growth across the area

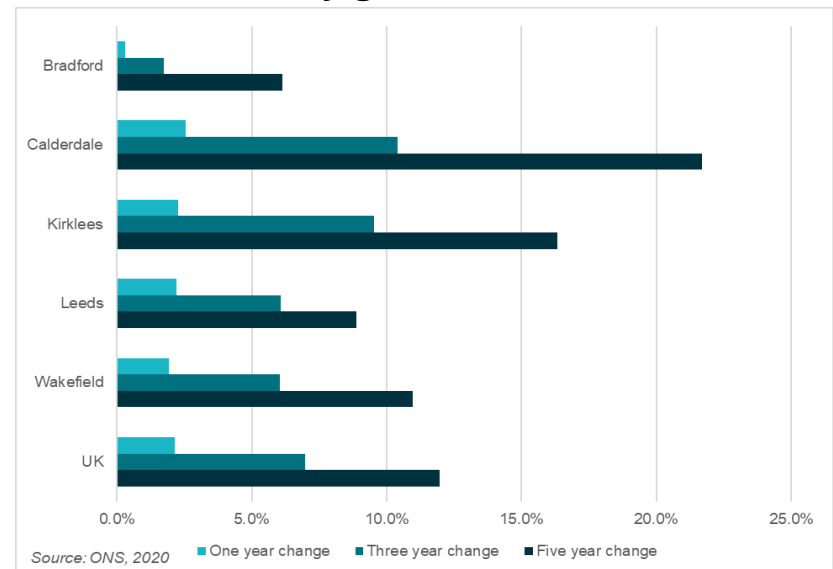
Chart: District productivity growth, 2004-18



As with total GVA, weaker productivity growth locally is more pronounced during the recession and immediately after. Between 2008-13, productivity increased by 5.1% in West Yorkshire, compared to 8.2% nationally. However, since then the gap has been somewhat less pronounced, with productivity increasing by 10.8% locally and 12% nationally between 2013-18.

Whilst change over the most recent year has been relatively consistent across most areas, over the past five years, productivity growth has increased at a faster rate than the UK average (12%) in Calderdale (21.7%) and Kirklees (16.3%). However productivity growth is below the UK average in other areas of West Yorkshire.

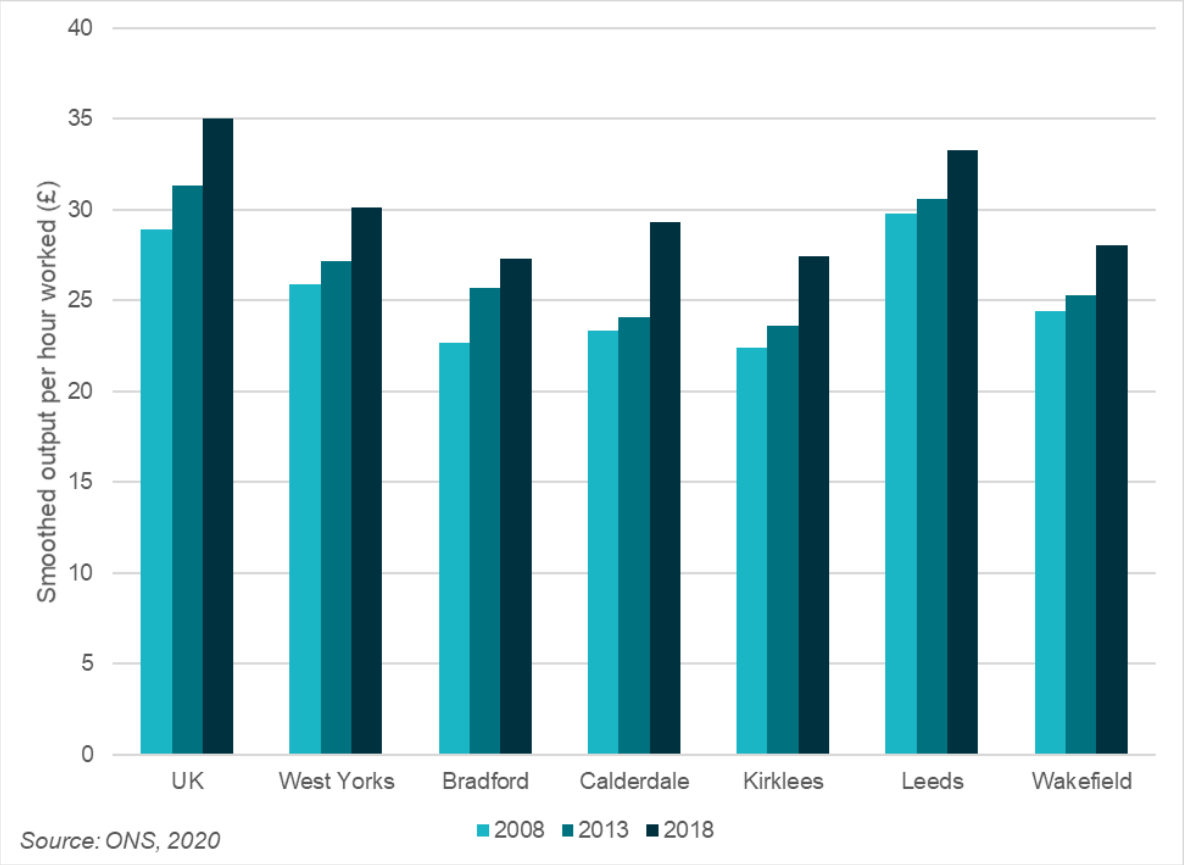
Chart: Productivity growth in West Yorks areas



Productivity is increasing, but remains below UK levels across our region

Although in absolute terms productivity is increasing in all parts of West Yorkshire, all areas have productivity levels below the UK average. This ranges from 78% of UK levels in Bradford and Kirklees, to 95% of UK levels in Leeds.

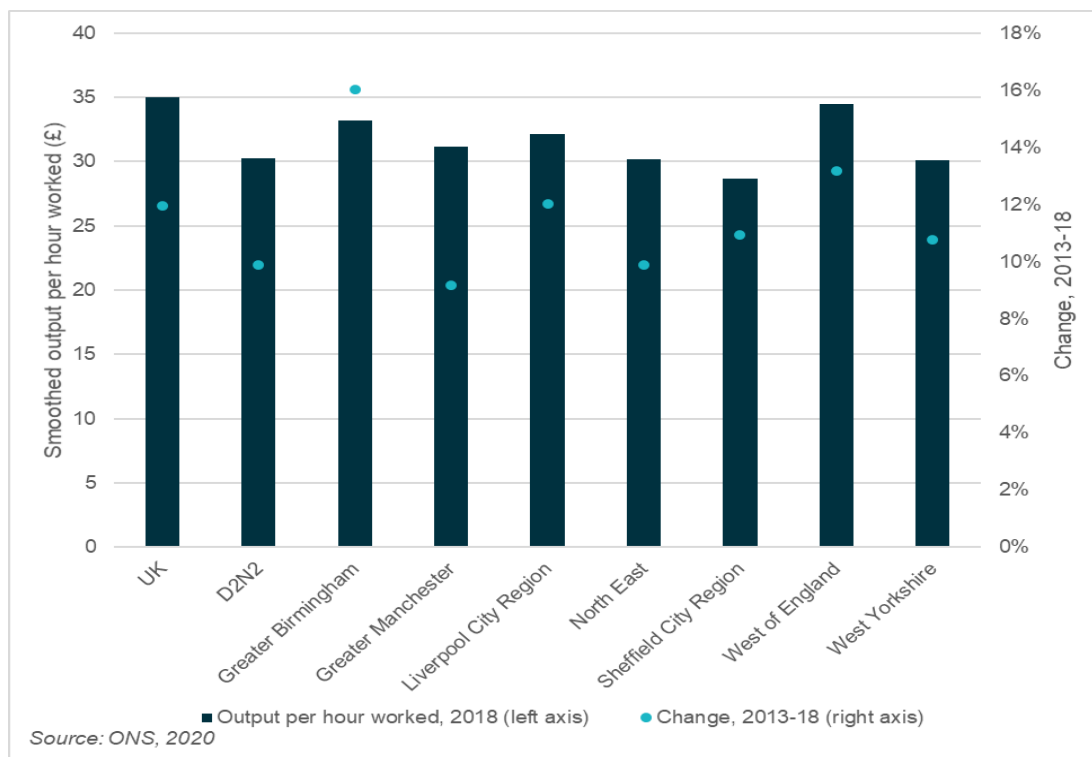
Chart: Productivity in West Yorkshire areas, 2008-18



All core city LEPs lag UK productivity levels

No core city LEPs have productivity levels exceeding UK productivity in 2018, though West of England and Greater Birmingham & Solihull exceed the average for the UK excluding London. In terms of absolute productivity, West Yorkshire is on a par with the North East and D2N2, whilst recent growth has outpaced the North East and Greater Manchester in the North.

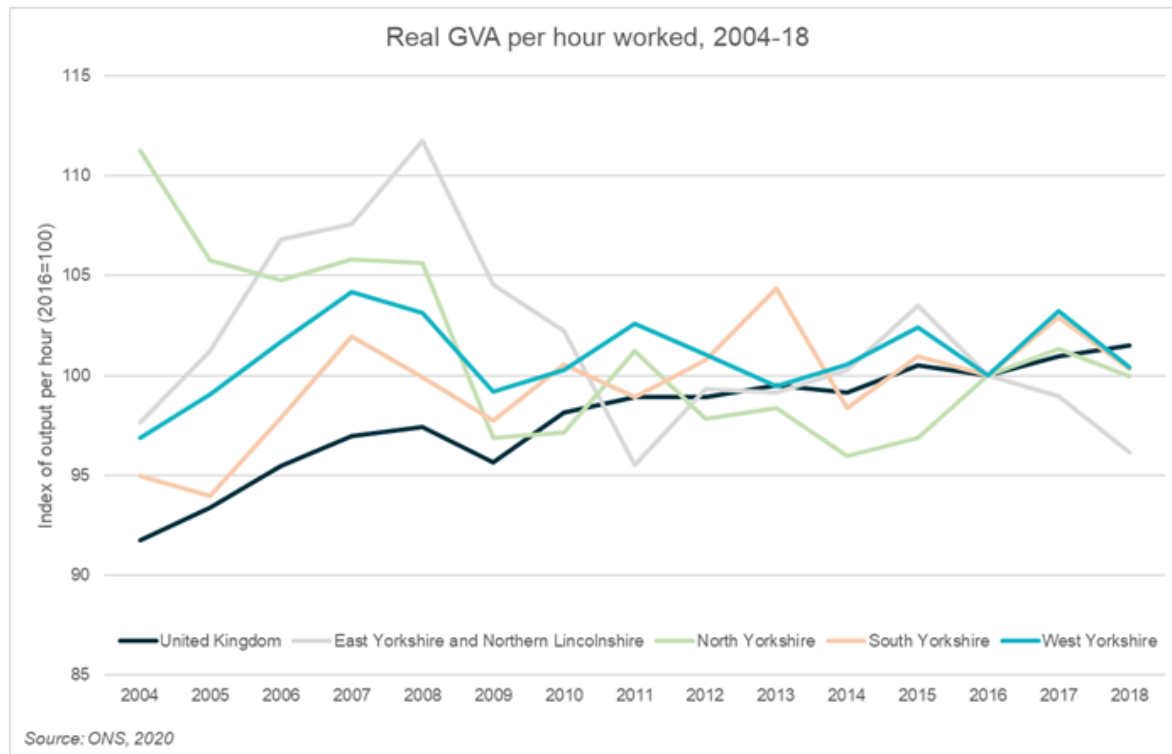
Chart: Productivity in core city LEPs, 2018



Little change in “real” productivity

The above analysis looks at changes in nominal output – that is, including the impacts of inflation. Removing the effects of inflation to look at “real” GVA gives a better sense of how productivity has changed over time. As the below chart shows, output per hour worked is largely unchanged since 2010 in West Yorkshire once the impact of inflation is removed, a little below UK trends.

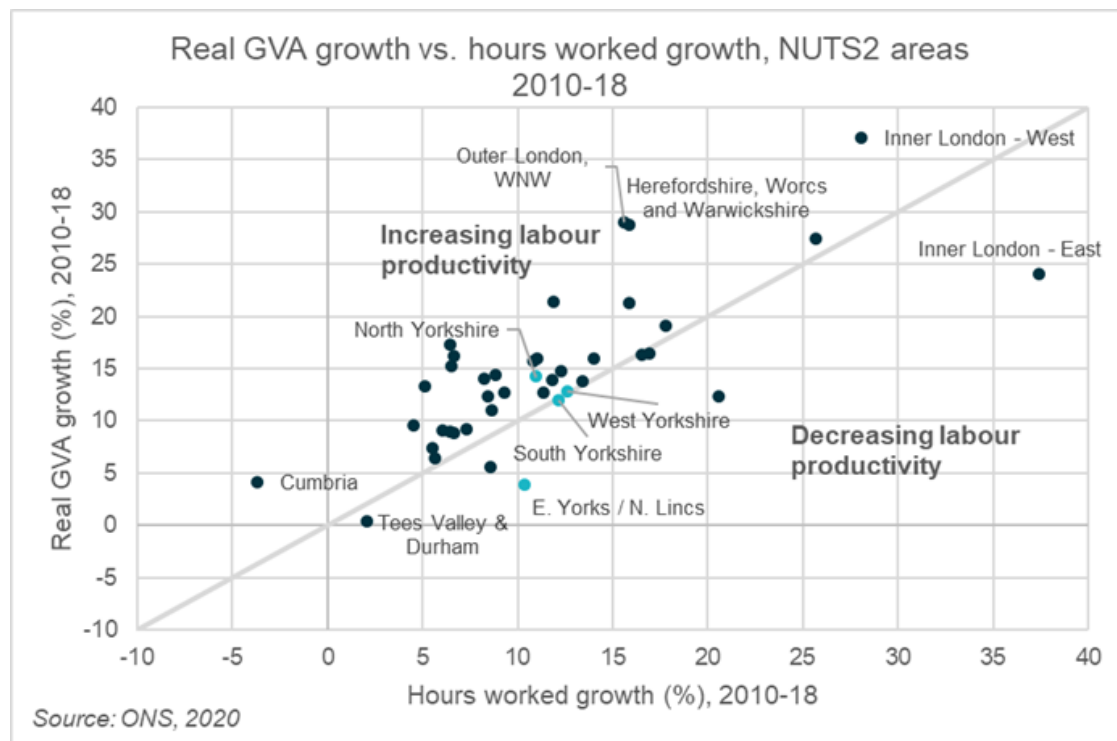
Chart: Real GVA per hour worked – Yorkshire & Humber NUTS2 regions



Growth in GVA matched by growth in hours worked

worked

Looking at changes in both real GVA and the total number of hours worked - in order for labour productivity to increase, the rate of growth in GVA needs to outpace the growth in hours worked. In West Yorkshire, both real GVA and hours worked have increased by around 12% since 2010, leading to neutral productivity growth in real terms – the GVA increase was 0.2 percentage points (pp) higher than the hours worked increase in West Yorkshire.



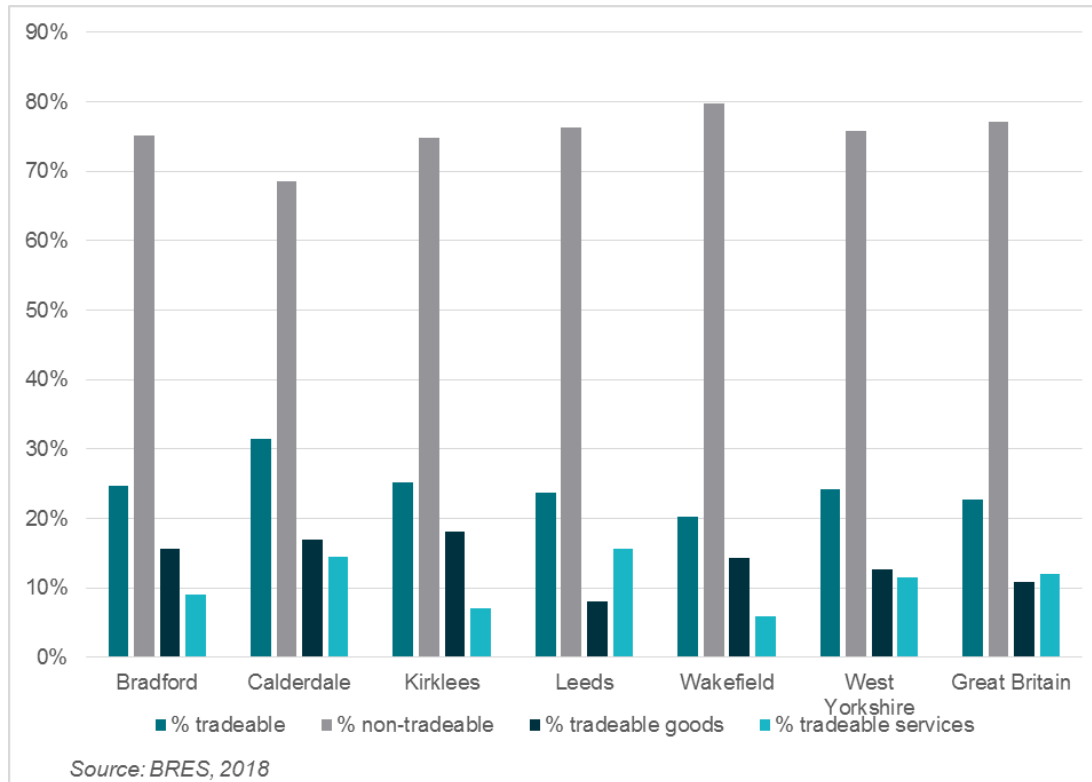
This analysis also demonstrates the different routes that can lead to productivity growth, and the limitations of using productivity as a measure of economic performance without wider context.

Inner East London for example saw productivity fall between 2010 and 2018 despite strong growth in hours worked (37%) and real GVA (24%). Conversely, Cumbria saw productivity improve despite having the third lowest GVA growth of any NUTS2 area, because the number of hours worked actually fell.

Potential to increase the share of and dividends from jobs in tradeable sectors

There is research* to suggest that areas with more prevalent jobs in traded sectors supported the narrowing of disparities in productivity performance. Growing the share of jobs in tradeable sectors is therefore one potential route to higher competitiveness and productivity growth.

Chart: Jobs in tradeable and non-tradeable sectors



Whilst the share of jobs that could be considered in tradeable sectors (based on OECD definitions) is in line with the national average in West Yorkshire at 24%, in most parts of the geography this is largely attributable to the area's strong manufacturing base. This emphasises the potential to increase international trade in these sectors.

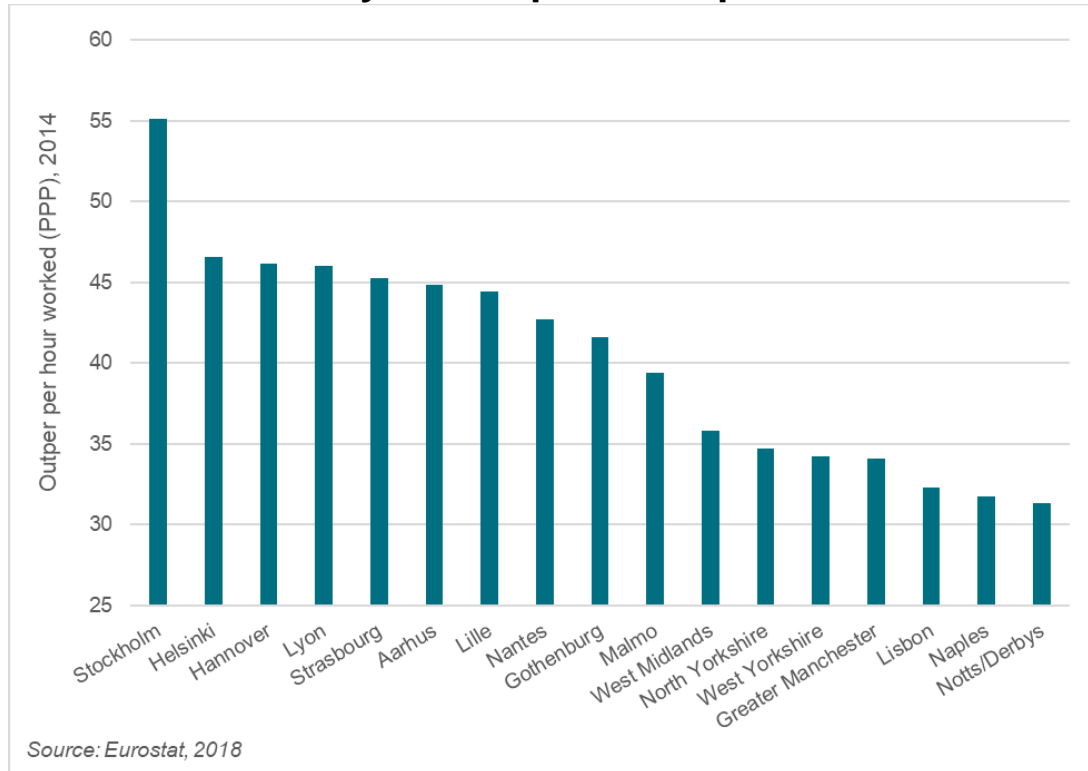
However, only Leeds and Calderdale have in excess of 10% of jobs in tradeable services, significantly below the 12% nationally reflecting a relatively low share of jobs in knowledge intensive service sectors.

* E.g. *Productivity and Jobs in Globalised World*, OECD, 2018; *Trading Places*, Centre for Cities, 2016

Benchmarking against European regions

Benchmarking carried out for Leeds City Region LEP in 2012 identified 15 European comparator areas for Leeds City Region. These areas were considered comparators for the City Region based on their industrial structure and population, so form a useful basis for benchmarking productivity.

Chart: Productivity in European comparator areas

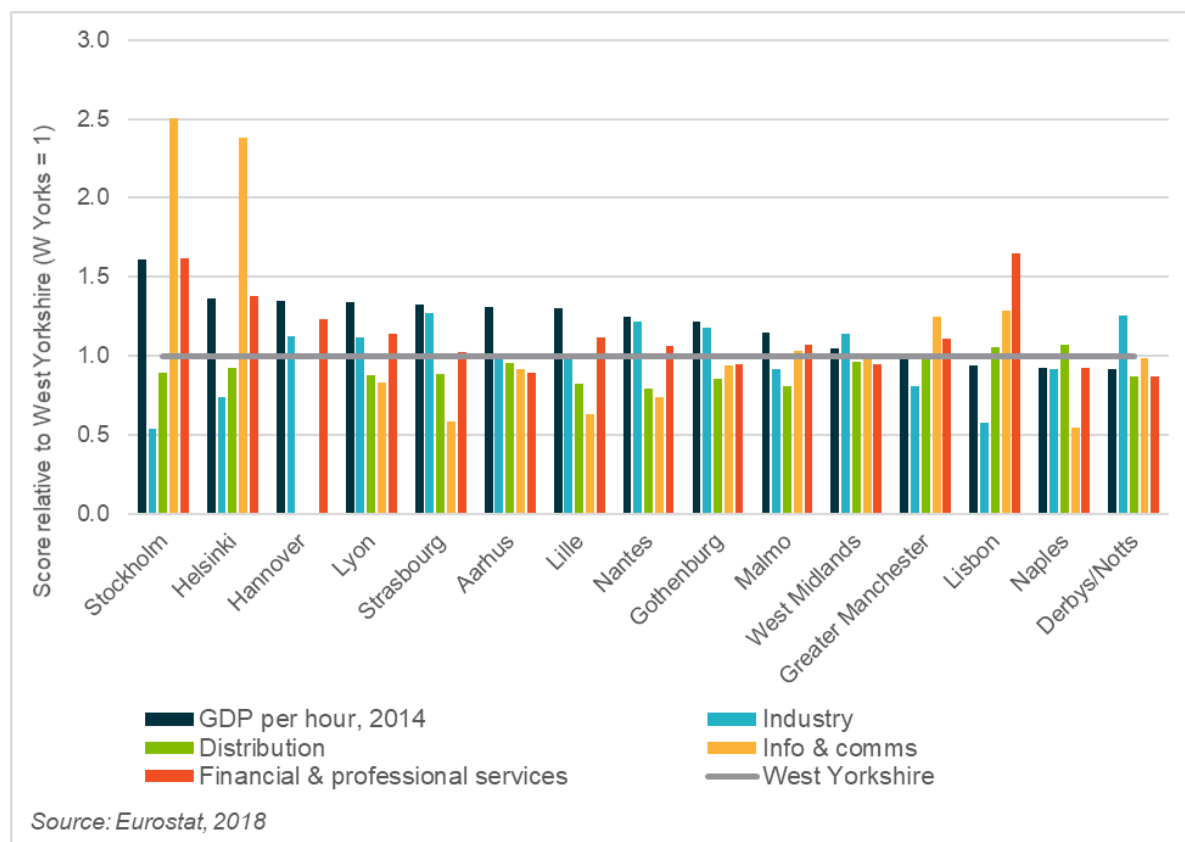


In updated analysis of these comparators, Stockholm stands out as substantially more productive than any other area in this cohort. Other northern European comparators have productivity levels around 40-45PPP per hour. Local productivity levels are considerably below this, though still higher than the Southern European comparators of Lisbon and Naples.

More productive comparators have larger professional and digital sectors

The two most productive comparator areas – Stockholm and Helsinki – have substantially higher levels of employment in information & communications. The sector’s share of employment in these sectors is around 2.5 times higher than in West Yorkshire.

Chart: Productivity and industrial structure



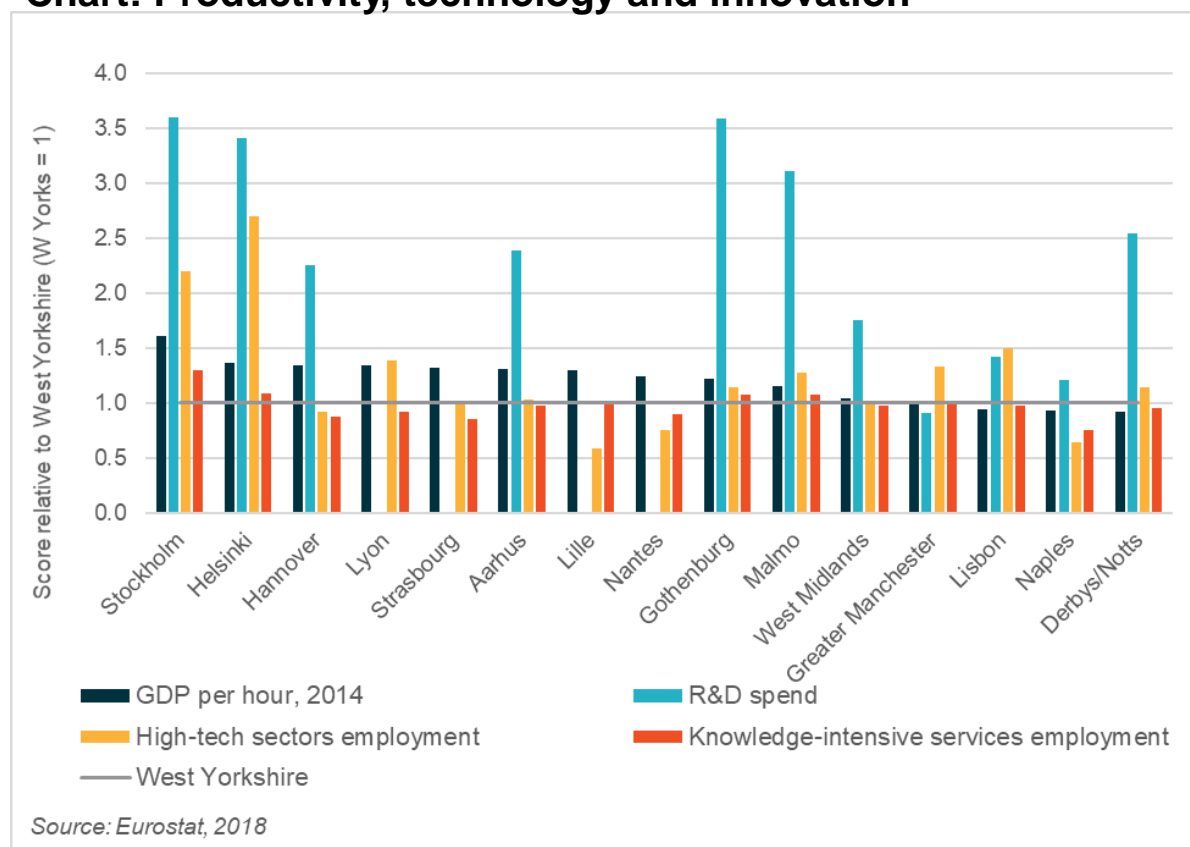
Most areas with higher productivity have a more prominent financial & professional services sector than West Yorkshire, with the sector’s share of employment around 15-40% higher in overseas areas with higher levels of productivity.

Source: Eurostat, 2018

More productive areas tend to have more technology and innovation

The most productive comparator areas of Stockholm and Helsinki also have substantially higher concentrations of high tech employment, as does Lyon to a lesser extent. This picture is not replicated in other areas, however.

Chart: Productivity, technology and innovation



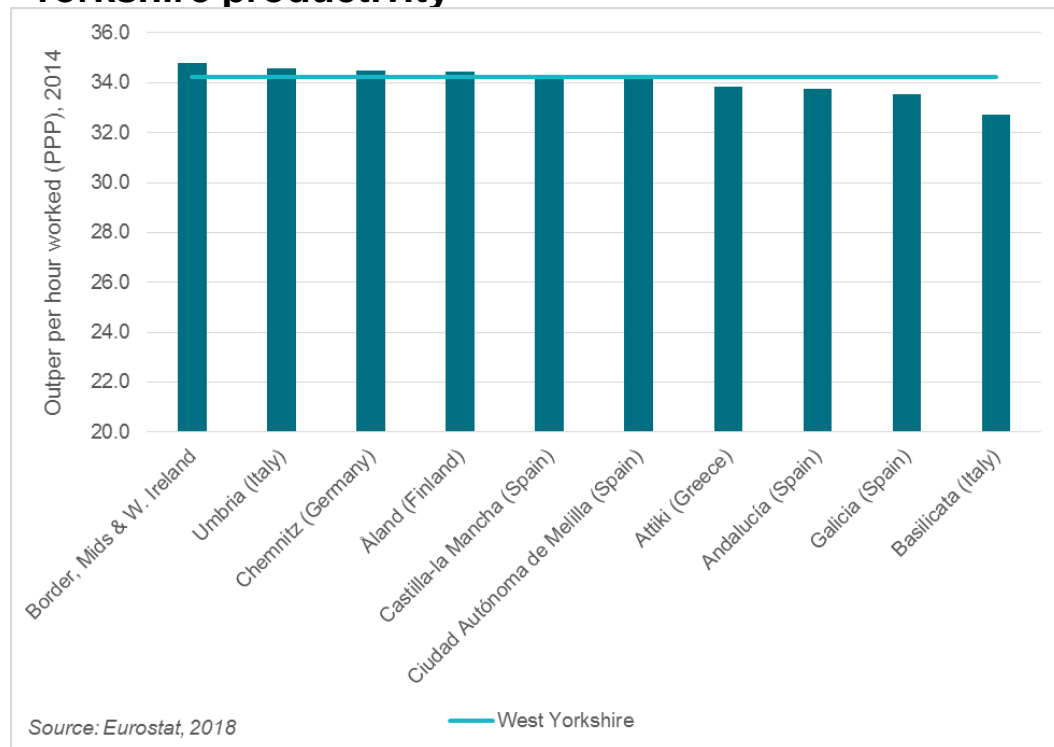
Source: Eurostat, 2018

R&D spend is substantially higher in most overseas areas in this analysis (though comparable data is not available for French regions on this measure). Investment in R&D in West Yorkshire was 2-3 times lower than in Scandinavian and German cities analysed here.

Our productivity performance most closely matches areas in southern Europe

With the exception of the Western and Midland areas of Ireland, Chemnitz in Eastern Germany and the Aaland Islands in Finland, areas with similar productivity levels to this region tend to be located in southern Europe and include Umbria in Italy, where the major city is Perugia, Attiki (Athens) in Greece, and Andalucia (Seville) in Spain.

Chart: European areas with closest match to West Yorkshire productivity



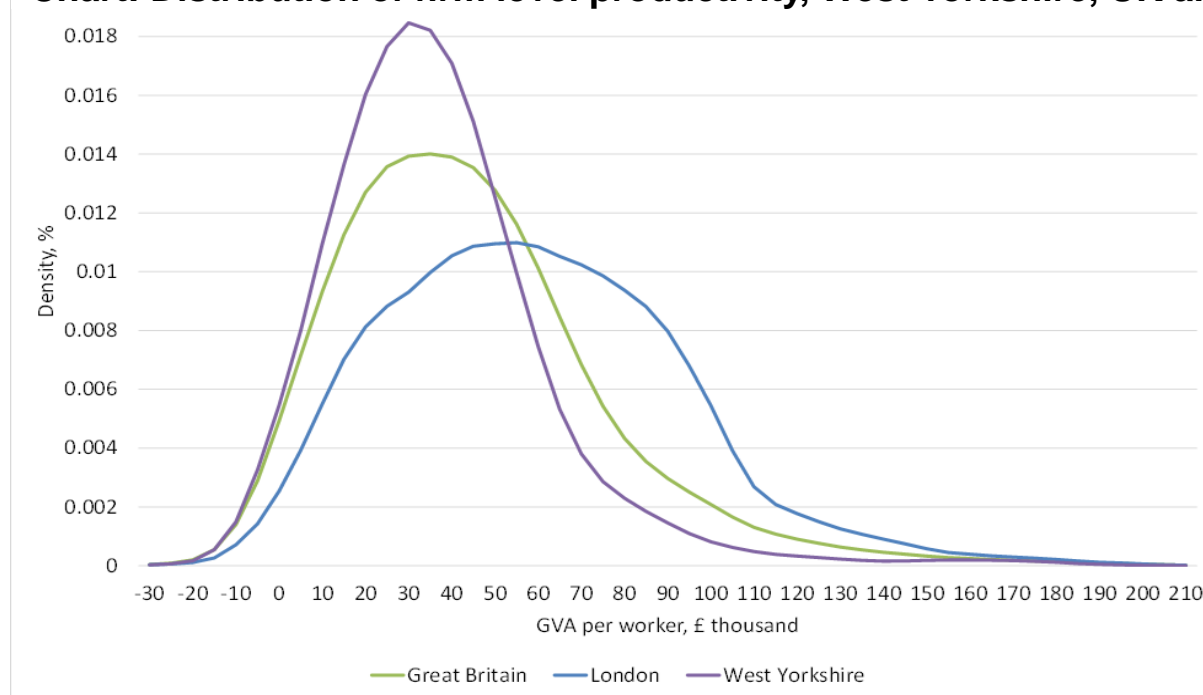
It is however important to note that the above chart excludes a number of UK areas to which West Yorkshire's productivity performance is relatively similar. A number of UK regions have PPPs per hour worked within +/-1 of West Yorkshire including Greater Manchester (34.1), Cumbria, Southwestern and Eastern Scotland, and Herefordshire, Worcestershire and Warwickshire.

The region has a “long tail” of underproductive firms

A range of factors influence this relative productivity underperformance. ONS research suggests that West Yorkshire has a higher proportion of firms with relatively low productivity compared to the country as a whole, and London in particular. This creates a “long tail” of underproductive firms.

This is true to varying extents in other regions, though in most cases a region’s industrial structure only plays a small role in determining productivity performance.

Chart: Distribution of firm level productivity, West Yorkshire, UK and London



Productivity - conclusions

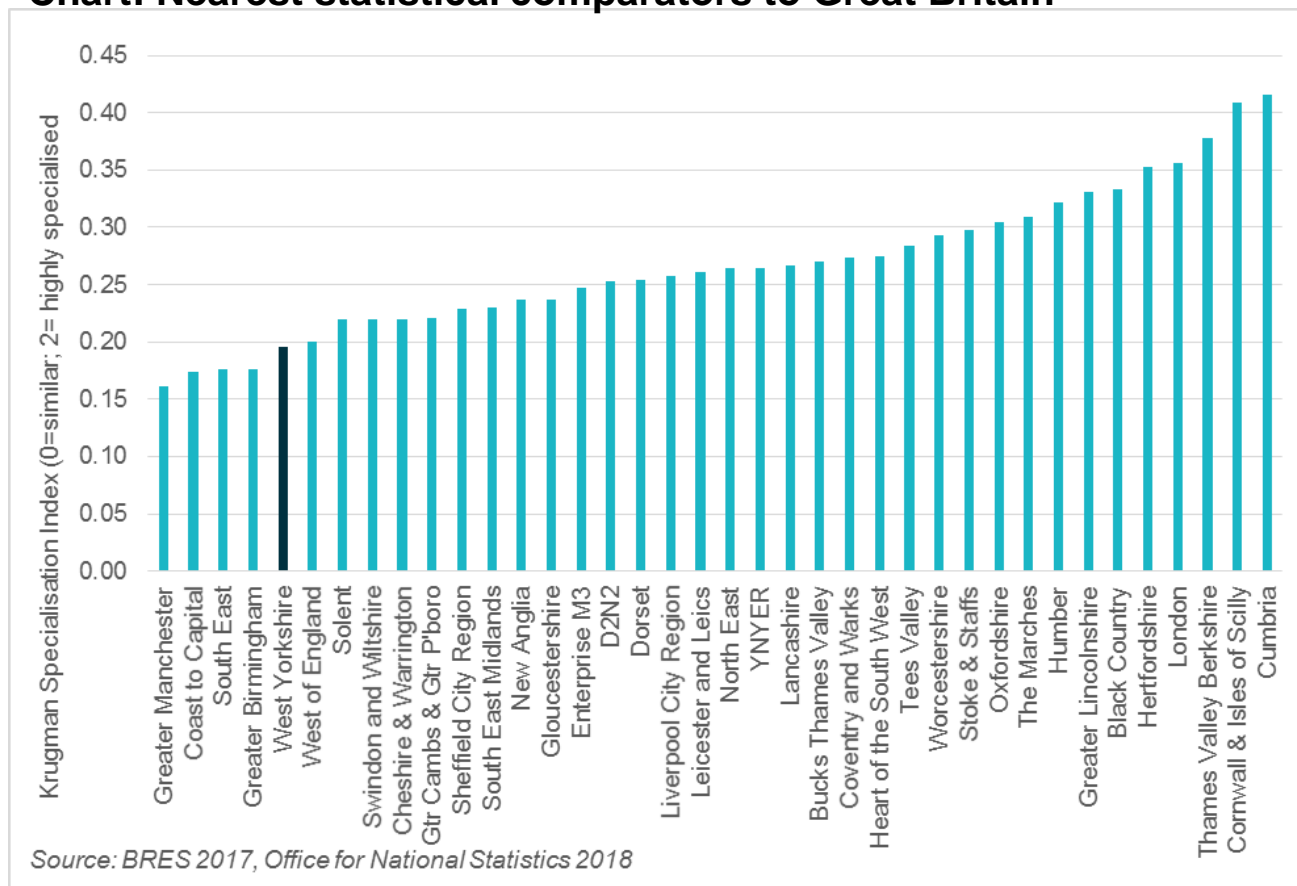
- Improving productivity performance is central to the national (and therefore local) industrial strategy.
- Local productivity performance lags behind UK levels. All parts of our region are less productive than the national economy.
- Although productivity growth in West Yorkshire has almost maintained pace with UK growth in recent years, the gap is not closing.
- A range of factors contribute to the challenge – the region has lower levels of skills, innovation and infrastructure investment than more productive regions.
- The area also has a higher proportion of businesses who are less productive than similar companies elsewhere.

Business, employment and sectors

Our diverse industrial structure closely mirrors that of the UK

As already noted, the industrial structure of West Yorkshire is more similar to that of Great Britain. The area has a Krugman Specialisation Index score of 0.19 (a score closer to zero indicates a similar economy, a higher number up to a maximum of 2 indicates a highly specialised economy). This reflects the diversity of our economy, but masks the fact that there are significant areas of specialism.

Chart: Nearest statistical comparators to Great Britain



Our biggest specialisms are in manufacturing, with emerging strengths in tech services

Textiles offers the biggest degree of employment specialism in West Yorkshire, with employment almost four times the national average. Although most of the biggest specialisms are in manufacturing, service industries such as financial services, advertising and gambling are all present and have strong tech-based employment in West Yorkshire.

Top 15 location quotients for West Yorkshire (min 1,000 jobs; GB LQ=1)

Industry	Location Quotient, 2018	Employment, 2018	District with highest LQ	Highest district LQ
Manufacture of textiles	4.09	7,500	Kirklees	15.7
Manufacture of furniture	3.05	9,500	Kirklees	8.2
Manufacture of wearing apparel	2.45	1,875	Wakefield	10.1
Water collection, treatment and supply	2.31	3,250	Bradford	9.5
Printing and reproduction of recorded media	2.26	8,500	Bradford	5.0
Manufacture of paper and paper products	1.85	3,750	Calderdale	2.3
Manufacture of non-metallic mineral products	1.81	5,500	Wakefield	3.4
Manufacture of machinery and equipment	1.72	10,000	Calderdale	4.3
Manufacture of chemicals	1.51	5,500	Bradford	2.6
Financial services	1.50	26,000	Calderdale	3.2
Advertising and market research	1.47	8,500	Leeds	2.4
Other manufacturing	1.45	4,000	Calderdale	2.3
Manufacture of electrical equipment	1.44	3,750	Wakefield	2.1
Manufacture of rubber and plastic products	1.43	8,000	Calderdale	3.1
Gambling and betting activities	1.39	4,500	Leeds	2.0

Diverse specialisms across and within districts

Looking at district level highlights a broader range of specialisms across the area. The prevalence of machinery & transport component manufacturers in multiple districts emphasizes the region's importance in transport and automotive supply chains. In many districts, this often higher value activity sits alongside sectors where lower skilled jobs often dominate such as food production and more basic manufacturing industries. Knowledge intensive services are more prevalent in Leeds though Bradford and Calderdale have at least some degree of specialism here.

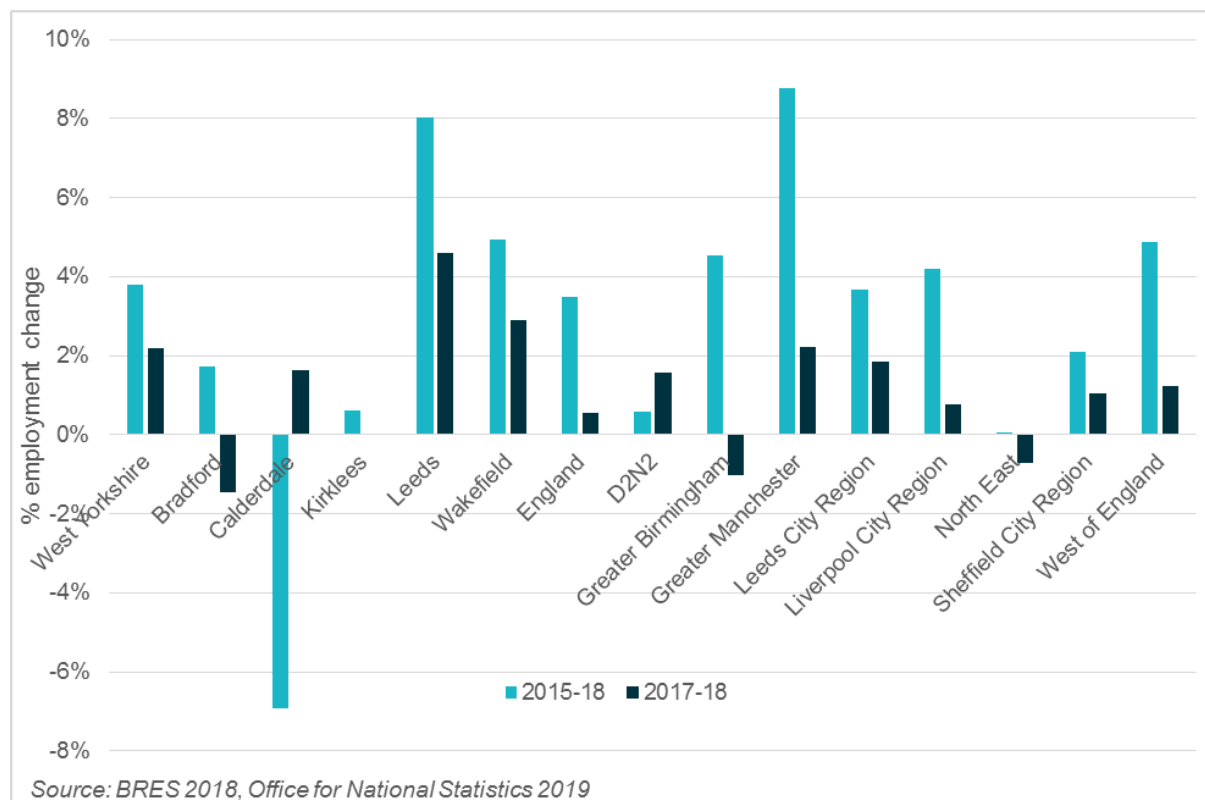
Top 5 location quotients for West Yorkshire districts (district employment share >0.9%)

Rank	Bradford	Calderdale	Kirklees	Leeds	Wakefield
1	Water collection, treatment and supply	Insurance & pension funds	Manufacture of textiles	Advertising and market research	Warehousing and support activities for transportation
2	Printing and reproduction of recorded media	Manufacture of machinery and equipment	Manufacture of furniture	Auxiliary financial services activity	Manufacture of other non-metallic mineral products
3	Manufacture of machinery and equipment	Manufacture of furniture	Manufacture of machinery and equipment	Financial services	Manufacture of food products
4	Manufacture of food products	Manufacture of other non-metallic mineral products	Manufacture of fabricated metal products	Computer programming & consultancy	Manufacture of rubber and plastic products
5	Financial services	Financial services	Wholesale trade	Landscaping & building services	Wholesale trade

Recent employment growth is outpacing national levels

The number of jobs in West Yorkshire increased to 1.1 million in 2018, an increase of 40,000 (3.8%) on 2015. This is faster than the 3.3% growth across Great Britain over this period. Within West Yorkshire, Leeds (8%) and Wakefield (5%) have seen the strongest growth with a more mixed picture elsewhere.

Chart: Employment change, West Yorkshire districts and core city LEPs, 2015-18

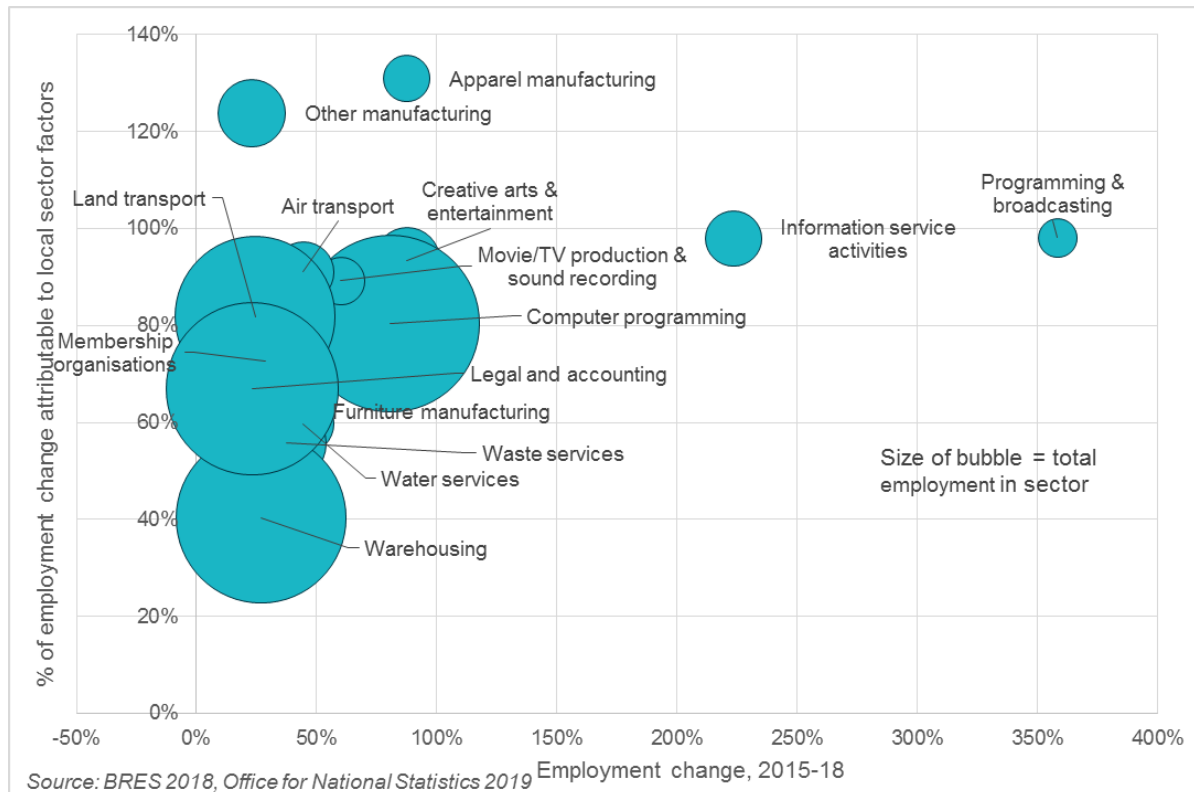


*The substantial fall in Calderdale is likely attributable to changes in agency employment, much of which occurs outside the district

TV industries lead a growing tech services sector, alongside manufacturing specialisms

Programming and broadcasting has seen the fastest employment growth in West Yorkshire in recent years, increasing by 358% from 2015-18. The sector remains relatively small, employing 1,400 people, but this represents strong growth prior to the arrival of Channel 4. TV production and sound recording has seen growth of 60% over the same period. Almost all of this growth is attributable to local sector performance. Other service industries to have seen strong growth since 2015 include information services (224%), creative arts & entertainment (88%), and computer programming (60%).

Chart: 15 fastest growing employment sectors, 2015-18

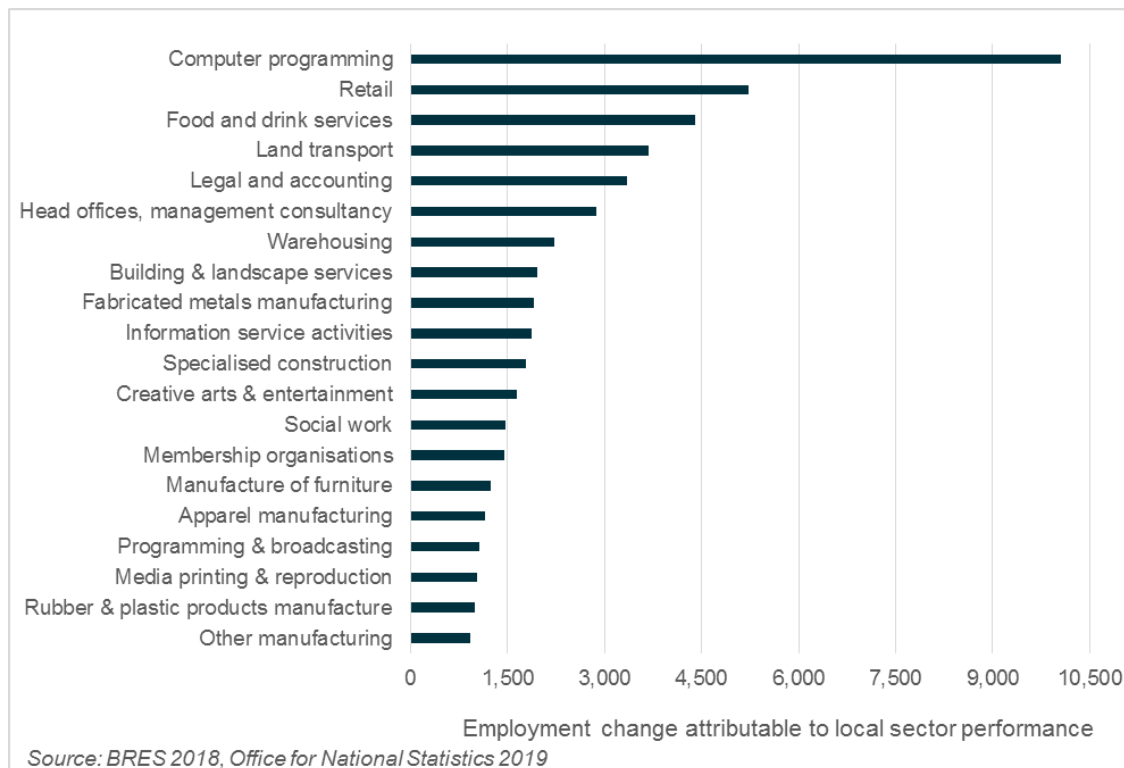


In manufacturing, growth has been strongest in wearing apparel. “Other” manufacturing has also seen growth significantly outstrip national performance. In West Yorkshire, half of the jobs in this sector are in the manufacture of medical components, which represents a specialism for the area with employment 48% higher than the national average. Employment has increased by 6.7% since 2015, whilst it has been flat nationally.

Local performance is contributing to high and low skilled jobs growth

Looking at sectors where a high number of jobs created can be attributed to local sector performance can help to identify industries where high levels of growth are occurring, beyond what might be expected based on national trends.

Chart: Sectors with at least 1,000 jobs increase attributable to local sector performance, 2015-18



Again, areas of high skilled professional services feature prominently, with over 10,000 more jobs in computer programming and 3,000 in legal and accounting than may have been expected based on other trends.

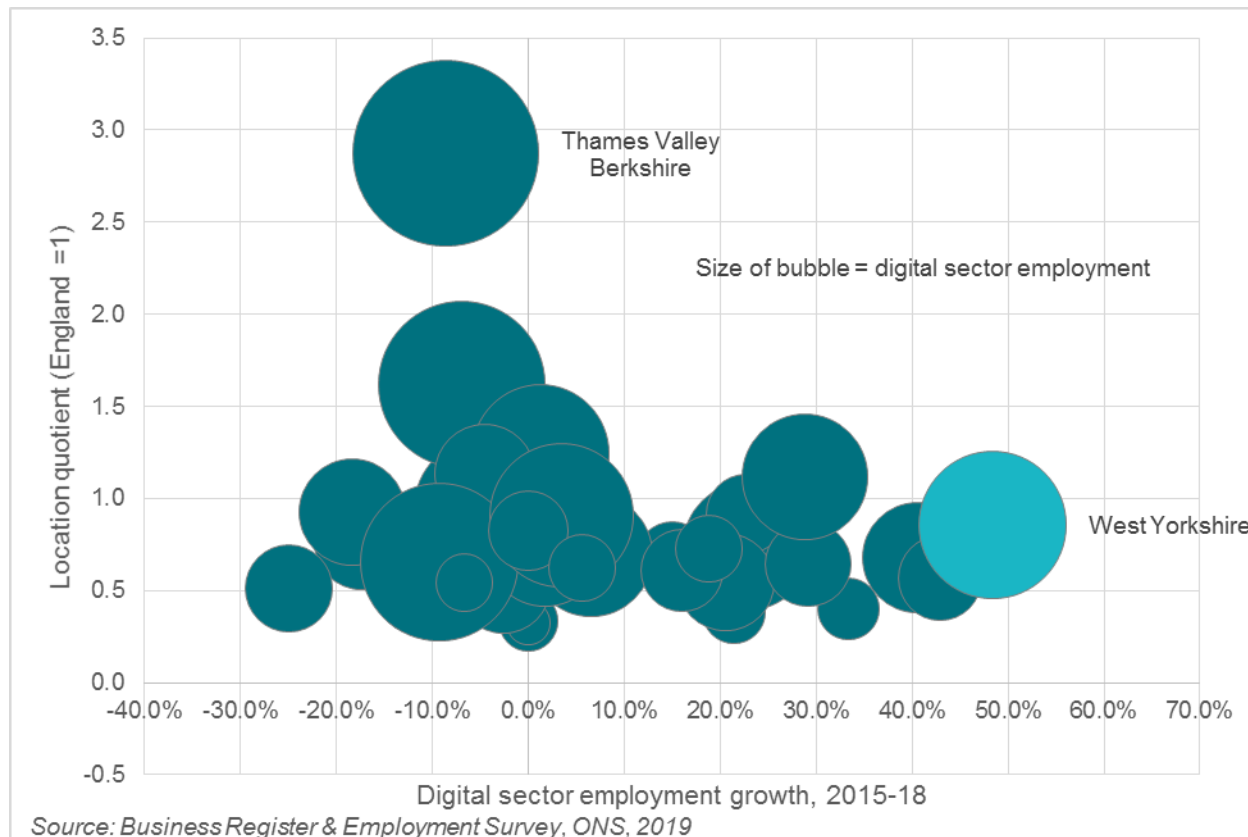
Transport, logistics and manufacturing all have industries following similar patterns.

Alongside this, industries which tend to be lower paid and lower skilled such as retail and food & drink have also seen above trend growth.

West Yorkshire is home to the UK's fastest growing digital sector

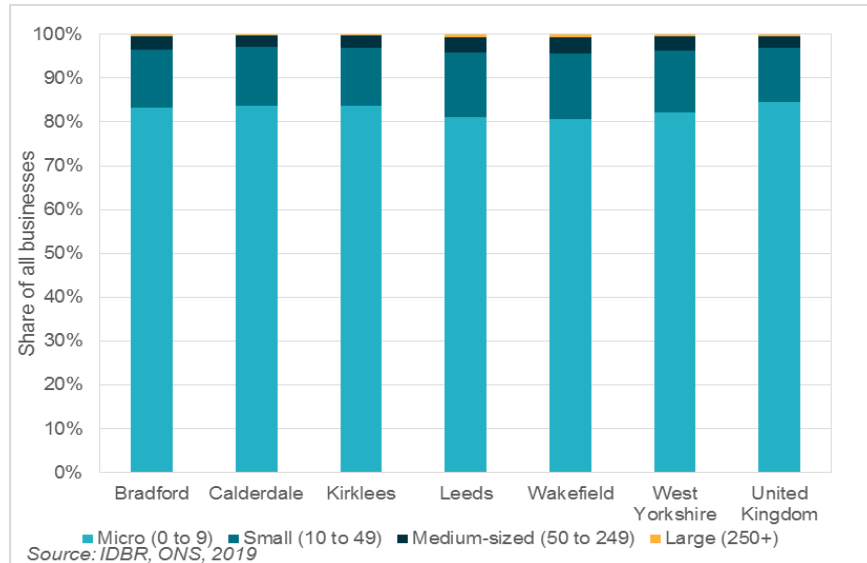
As the above analysis would suggest, West Yorkshire has seen strong growth in the digital sector in recent years. Employment in the digital sector in West Yorkshire has increased by 48%, faster than any other LEP area and six times the rate of growth seen in London since 2015 (8%). Although digital employment outside London is relatively dispersed, the 46,000 jobs in the sector is the 2nd highest in the North.

Chart: Digital sector employment by LEP area (exc. London)



A business base driven by mid-sized firms

Chart: Businesses by size band, 2019

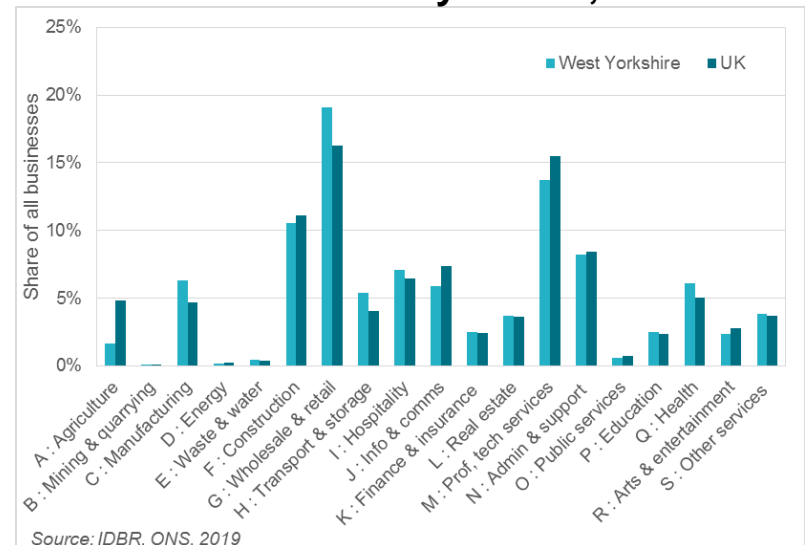


Manufacturers form 6.3% of all businesses in Leeds City Region, more than the 4.7% across the UK. The region also has a greater share of businesses in health (6.1% to 5.1%) and transport & storage, as well as in lower value sectors such as wholesale/retail and hospitality. This strength in health is complemented by a wider health tech sector including 200 medical device manufacturers – a figure 30% higher than its national share.

West Yorkshire is home to almost 92,000 businesses. In line with the UK as a whole, 99.5% of these are SMEs. However, the area has relatively fewer micro businesses and more small and medium size firms.

Businesses with 10-249 staff constitute 16.9% of our business base, compared to 15.2% nationally. This pattern is more pronounced among the manufacturing base. 30% of 5,800 manufacturers employ 10-249 staff, compared to 22% nationally.

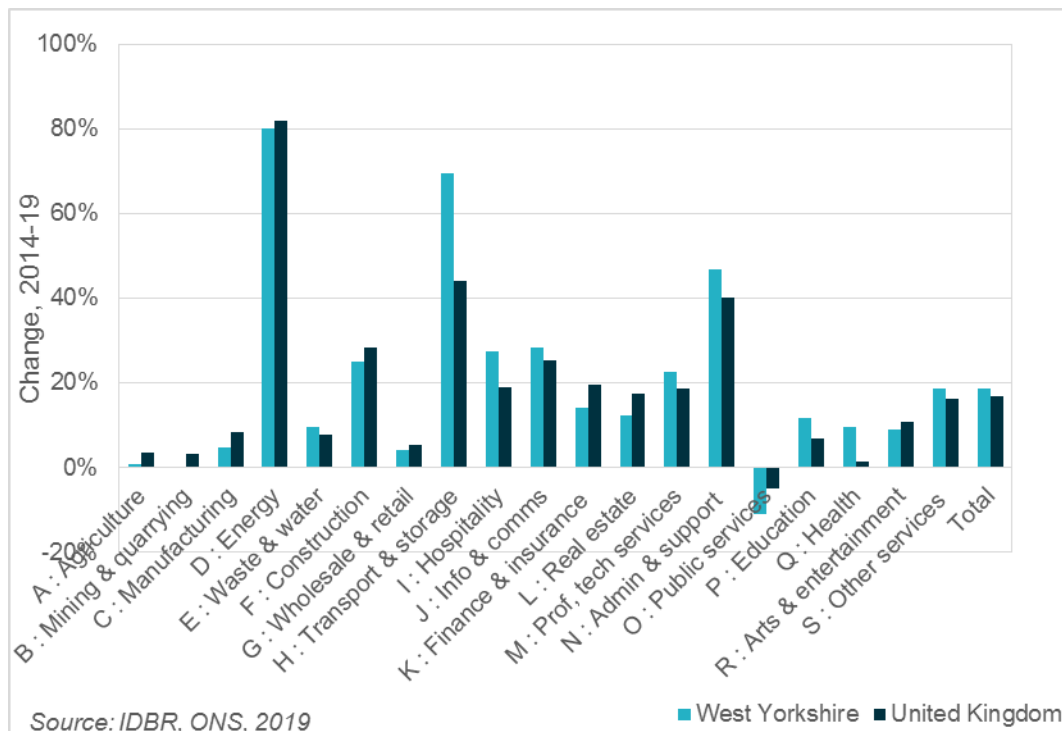
Chart: Businesses by sector, 2019



A growing business base, driven by logistics and service sectors

The number of businesses in West Yorkshire has increased by 18.5% since 2014, ahead of national growth (17%). Transport & storage has increased from 3,000 in 2014 to 5,000 in 2018, an increase of 69%, compared to a 44% increase nationally. Both the UK and our region have seen a substantial increase in businesses in the energy sector in recent years, though the number of businesses in the sector remains small in absolute terms (200 in West Yorkshire as of 2019).

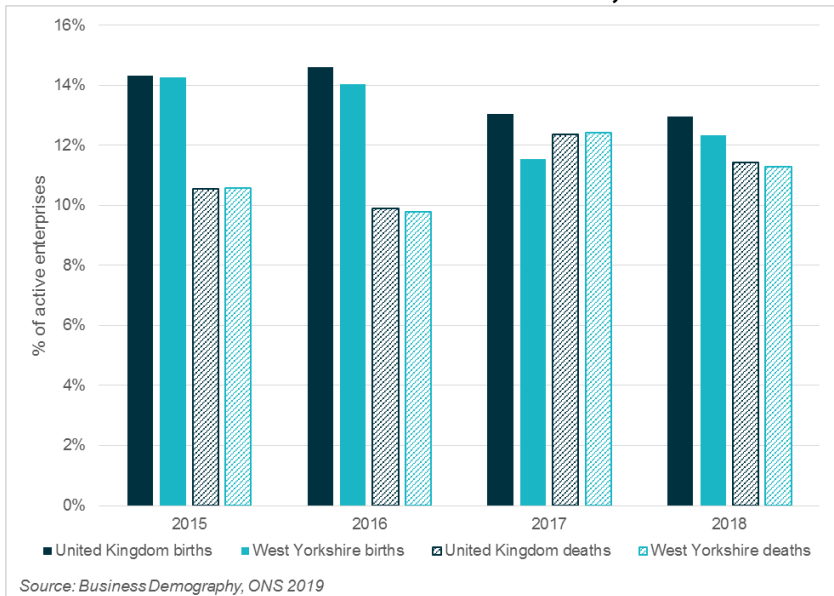
Chart: Businesses change by sector, 2014-9



Although growth in some areas of the services sector has been lower in percentage terms, their critical mass means that they account for a substantial share of growth. There are now 5,400 businesses in information & communications in West Yorkshire, up from 4,200 in 2014 (28% increase). Within this, there are 4,200 computer programming and consultancy businesses, up 31% on five years ago.

Business births and deaths suggest a relatively stable business base

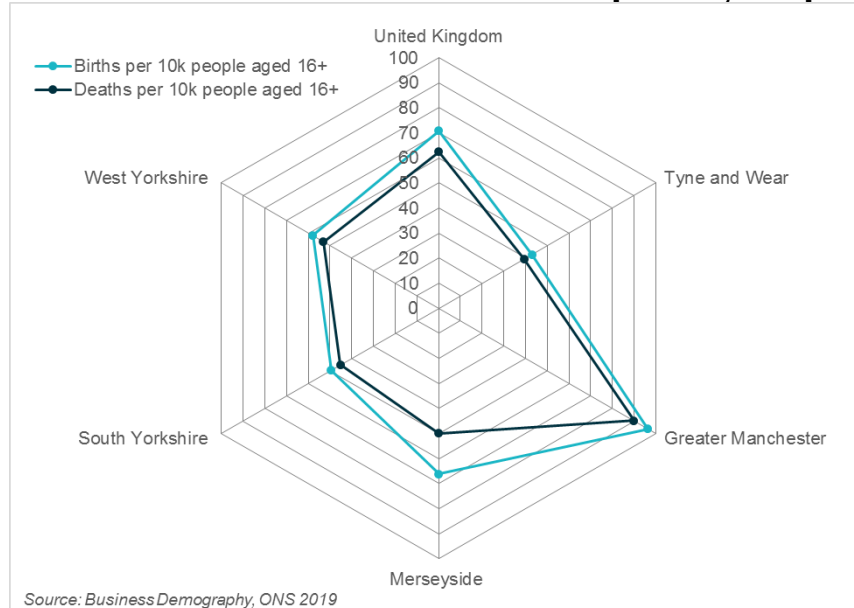
Chart: Business births and deaths, 2015-18



10,700 new businesses were created in West Yorkshire in 2018, a birth rate of 12.3%. This is down from over 14% in 2015 when 11,300 new businesses were created. This rate and trajectory is similar to the UK, as is the business death rate of 11.3% in West Yorkshire.

The combined birth and death rate, or churn in the business base, is 23.6% in West Yorkshire and 24.4% in the UK. A higher rate of churn can reflect a higher degree of dynamism in an economy.

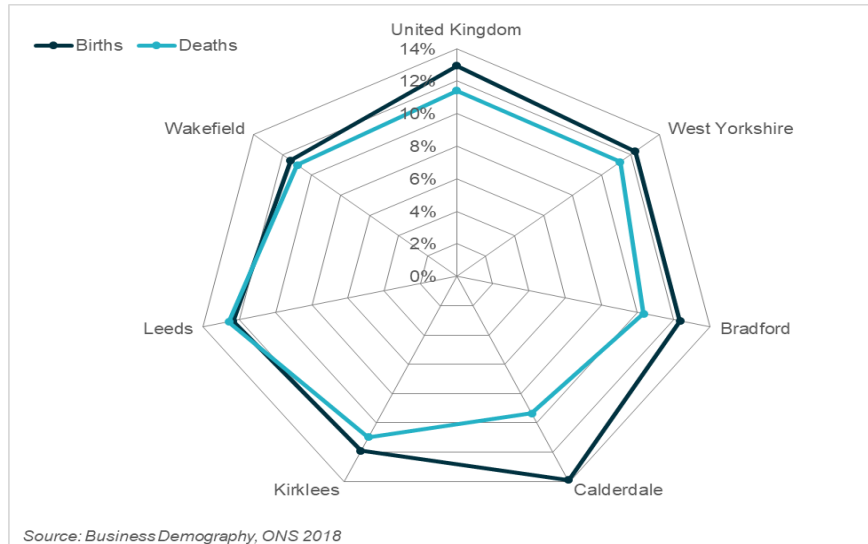
Chart: Business births and deaths per 10,000 people



Looking at births and deaths per 10,000 people aged 16+ can also identify economies with a higher degree of dynamism. West Yorkshire had 58 births and 53 deaths per 10,000 in 2018, higher rates than South Yorkshire and Tyne & Wear. This is substantially lower than the UK rates of 71 births and 62 deaths. This suggests the area has a relatively stable business base compared to some areas.

Business births and deaths - districts

Chart: Business births and death rates

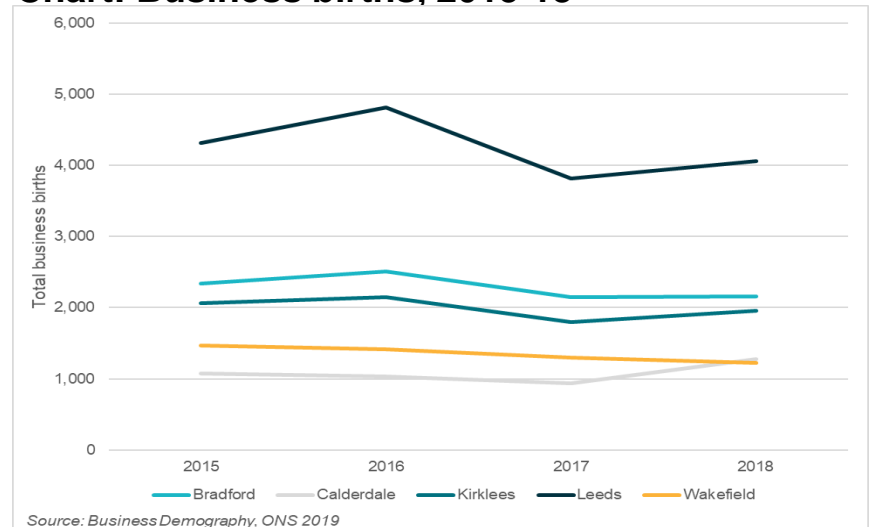


In most districts of West Yorkshire, the number of business births has fallen from a recent peak in 2016. With over 4,000 starts in 2018, Leeds accounts for 40% of all new business activity in West Yorkshire, and almost double the number of starts in Bradford and Kirklees.

Within West Yorkshire, Leeds is the only district where the churn rate is higher than the national rate, albeit only marginally, in 2018. The churn rate was 24.9% in Leeds and 24.4% nationally in 2018. In Leeds, the business birth and death rates are almost identical, suggesting a relatively high degree of dynamism in the economy despite low net growth in the business base.

Calderdale had the highest business birth rate in West Yorkshire in 2018 at 13.9%, whilst it was lowest in Wakefield (11.4%).

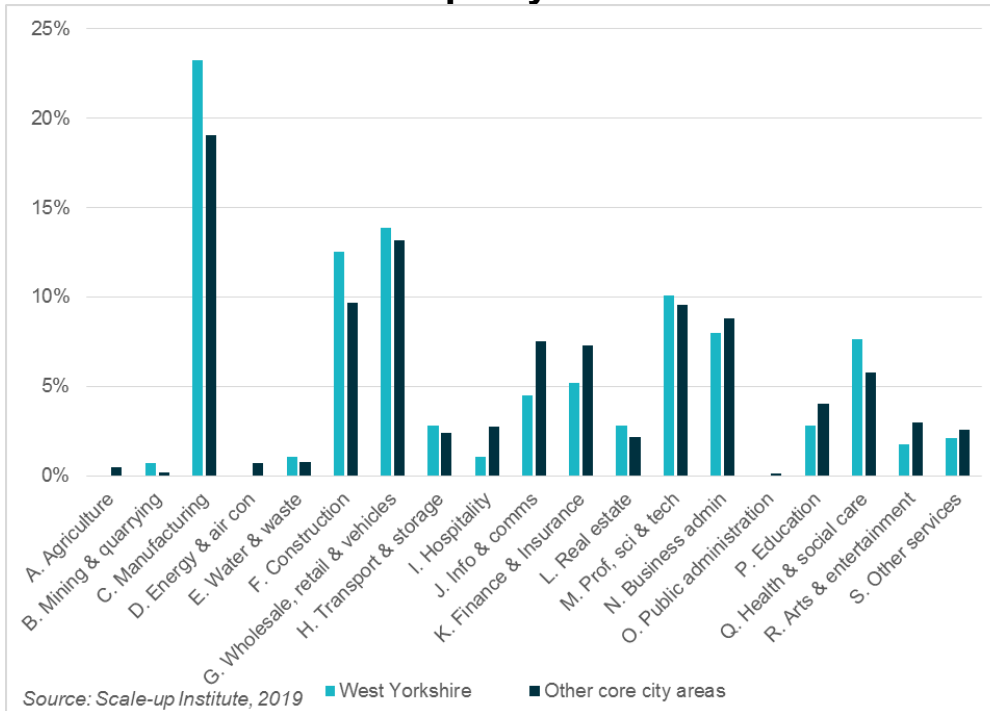
Chart: Business births, 2015-18



Home to scale ups in service and production industries

There are almost 300 scale ups in West Yorkshire according to analysis of data from the Scale-up Institute. These companies have experienced year on year growth in excess of 20% over a three year period, and are therefore seen as key drivers of growth. In West Yorkshire, almost a quarter (23%) of these companies are in manufacturing, higher than their share in other core city areas. The area also has a greater share of businesses in construction (particularly specialised construction) and health.

Chart: Share of scale ups by sector



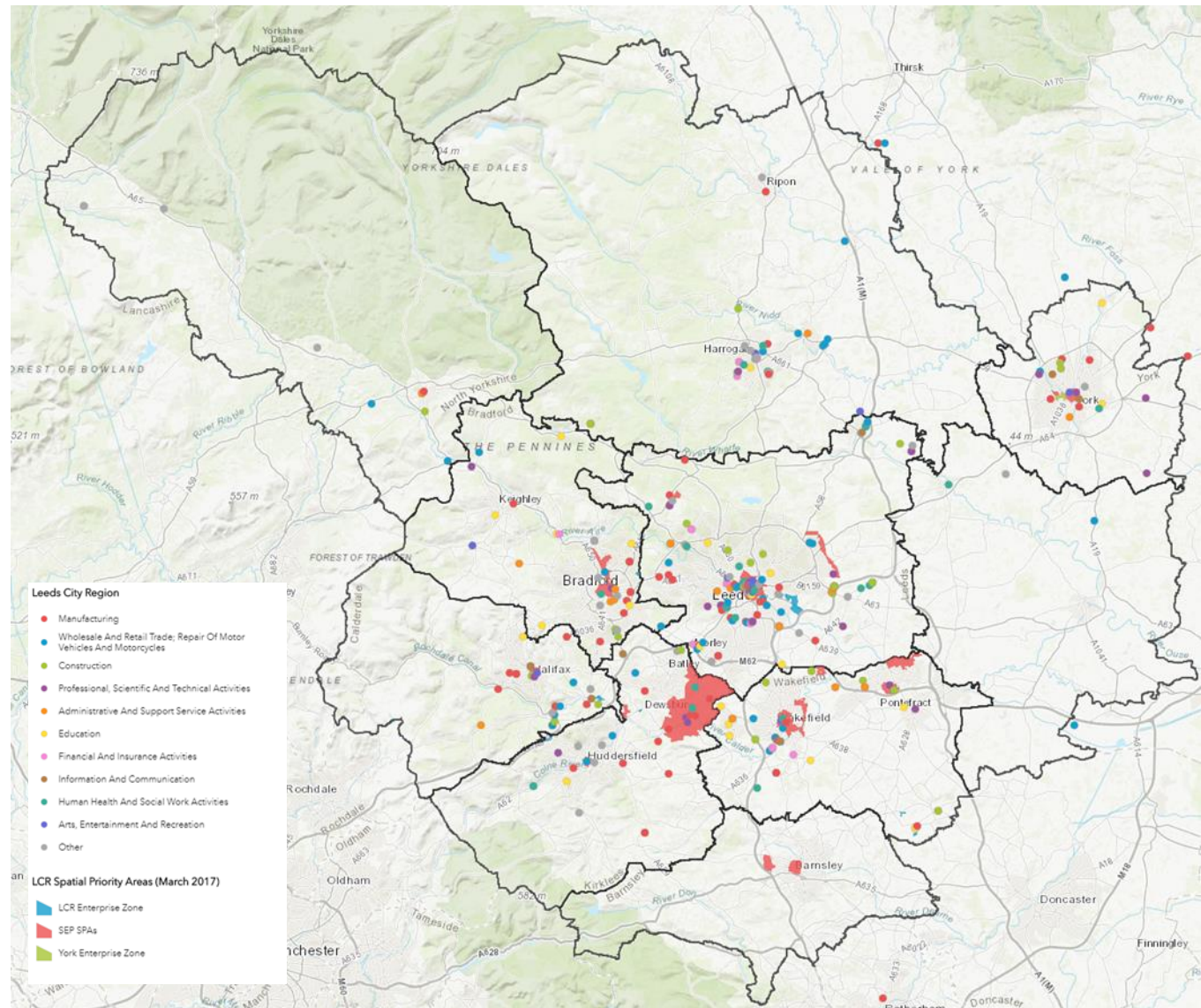
The number of scale ups in West Yorkshire is among the highest in core city areas, but the Scale Up Institute survey identifies three key issues for the future success of scale ups in our area:

- Leadership development
- Access to talent
- Access to UK markets

Spatial distribution of scale ups

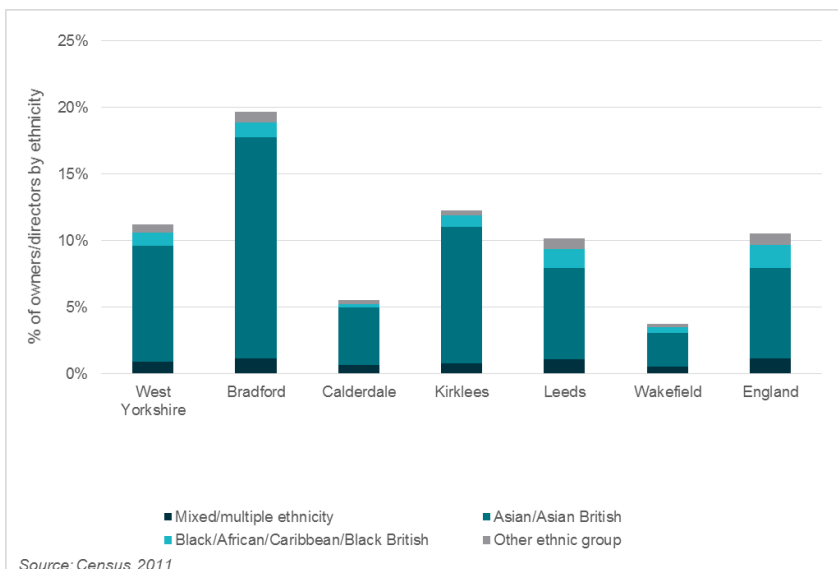
Scale ups in service industries in West Yorkshire and the wider Leeds City Region tend to be clustered around the town and city centres – particularly Leeds, Bradford and York.

Whilst some of the area's manufacturing and construction scale ups are located close to urban centres, they are also around key transport infrastructure.



Diversity in the population is reflected in diverse business ownership

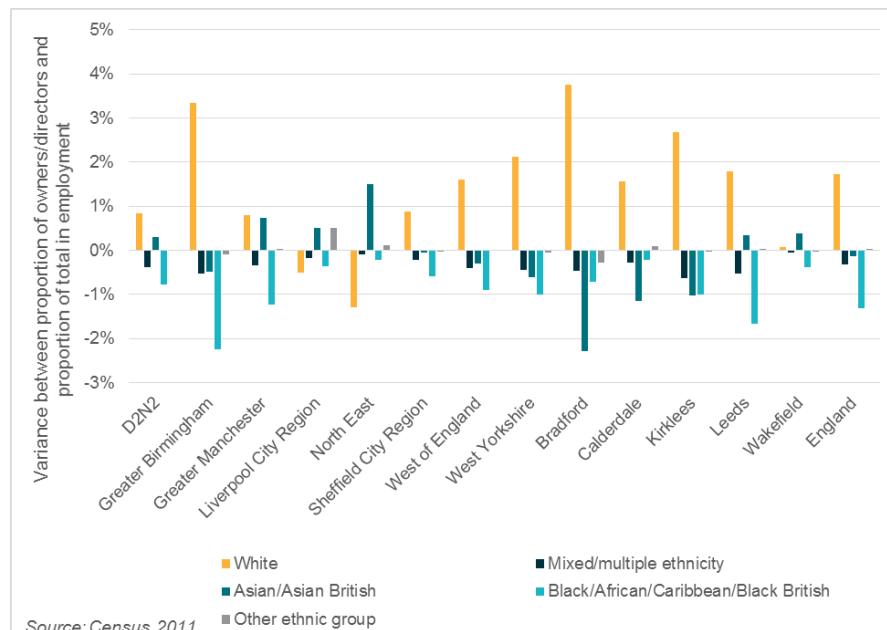
Chart: Owners/directors from ethnic minority backgrounds



However, this is largely a reflection of our area's diverse population. The proportion of business leaders from ethnic minority backgrounds is lower than the share of all workers from those backgrounds. Whilst this is true in most similar LEP areas, it does suggest that people from such backgrounds are under-represented in senior business positions.

One in nine (11%) business owners/directors is from a minority background in West Yorkshire. Whilst this is similar to England as a whole, the region has a higher share of business leaders from Asian backgrounds (8.7% compared to 6.8%). This is particularly true in Bradford and Kirklees, where 17% and 10% respectively of businesses owners are Asian.

Chart: Variance between employment and owners/directors



Business environment – key messages

- Whilst productivity growth is outpacing UK levels in some parts of West Yorkshire, productivity is below the national average across the area. Although productivity growth has recovered somewhat since the recession, the gap to the national average remains significant and is not closing.
- A range of factors contribute to the challenge on productivity – the area has lower levels of skills, innovation and infrastructure investment than more productive regions. Both nationally and internationally, regions with similar industrial structures to West Yorkshire tend to have higher levels of productivity.
- The area's scale means that it has critical economic mass, but this can mask local specialisms. Subsectors of manufacturing, particularly textiles and food and drink, offers local specialism. Areas of professional services have seen strong employment growth in recent years, contributed to the fastest growing digital sector in the country.
- Health remains the biggest employer in the region, through health provision alongside key national institutions and a specialist medical manufacturing sector.

Ideas

Ideas – key messages

- West Yorkshire is part of an internationally significant concentration of higher education institutions. These HEIs help the area perform well on higher education innovation and R&D spend.
- However, this does not seem to translate into similar innovation performance among the area's business base.
- Whilst surveys suggest the area's businesses are engaged in innovation activity, data on investment suggests that this is not at levels seen in other regions.
- This suggests there is potential to increase both the number of businesses innovating, and the level/intensity of innovation within businesses who are innovation active.
- Similarly on exports, HMRC data suggests the number of businesses in our area who export is not particularly low, but the value and volume of exports from our area is below that seen in other areas. Chemical exports are higher than in comparator areas.
- Our relatively low trade with key non-EU markets such as the US and China suggests there may be an opportunity to encourage new and existing exporters into markets further afield, which evidence suggests delivers a greater productivity gain.

Why is innovation important?

- Innovation is key to addressing some of the biggest challenges facing the UK and the Yorkshire economies, most notably productivity.
- Increasing productivity is inextricably linked to innovation. As the UK's Industrial Strategy Green Paper (2017) notes:
- *“Higher levels of investment in innovation correlate with faster growth and higher income levels... leads to the creation of new products and services, more effective processes and better ways of doing business. These improvements are the essence of economic growth.”*
- In recognition of this, the national Industrial Strategy sets out a target for the UK to spend 2.4% of GDP on research & development (R&D) by 2027. Current spend is 1.7%, ranking the UK 11th in the EU.
- Whilst R&D is a critical element of innovation, it is not the only source of innovation which can also come from the development of new processes, products or services to improve efficiency.

Innovation and R&D is correlated with productivity

The national industrial strategy sets out the ambition for the UK to spend 2.4% of GDP on research & development.

Currently, Yorkshire & Humber spends 1.4% of GVA on R&D – less than any other English region. The below charts show the correlation between R&D spend and productivity, particularly when outlying regions are removed (left hand chart).

Chart: R&D spend and productivity, 2017 (exc. London and East of England)

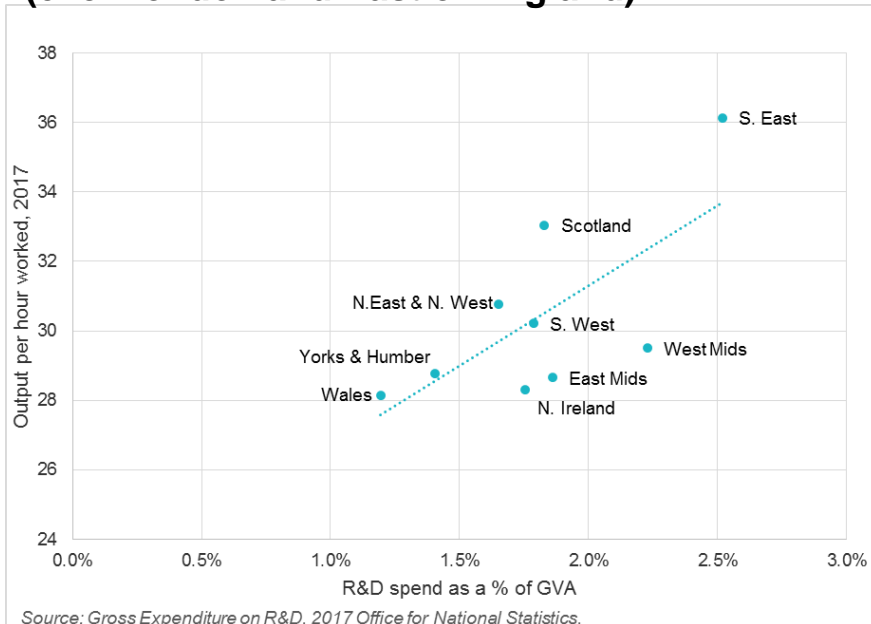
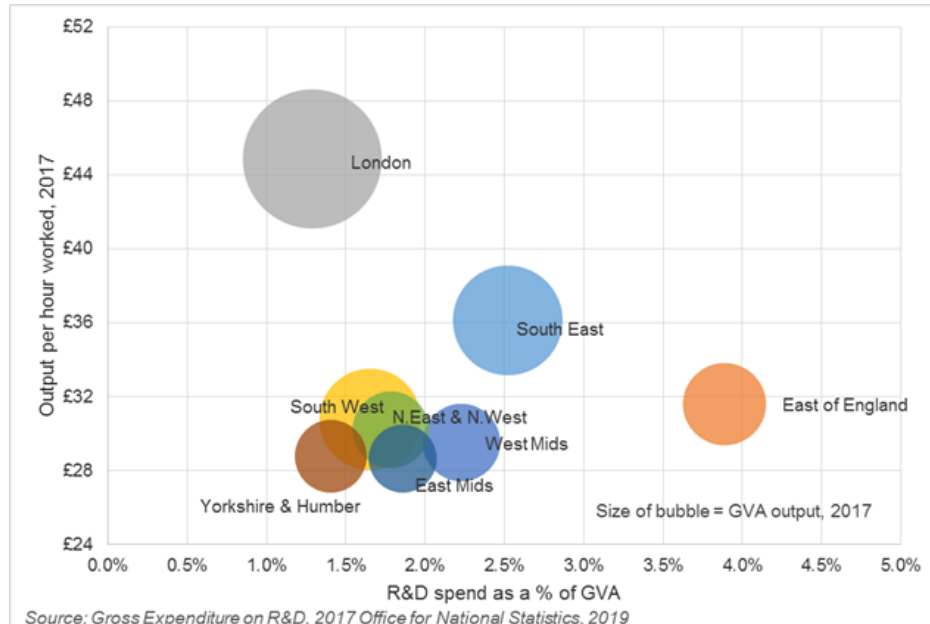


Chart: R&D intensity by region, 2017



The region has an internationally significant concentration of universities

- West Yorkshire is part of a cluster of nine higher education institutions across Leeds City Region, the biggest cluster outside London and representing one of the largest concentrations of HEIs in Europe. Together, these HEIs have around 115,000 students and produce 40,000 graduates each year. West Yorkshire universities host 91,000 students and 30,000 graduates each year
- The 2014 Research Excellence Framework (REF) identified 23% of research at the area's HEIs as world leading, and 42% as internationally excellent. The area ranks in the top three LEP areas for staff submitted to the REF in 5 out of 9 subject areas.

Table: LEP ranking of performance in Research Excellence Framework 2014

Staff submitted to REF – ranking of all LEPs	Medicine & Dentistry	Subjects Allied to Medicine	Biological Sciences	Veterinary Science & agriculture	Physical Sciences	Mathematical Sciences	Computer Science	Engineering & Technology	Architecture, Building & Planning
D2N2	10	15	5	2	13	10	8	12	4
Greater Birmingham	4	11	17	21	6	18	12	7	13
Greater Manchester	2	19	6	21	5	8	6	3	3
Leeds City Region	3	2	2	15	2	6	2	4	9
Liverpool City Region	5	16	14	3	12	15	14	16	7
North East	9	3	7	10	4	7	4	10	5
Sheffield City Region	7	4	8	14	17	13	10	6	2
West of England	8	7	10	4	7	2	3	9	5

Source: LEP Data Framework, Smart Specialisation Hub, November 2018

Alignment of research activity with national priorities

- The area also ranks in the top three LEP areas for publications in the Innovate UK priority areas of Built Environment and Energy.

Table: Leeds City Region rank on Publication Output by Innovate UK priorities, Scopus, 2015-17

Advanced Materials	Agriculture & Food	Bio-sciences	Built Environment	Digital Economy	Electronics Sensors & Photonics	Energy	Health and Care	ICT	Resource Efficiency	Space
5	4	4	3	6	5	3	4	4	6	4

- It is also in the top five areas for publications against each of the great technologies.

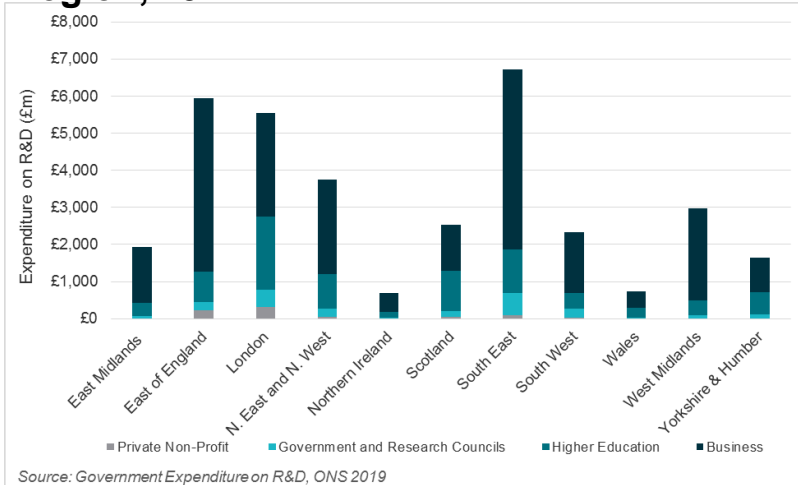
Table: Leeds City Region rank on Publication Output by Innovate UK priorities, Scopus, 2015-17

Advanced Materials	Agri-science	Big Data	Energy Storage	Regenerative Medicine	Satellites	Synthetic Biology
5	4	4	5	4	4	4

Source: LEP Data Framework, Smart Specialisation Hub, November 2018.
 Data excludes London. Some sectors excluded where data is unreliable.

R&D spend is low in Yorkshire

Chart: Components of R&D expenditure by region, 2017



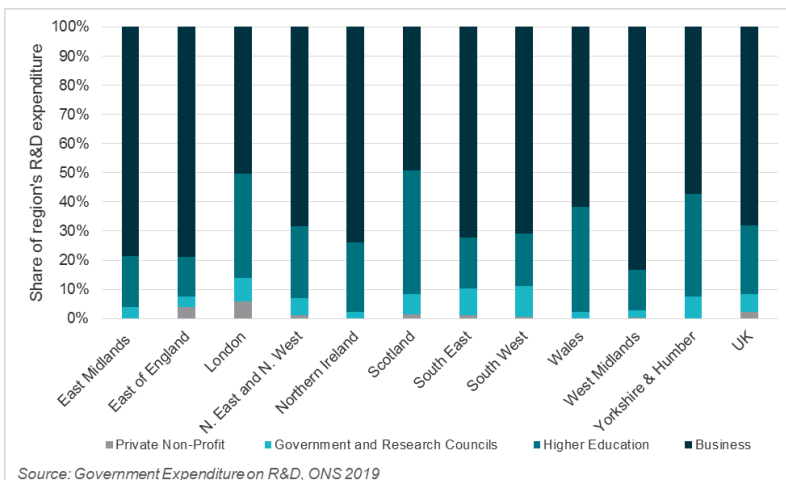
R&D spend in Yorkshire & Humber totalled £1.64bn in 2017, lower than any English region in absolute terms (though data for N. East and N. West are combined).

The national industrial strategy sets out the ambition for the UK to spend 2.4% of GDP on R&D. Currently, Yorkshire & Humber spends 1.4% of GVA on R&D – less than any other English region.

Yorkshire performs relatively well at attracting university R&D expenditure. The £579m higher education R&D investment in the region is higher than would be expected if this investment matched the region's share of total R&D investment, or its share of total economic output.

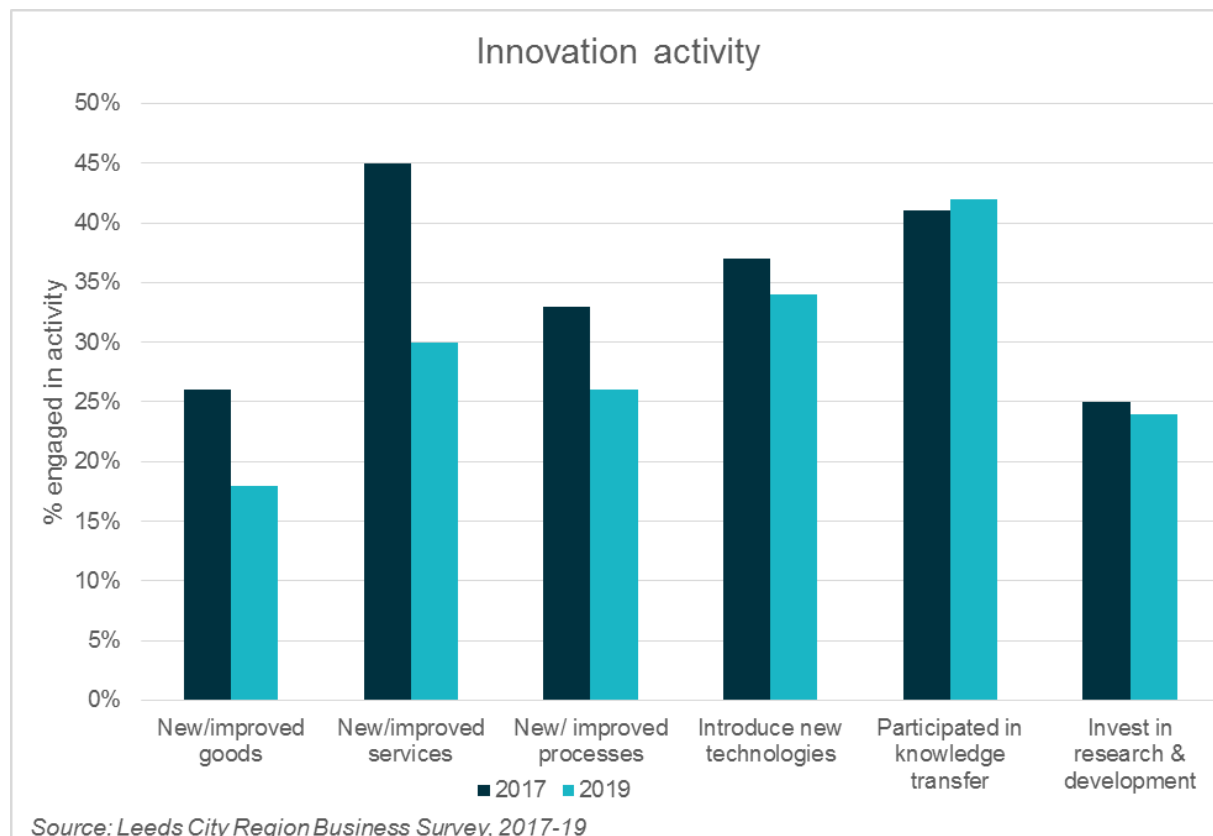
However, business investment in R&D is substantially lower in Yorkshire & Humber. Just 57.2% of R&D spend came from businesses, lower than anywhere in England other than London, and below the UK figure of 68%.

Chart: Share of R&D spend by region, 2017



Innovation activity has fallen in most categories since 2017

The Leeds City Region Business Survey provides insight on innovation activity for that geography (rather than West Yorkshire). It shows the number of businesses engaged in most categories of innovation has fallen since 2017.

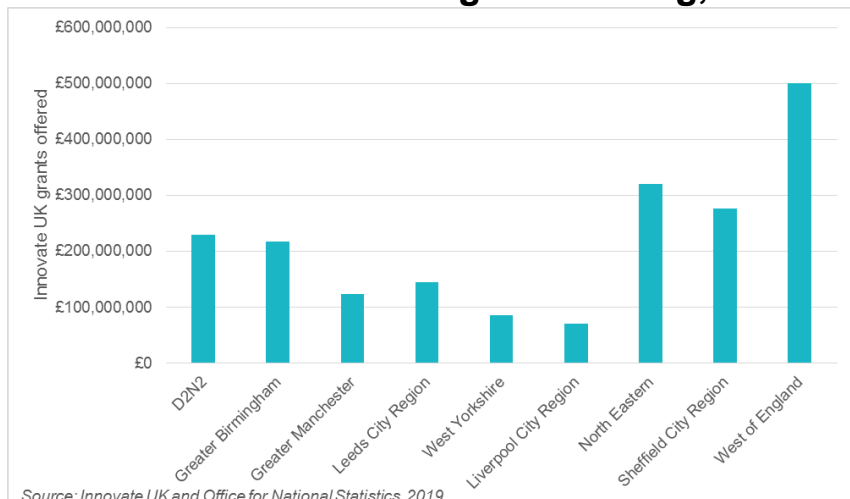


65% of businesses said they engaged in some form of innovation in the past three years in the 2019 survey, down from 71% in 2017.

There were statistically significant falls in most categories of innovation, though the proportion engaged in R&D held steady at around 25%, and just over 40% participated in knowledge transfer.

The region has attracted £177m Innovate UK investment

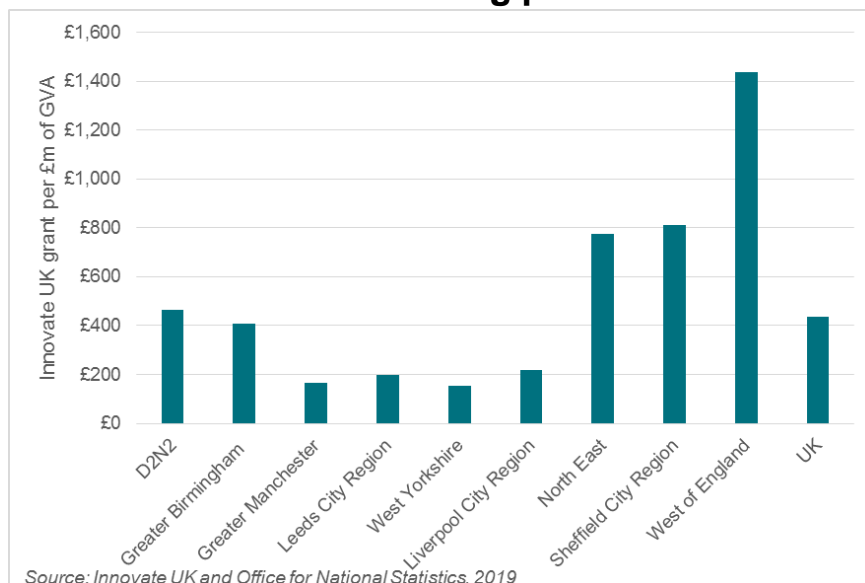
Chart: Total Innovate UK grant funding, 2000-17



West Yorkshire has had around 770 Innovate UK projects with over £86m of grant funding since 2000, whilst the wider Leeds City Region has received around £145m. This LCR figure is more in absolute terms than core city LEPs in the North West, but slightly less than those in the Midlands, where Greater Birmingham has attracted £218m and D2N2 £229m. However, it is some way below the £500m invested in the South West and the £275m and £320m in Sheffield City Region North East LEP areas respectively.

The value of Innovate UK investment made in West Yorkshire has averaged £153 for every million pounds of GVA per year since 2009. This is lower than in other core city areas, with Greater Manchester next lowest at £167. The wider Leeds City Region has attracted £197 per £mGVA, reflecting strengths in North Yorkshire in particular in attracting research funding. With the national average at £434, this suggests our region has not kept pace in terms of attracting this investment.

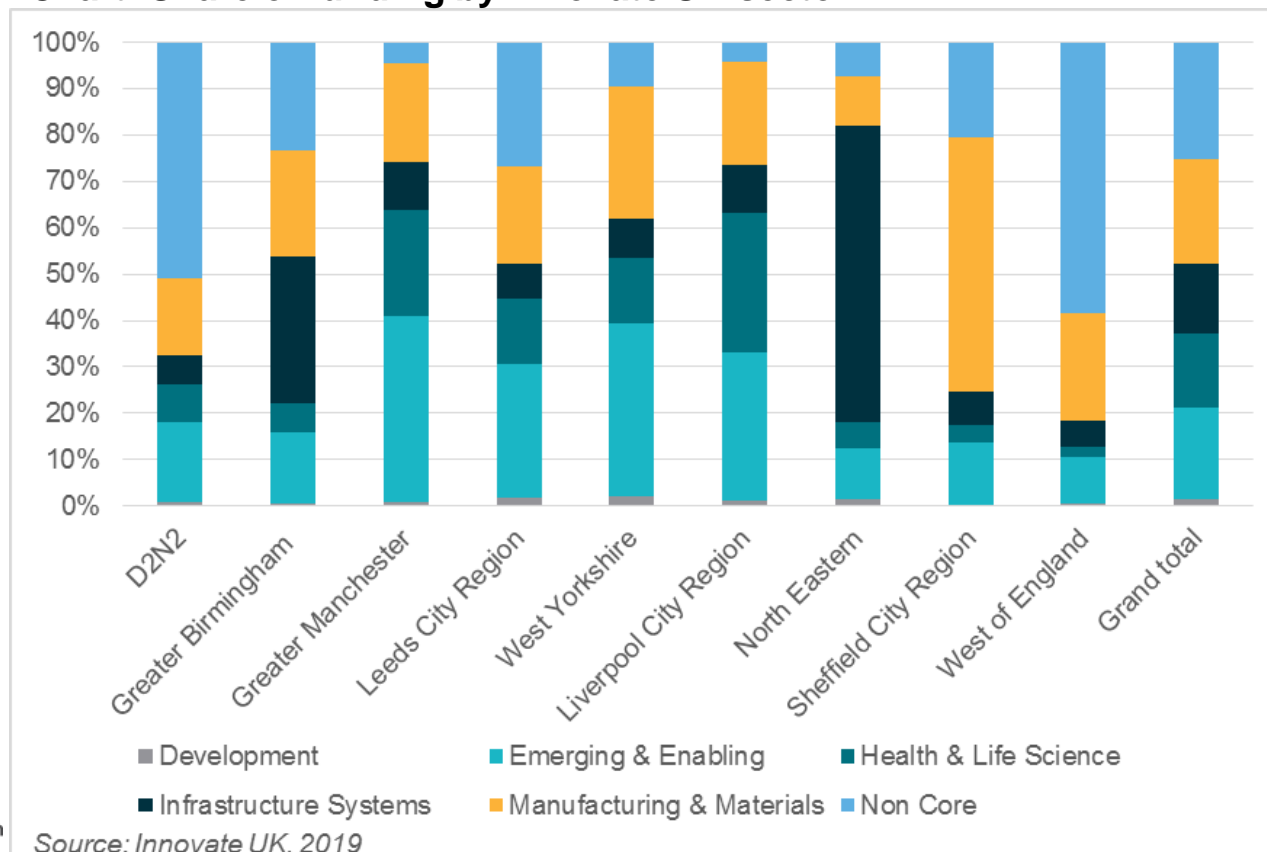
Chart: Innovate UK funding per £m GVA



A third of Innovate UK funding was for emerging & enabling technologies

Around 37% of Innovate UK investment in West Yorkshire was for emerging and enabling technologies, almost double the 20% of all national funding this category accounted for. Manufacturing & materials accounted for 29% of investment in our region, again above its national share. Health & life sciences, accounted for 14% of funding, close to its national share of 16%.

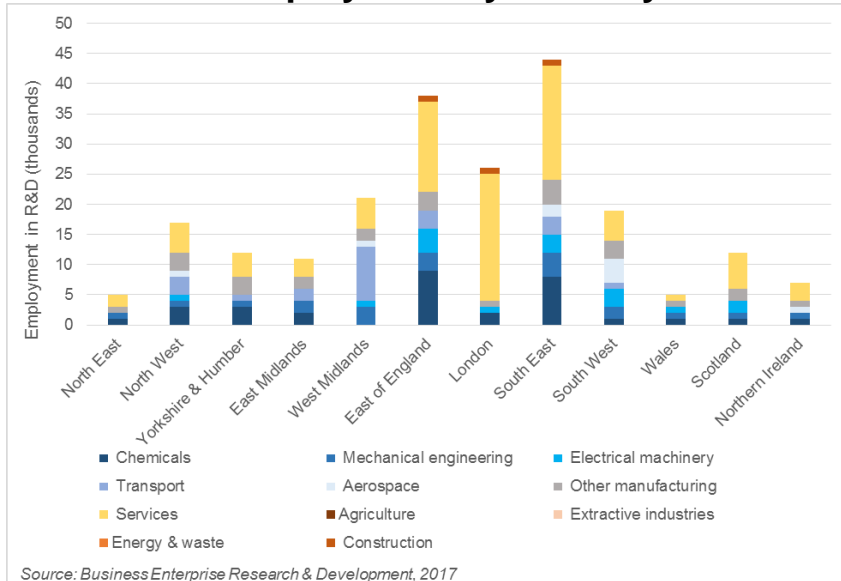
Chart: Share of funding by Innovate UK sector



Source: Innovate UK, 2019

Chemicals offer some specialism in R&D employment

Chart: R&D employment by industry



Source: Business Enterprise Research & Development, 2017

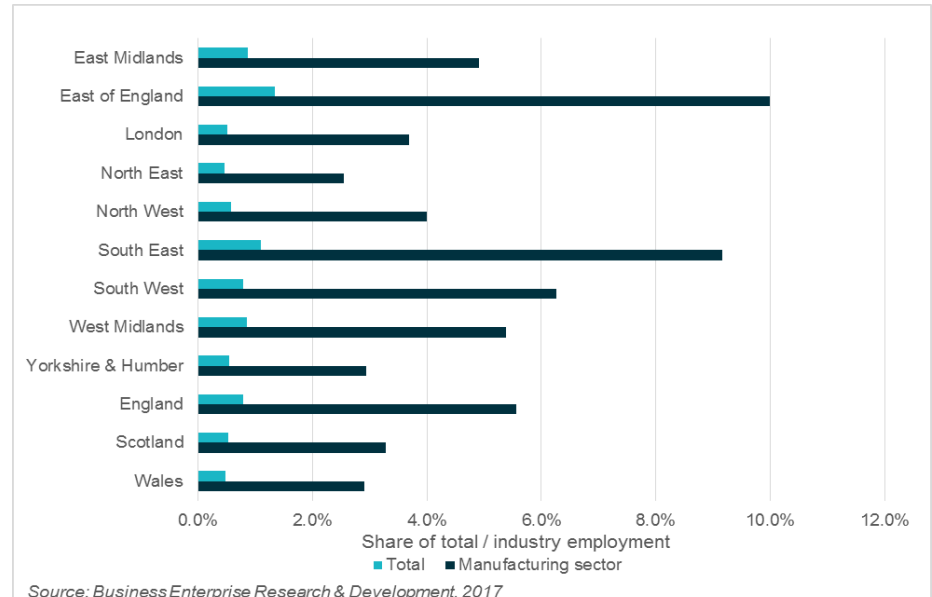
Only 2.9% of manufacturing jobs in the region are in R&D roles, compared to 5.6% across England.

However, the area does have a higher degree of specialism in chemicals - 23% of R&D roles in the region are in chemicals manufacturing, compared to 14% nationally and comparable to the leading region, East of England (24.3%).

13,000 people were employed in research & development roles across all sectors in Yorkshire & Humber in 2017. This equates to approximately 0.5% of all jobs, compared to 0.8% in England as a whole.

The most R&D active regions, South East and East of England have 1.1% and 1.3% of jobs in R&D respectively.

Chart: R&D employment intensity by region

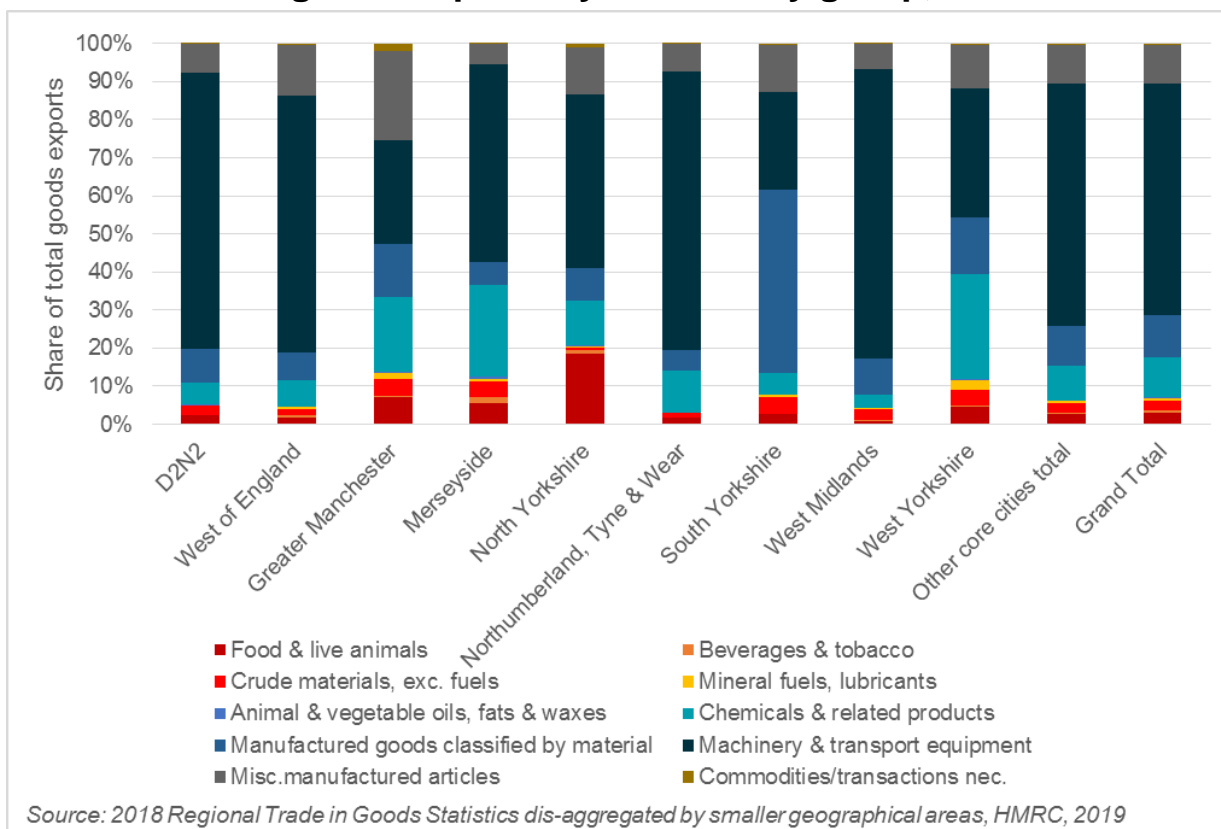


Source: Business Enterprise Research & Development, 2017

Chemicals are also a key export commodity

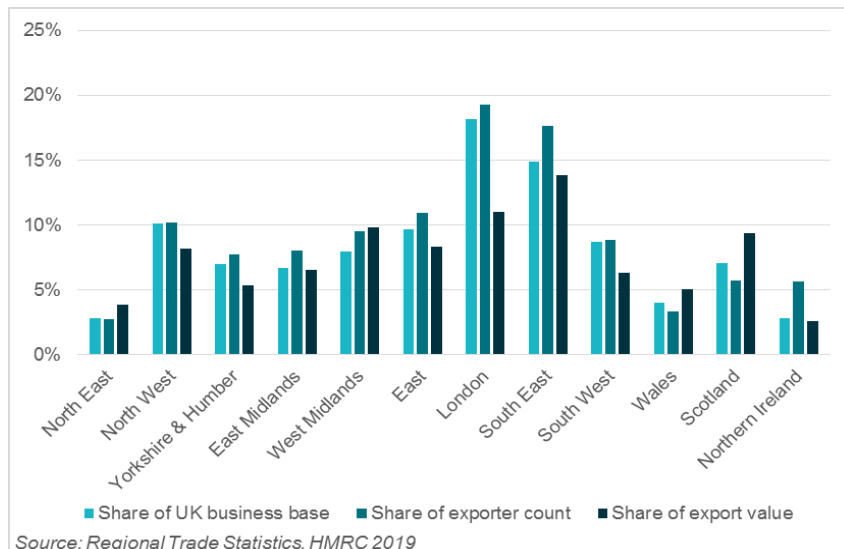
Chemicals accounted for more than a quarter (27.5%) of goods exports by value from West Yorkshire in 2018, a greater share than in any other core city NUTS2 area and three times the average across these comparators. Only transport equipment & machinery accounts for a higher share (34%), though this is half the 70%+ of exports it accounts for in the East Midlands, North East and West Midlands NUTS2 areas.

Chart: Share of goods exports by commodity group, 2018



The region's exporters export less than their counterparts elsewhere

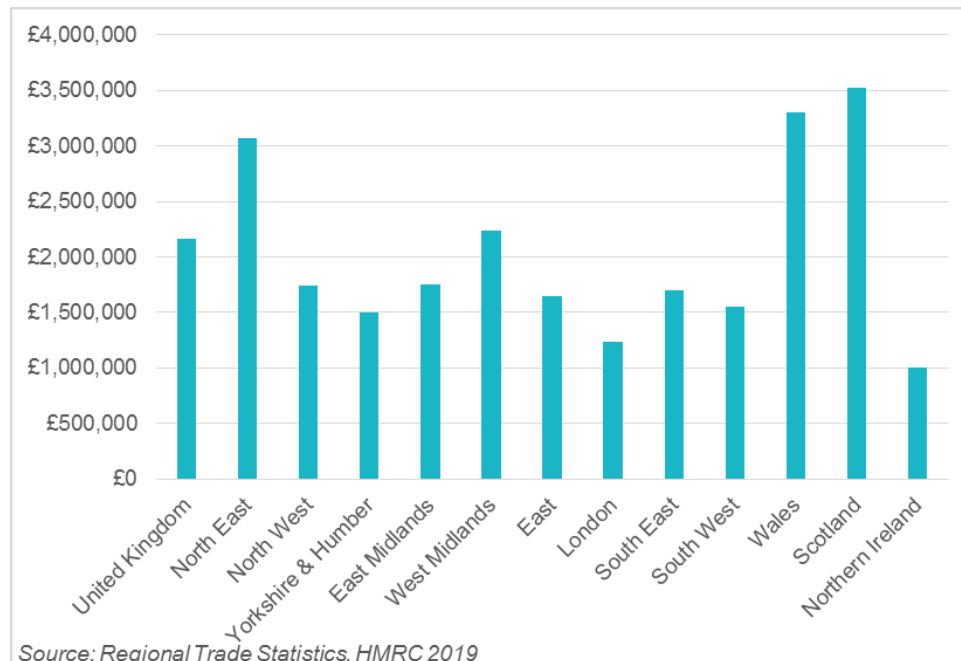
Chart: Share of export activity by region, 2018



On average, Yorkshire & Humber goods exporters exported goods worth £1.49m in 2018, up from £1.25m in 2016. However, the value of goods exports per exporter remains lower in Yorkshire & Humber than other English regions other than London.

The Yorkshire & Humber region accounts for 7.7% of UK goods exporters in 2018, broadly in line with its 7% share of UK businesses. However, whilst the number of exporters has increased by 25% since 2013, it has remained relatively stable since 2016.

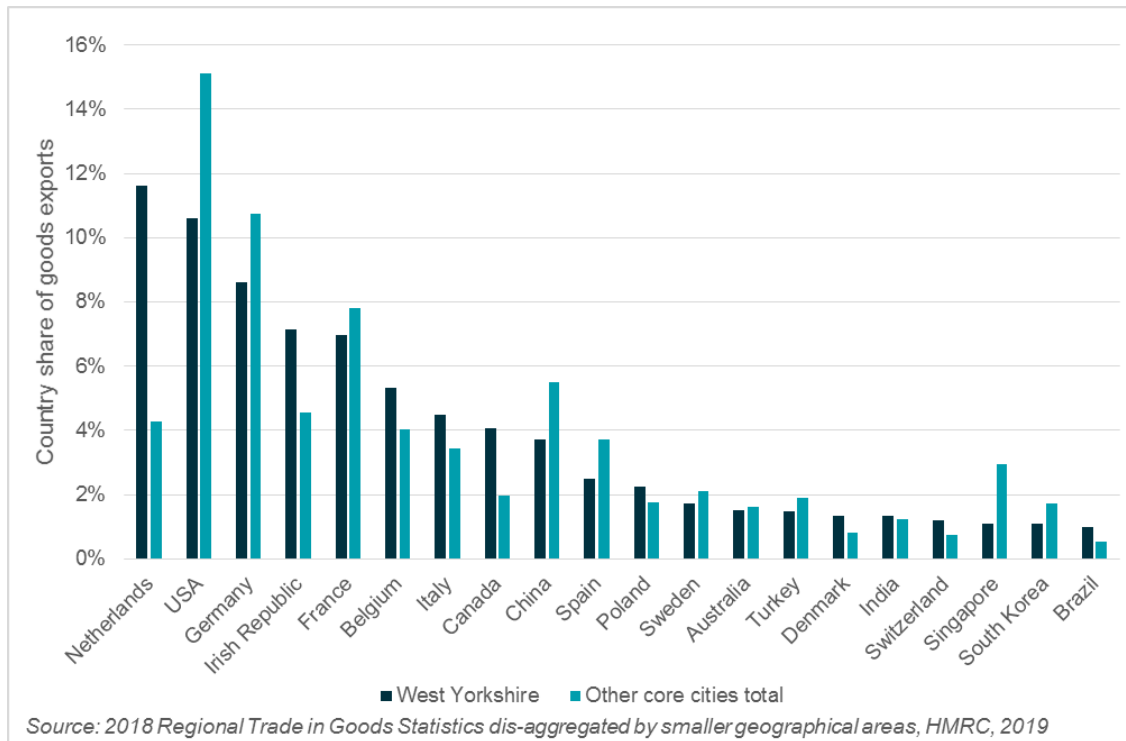
Chart: Value of exports per exporter, 2018



EU countries remain West Yorkshire's key trading partners

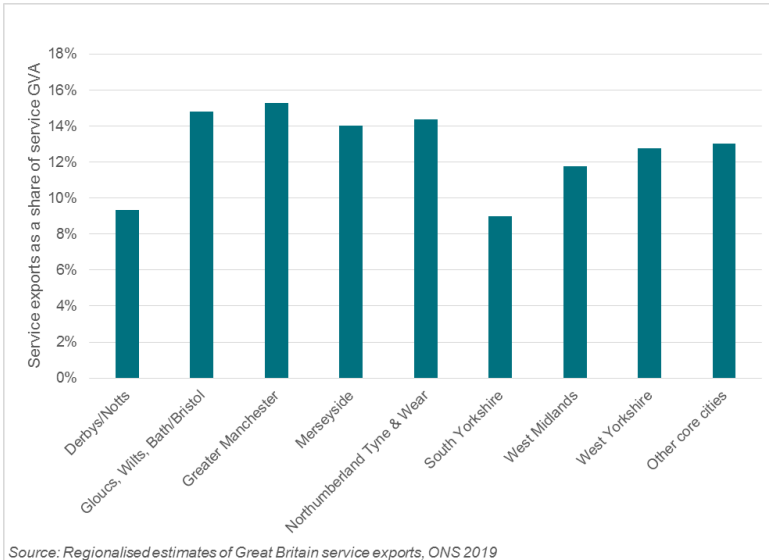
In total, West Yorkshire exported goods worth £6.17bn in 2018. 4,800 businesses exported to EU markets, and 3,500 exported to non-EU markets. The Netherlands was the destination for the highest share of this, accounting for 11.6% of goods exports – almost three times the average of other core city areas and replacing the US as the area's largest single nation trading partner from 2017. 10.6% of West Yorkshire goods headed to the US compared to 15% across other core city areas and over 20% in the West Midlands. West Yorkshire is similarly underexposed to other key markets such as China, Germany and Singapore, though has a higher share of trade with Ireland and Canada.

Chart: Top 20 goods export destinations, 2018



Service sector exports account for 13% of GVA

Chart: Service exports as a share of GVA, 2017

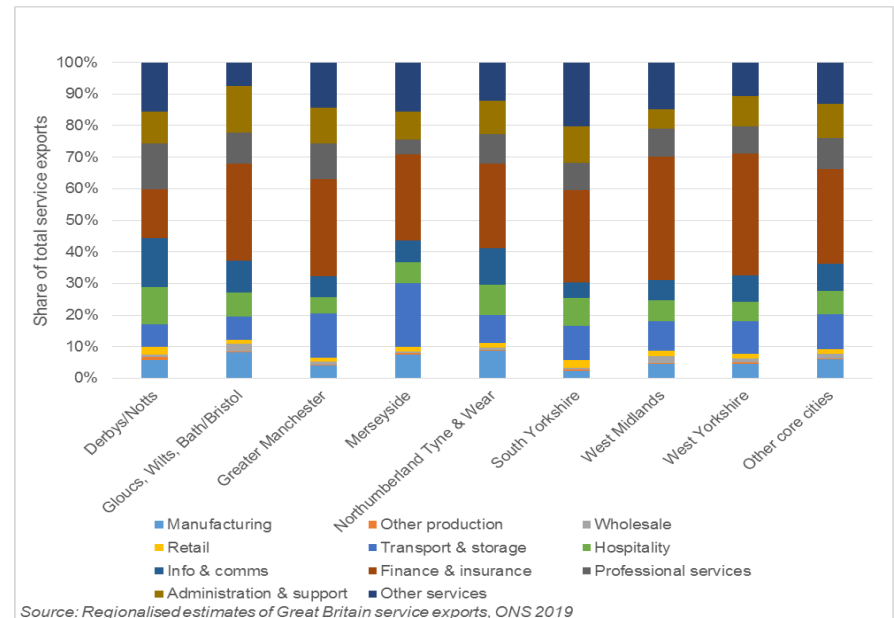


The value of service exports West Yorkshire was £5.2bn in 2017. This is substantially more than some core city NUTS2 areas such as South Yorkshire (£1.8bn) but below the Manchester and Bristol areas (c.£8bn)

Service exports accounted for 12.8% of services GVA, in line with the 13% averaged across other core city NUTS2 areas.

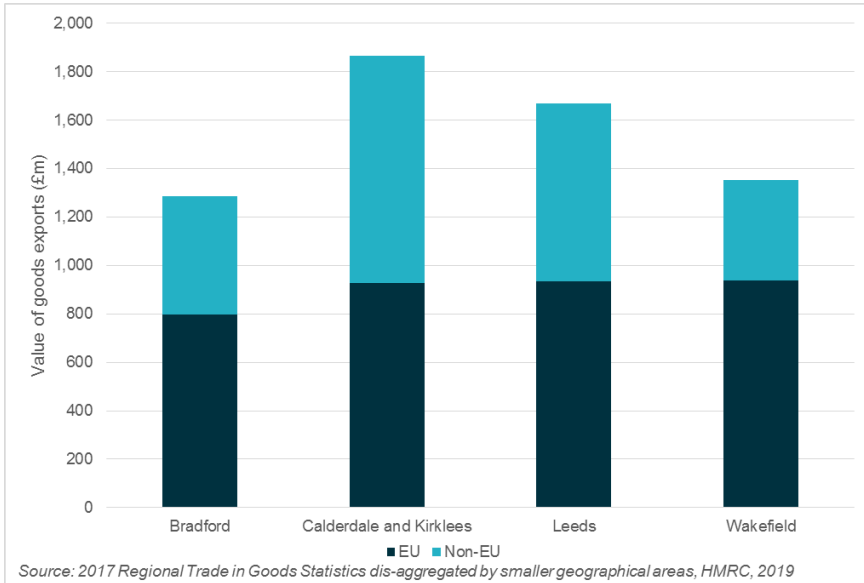
Financial services accounted for 38.7% of West Yorkshire's service exports in 2017, significantly higher than the average of 30% across comparators and similar only to the West Midlands (39.1%).

Chart: service exports by industry, 2017



The EU is the major market for goods, but non-EU markets dominate for services

Chart: Goods exports by destination, 2018



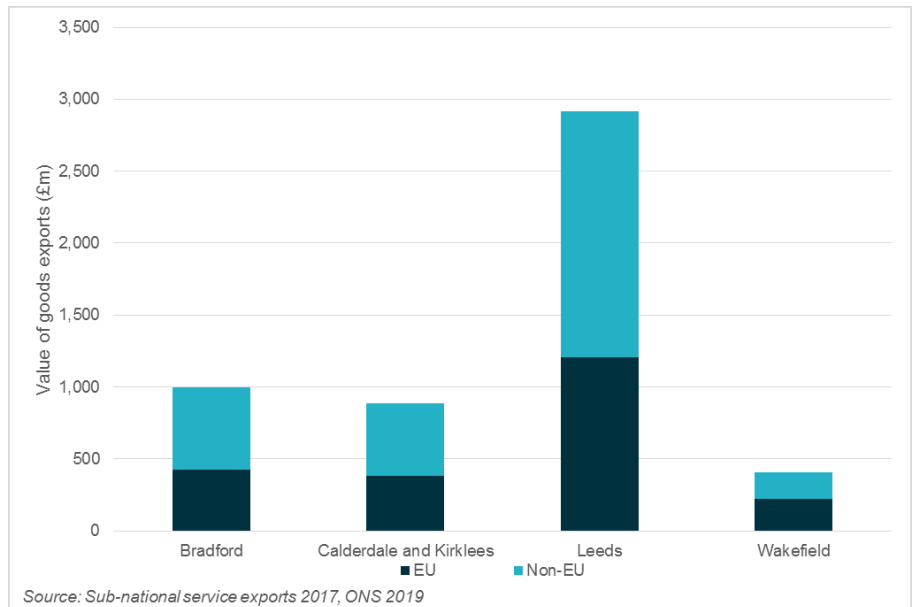
Whilst goods exports are relatively dispersed across West Yorkshire districts, Leeds dominates service exports, accounting for 56% of activity with service exports of £2.9bn in 2017.

Service exports are more likely to head beyond the EU, with 57% of trade heading to the rest of the world. Wakefield is the only district where EU trade outweighs non-EU on services.

Within West Yorkshire, the value of goods exports outweighs services exports in all areas except Leeds. Trade destinations do vary, however.

On goods exports, 58% of West Yorkshire's trade is with the EU, though this increases to 69% in Wakefield and 62% in Bradford, but is split 50-50 in Kirklees and Calderdale.

Chart: Service exports by destination, 2017



Ideas - conclusions

- The area has an internationally significant concentration of higher education institutions, and these HEIs help the area perform well on higher education innovation and R&D spend. However, this does not seem to translate into similar performance among the area's business base.
- Whilst surveys suggest the region's businesses are engaged in innovation activity, data on investment suggests that this is not at levels seen in other regions.
- This suggests there is potential to increase both the number of businesses innovating, and the level/intensity of innovation within businesses who are innovation active.
- Similarly on exports, HMRC data suggests the number of businesses in our region is not particularly low, but the value and volume of exports from our region is below that seen in other areas.
- Our relatively low trade with key non-EU markets such as the US and China suggests there may be an opportunity to encourage new and existing exporters into markets further afield, which evidence suggests delivers a greater productivity gain.
- On both R&D and exports, the chemicals sector is a key driver of activity in West Yorkshire.

Place

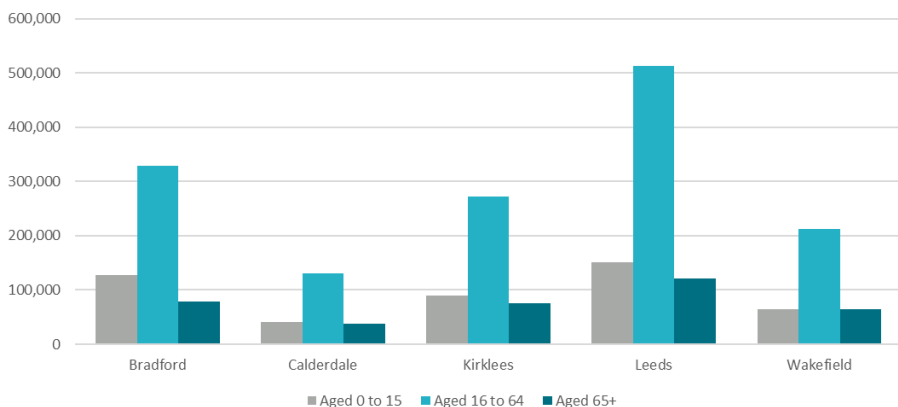
Place – key messages

- **2.3 million people live within West Yorkshire** (with one third living in Leeds) and its population is set to grow by 178k in the next 21 years.
- West Yorkshire has a diverse population; 18.2% of the population are Black, Asian, Minority Ethnic (BAME), compared to 14.6% in England.
- More than **1 in 5 people** (22% or almost 517k) **live in areas defined as being amongst the most deprived 10% in England**. Relative levels of deprivation in West Yorkshire have got worse (between 2015 & 2019) and there is considerable spatial variation of deprivation.
- **13% of households in West Yorkshire are in fuel poverty.**
- People born in Yorkshire and the Humber have significantly shorter life expectancies compared to England average. The **social gradient in life expectancy is steeper in Yorkshire and the Humber**; people who live in more deprived neighbours have shorter lives than those in less deprived areas and the difference is more pronounced here compared to the England average.
- **Culture in Yorkshire and the Humber contributed an estimated £565 million per year to the economy** between 2010 and 2017. West Yorkshire has some important cultural assets attracting millions of visitors; The Piece Hall alone attracted 5 million visitors since reopening in 2017.

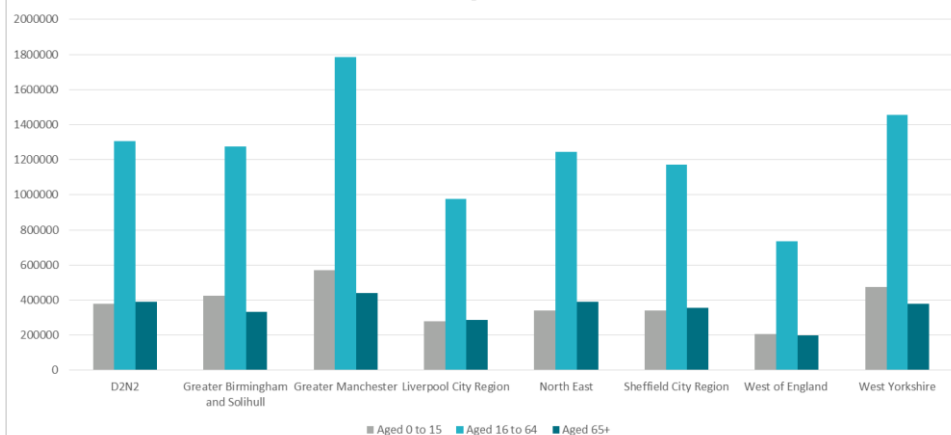
West Yorkshire has a population of 2.3m with a workforce of 1.45m

- West Yorkshire has a population of 2.3 million people (with one third living in Leeds, with a working age population (16-64 years) of 1.45 million, making it the second **largest working population out of our comparator LEP areas**.
- West Yorkshire covers **1.6% of the land area of England** and has a mean population density of 11 persons per hectare, which is low compared to other areas (Greater Manchester and London have a population densities of 21 and 52 persons per hectare respectively).
- The **dependency ratio** in West Yorkshire has been **lower than the national ratio** since 2004. The dependency is projected to increase from 58% to 69% by 2041, and this **means there will be a relatively smaller working age population supporting a larger dependent population**.

Age Split for West Yorkshire Districts



LEP Age Profile



Size of functional labour markets

Using travel to work areas (self-contained areas in which most people both live and work) as a proxy for functional labour markets, Leeds ranks 5th in England and Wales when ordered by the proportion of the population of working age (and ranks 11th by total population)

Travel to Work Area	Total Population *	Population Rank	Working age population (16 to 64 years)	% Working age	Working age rank
Brighton	351,688	49	242,237	68.9	1
London	8,738,789	1	5,874,696	67.2	2
Bristol	870,577	9	566,675	65.1	3
Nottingham	846,658	10	548,836	64.8	4
Leeds	826,022	11	535,310	64.8	5
Bath	183,162	85	118,699	64.8	6
Coventry	657,717	19	423,604	64.4	7
Cardiff	795,229	13	511,096	64.3	8
Liverpool	1,018,874	6	654,238	64.2	9
Sheffield	873,533	8	559,647	64.1	10

The bottom table reveals the population and ranks for all the defined travel to work areas in West Yorkshire. There are 173 defined travel to work areas in England and Wales.

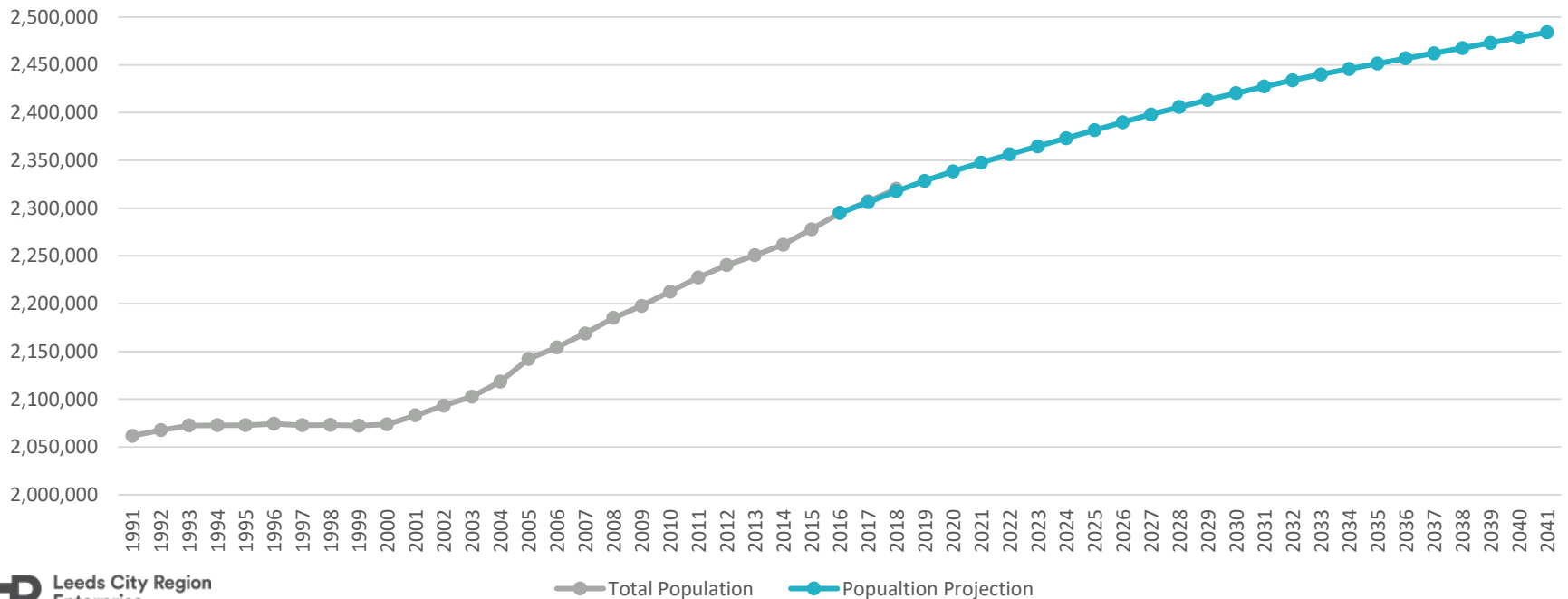
Travel to Work Area	Total Population	Population Rank	Working age population (16 to 64 years)	% Working age	Working age rank
Leeds	826,022	11	535,310	64.8	5
Huddersfield	386,727	41	240,615	62.2	34
Wakefield and Castleford	352,385	48	218,666	62.1	40
Halifax	210,082	76	129,922	61.8	46
Bradford	544,981	27	336,603	61.8	51

Between now and 2041 the population is estimated to grow by almost 178k

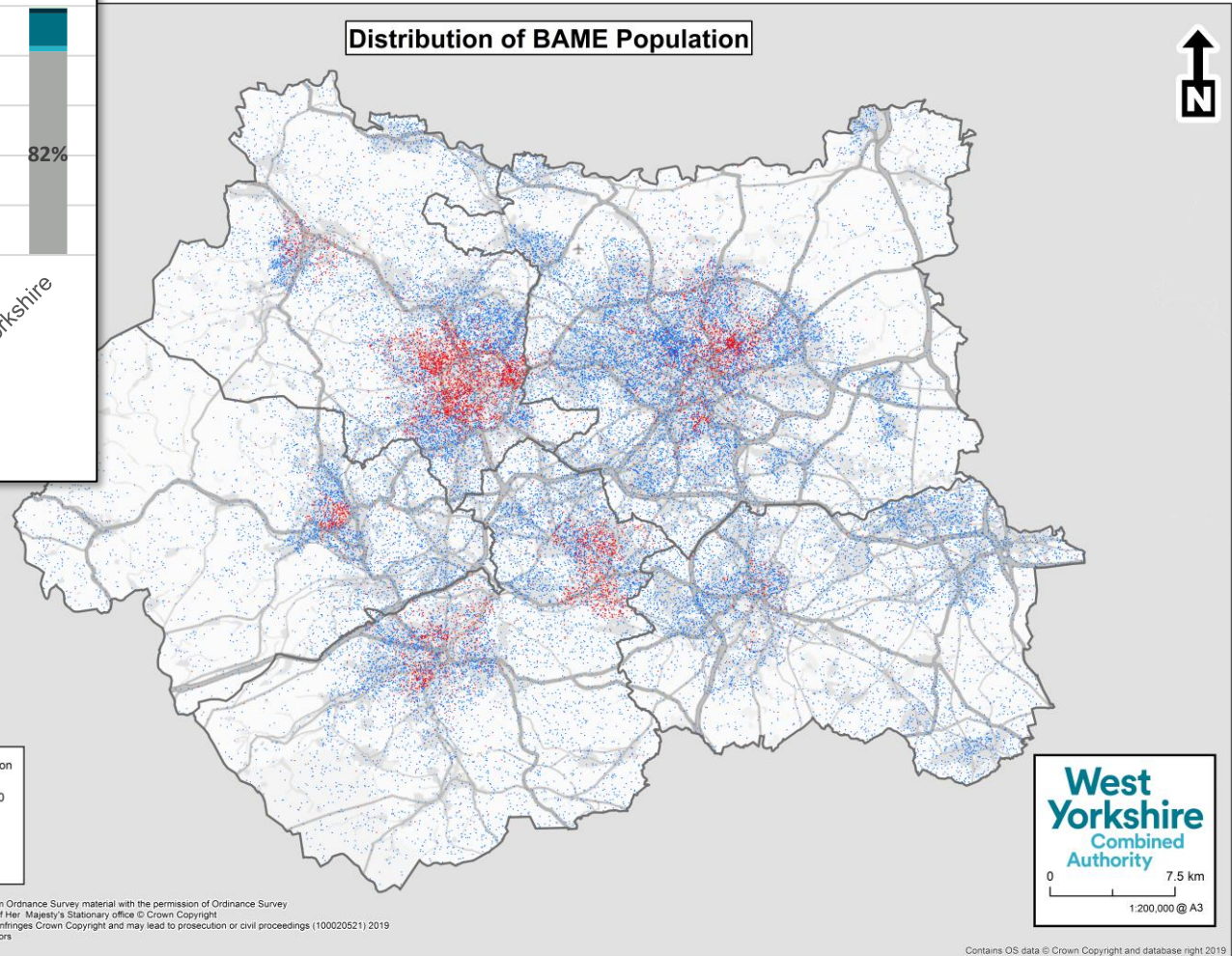
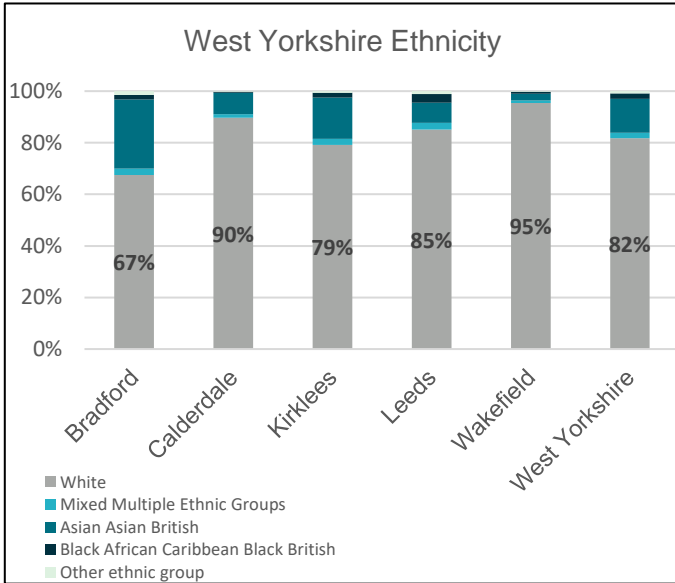
Between 1991 and 2017 the population of West Yorkshire grew by 13%, and population growth between 1991 and 2041 is predicted to be 20%.

In 2041 the population of West Yorkshire is estimated to be over 2.4 million. From 2018 to 2041 the population of West Yorkshire is predicted to increase by 8.2%. The largest year on year growth was between 2004 and 2005 when the population grew by 1.13%.

West Yorkshire Population Growth and Projections



West Yorkshire has a diverse population

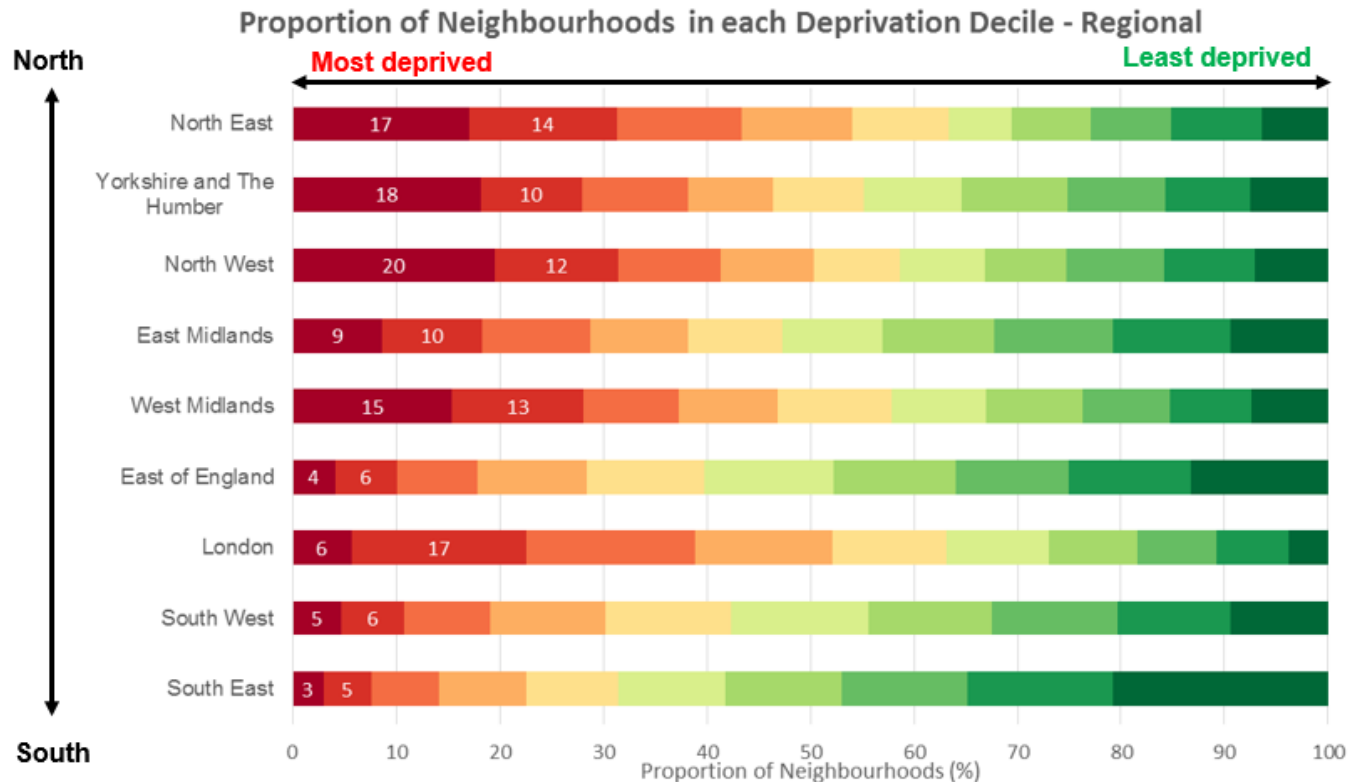


18.2% of the population of West Yorkshire is Black, Asian, Minority Ethnic

In Bradford the second largest ethnic group is Asian/British Asian, at 26.8% (more than double the national average)

The North-South deprivation divide

The Indices of Deprivation (IMD) 2019 provide an official set of relative measures of deprivation for small areas across England. The indices are based on 37 separate indicators, organised across seven distinct domains, including; income; employment; education, skills and training; health; crime; barriers to housing and services and the living environment. Comparing the proportion of neighbourhoods in each deprivation decile in each region illustrates the north-south deprivation divide.



How does deprivation vary by LEP area?

There are concentrations of deprivation in large urban conurbations, areas that have historically had large heavy industry, manufacturing and/or mining sectors, coastal towns, and large parts of east London.

One method of highlighting relative differences in deprivation at higher level geographies is to examine the proportion of neighbourhoods in the most deprived 10% nationally and then rank them in relation to other higher level geographies (e.g. LEPs).

LEP	Rank of proportion of neighbourhoods in most deprived 10% nationally
Liverpool City Region	1
Greater Birmingham and Solihull	3
Greater Manchester	4
Humber	5
Sheffield City Region	8
Leeds City Region	9
North East	10
D2N2	12
West of England	15
York, North Yorkshire and East Riding	26

So out of the 38 LEPs, Leeds City Region ranks 9th whereas York and North East Yorkshire ranks 26th.

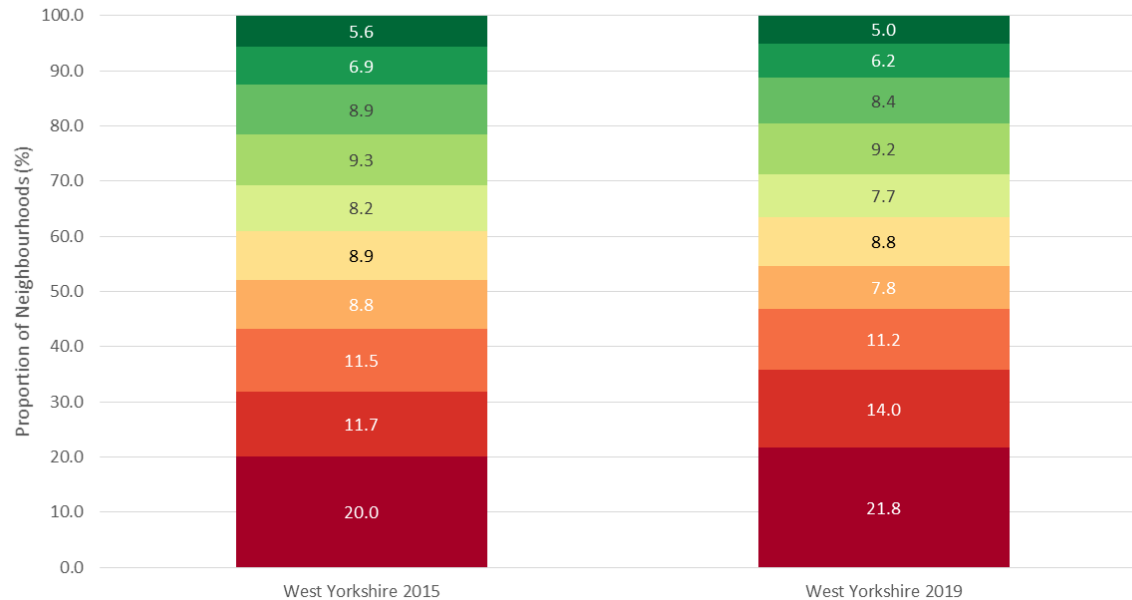
For comparison, Liverpool City Region ranks as the most deprived (1st) and Buckinghamshire Thames Valley and Enterprise M3 ranks as the least deprived (37th equal).

Source: Data from Ministry of Housing, Communities and Local Government (MHCLG)

Deprivation change between 2015-2019

West Yorkshire now (in 2019) has 24 (+1.8%) more neighbourhoods fall into the most deprived decile (10%) compared to the 2015 results. When considering the most deprived quintile (20%), West Yorkshire now has 55 (+4%) more neighbourhoods fall into this category.

Proportion of Neighbourhoods in each Deprivation Decile - West Yorkshire



Between IMD 2015 and 2019, Bradford, Kirklees and Leeds contribute the largest increase in the number of neighbourhoods in West Yorkshire that now fall into the most deprived areas in England. In contrast to the trend of growth in relative deprivation, Leeds has one neighbourhood that has improved by three deciles, one of only thirteen areas in England to do, eight of which are in Westminster.

There is considerable spatial inequality

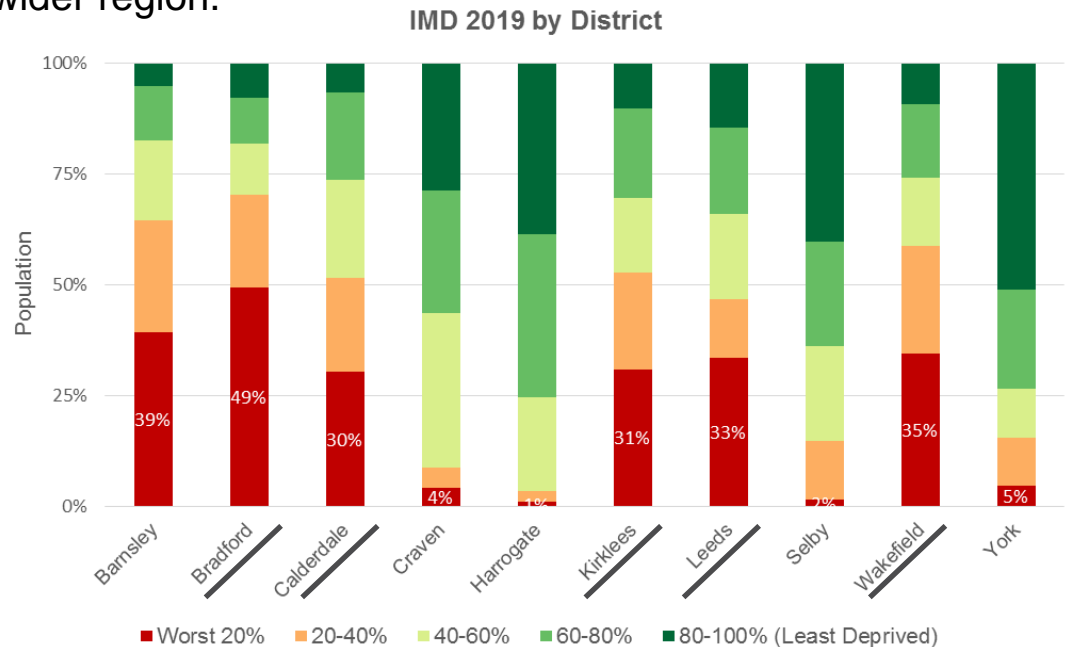
At district level, there are stark differences; almost half of the population in Bradford live in areas defined as being amongst the most deprived 20% in England and in contrast more than half of the population of York live in areas defined as being amongst the least deprived 20% in England.

The chart below illustrates differences in proportion of the population in each deprivation quintile in West Yorkshire (underlined) and the wider region.

In West Yorkshire...



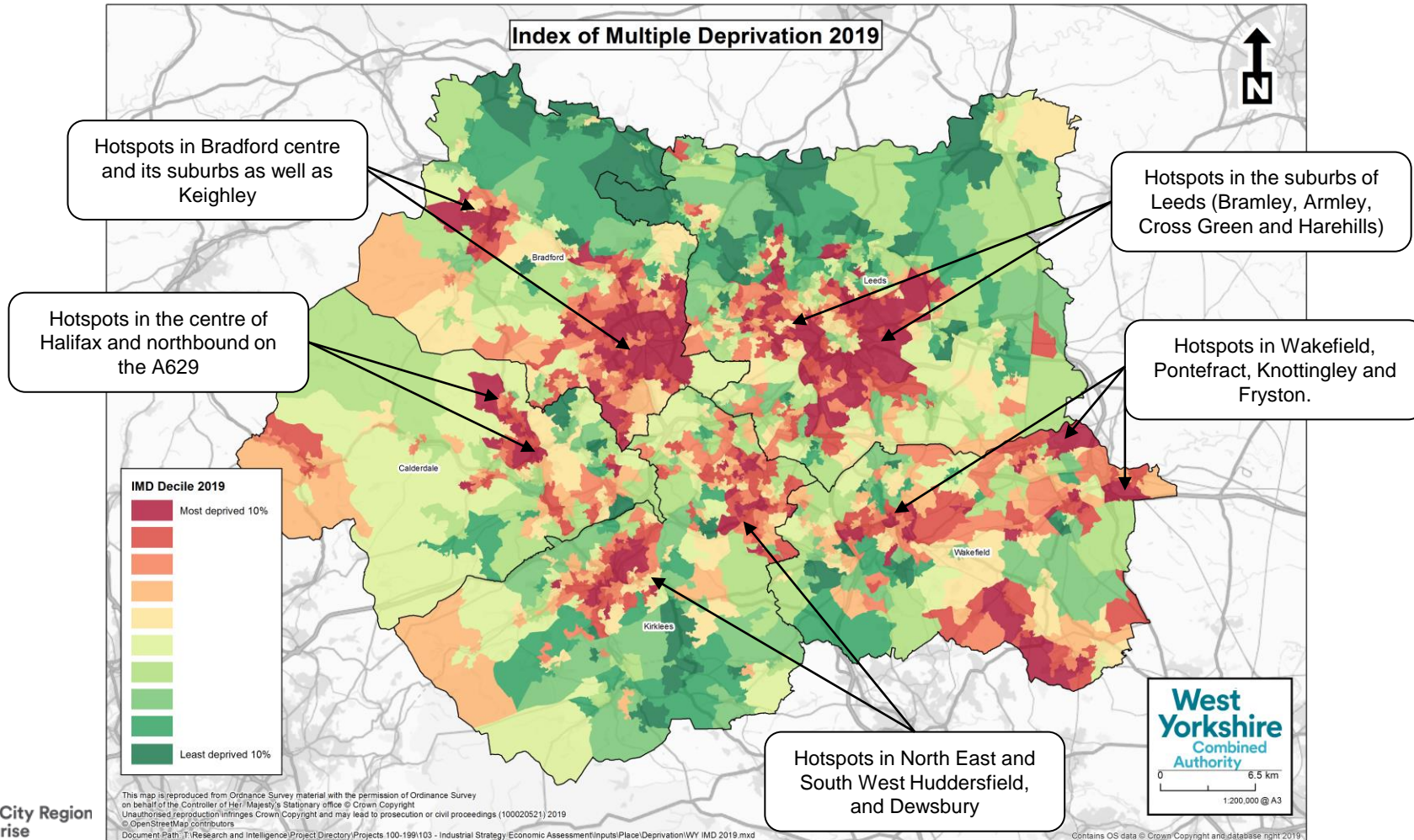
...more than 1 in 5 people (22% or almost 517k) live in areas defined as being amongst the most deprived 10% in England.



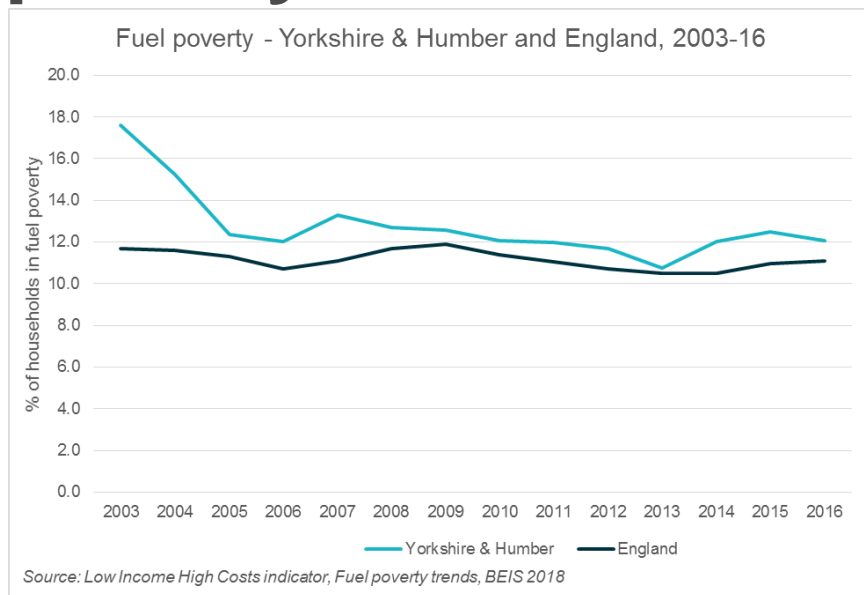
Of most deprived 10% of neighbourhoods in England (3,284), 137 rank as highly deprived on 6 of the 7 domains of deprivation. West Yorkshire has 26 of these neighbourhoods; Leeds has 13, Bradford has 11 and Calderdale has 2.

There are hotspots of deprivation

The map below shows the considerable spatial variation of deprivation across West Yorkshire.



The proportion of households in fuel poverty is above national average

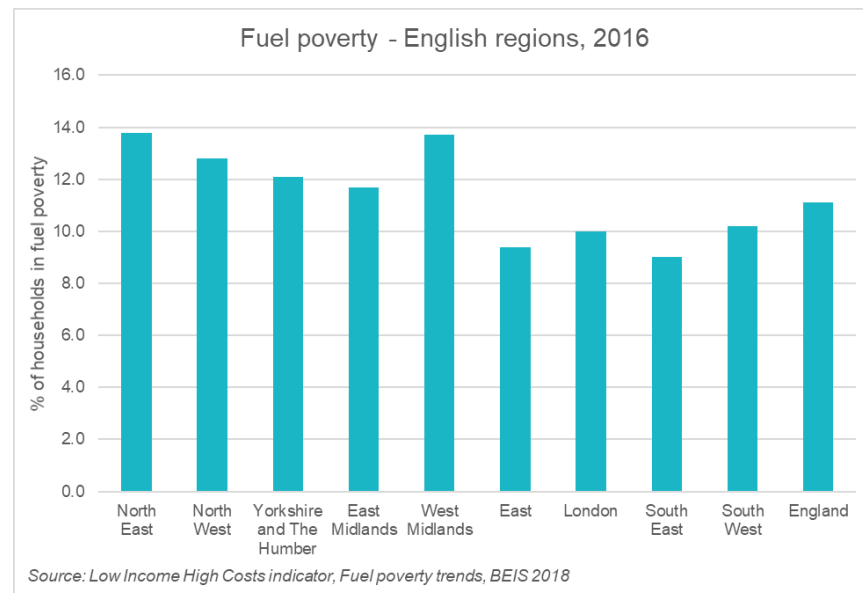


At regional level the proportion of households in fuel poverty was falling gradually until 2013 since when there has been a slight increase. Just over 12% of households in Yorkshire are in fuel poverty, compared to 11% nationally. This trend has been relatively consistent over the past decade.

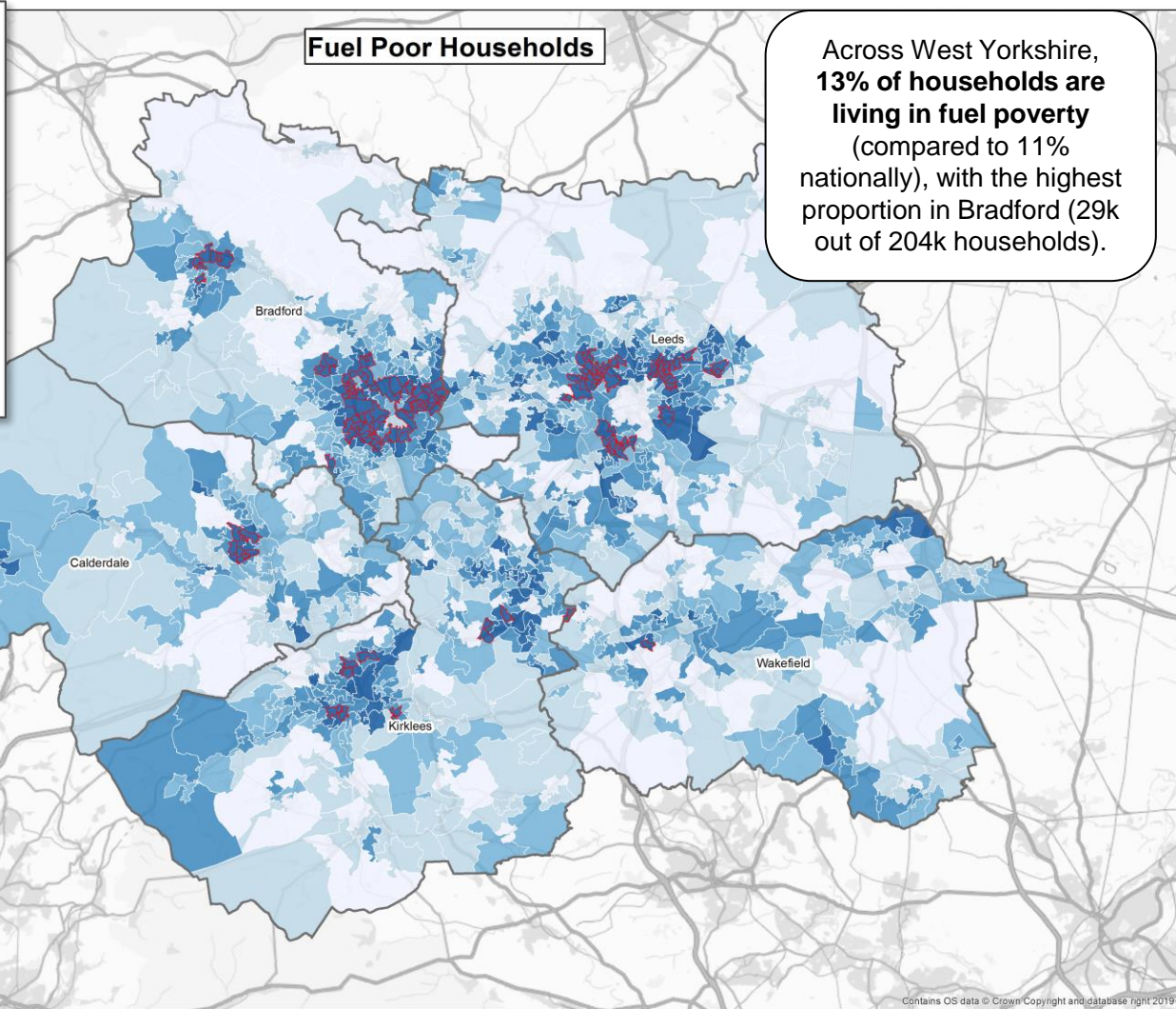
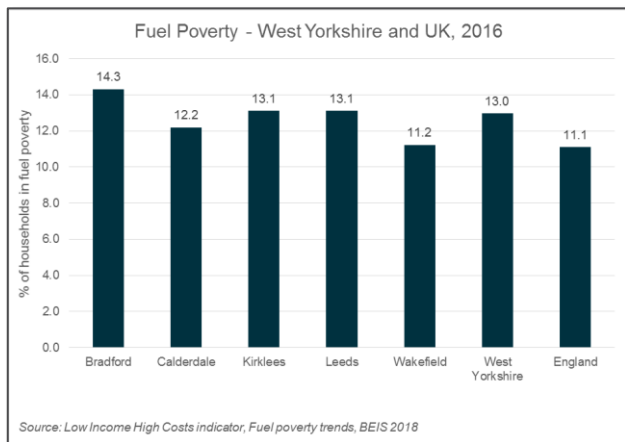
Yorkshire's fuel poverty rate is lower than other northern regions, with the rate close to 14% in the North East and West Midlands.

Under the "Low Income, High Cost" measure, households are considered to be fuel poor where:

1. They have required fuel costs that are above average (the national median level)
2. Were they to spend that amount, they would be left with a residual income below the official fuel poverty line.



West Yorkshire districts have above average levels of fuel poverty



Health has a considerable economic cost

- The health of the population is affected by a range of factors including the prevalence of specific conditions (both physical and mental), their behaviours and lifestyle (e.g. food, physical activity, smoking and alcohol use) as well as wider factors such as housing, income, skills, poverty, social cohesion and transport.
- There is growing evidence that problems related to modifiable health behaviour are becoming more prevalent, driven by a lack of physical activity, by smoking, or by a rise in obesity levels in the wider population¹. This creates economic costs not only to society at large but also, more specifically, to businesses in the form of lost productivity².
- The 2010 Marmot review³ highlights that action taken to reduce health inequalities will have economic benefits. Currently illness from health inequalities leads to productivity losses, reduced tax revenue, higher welfare payments and increased treatment costs.

1. Goetzel et al., (2012). *Ten modifiable health risk factors are linked to more than one-fifth of employer-employee health care spending.* *Health Aff. (Millwood)* 31, 2474–2484.

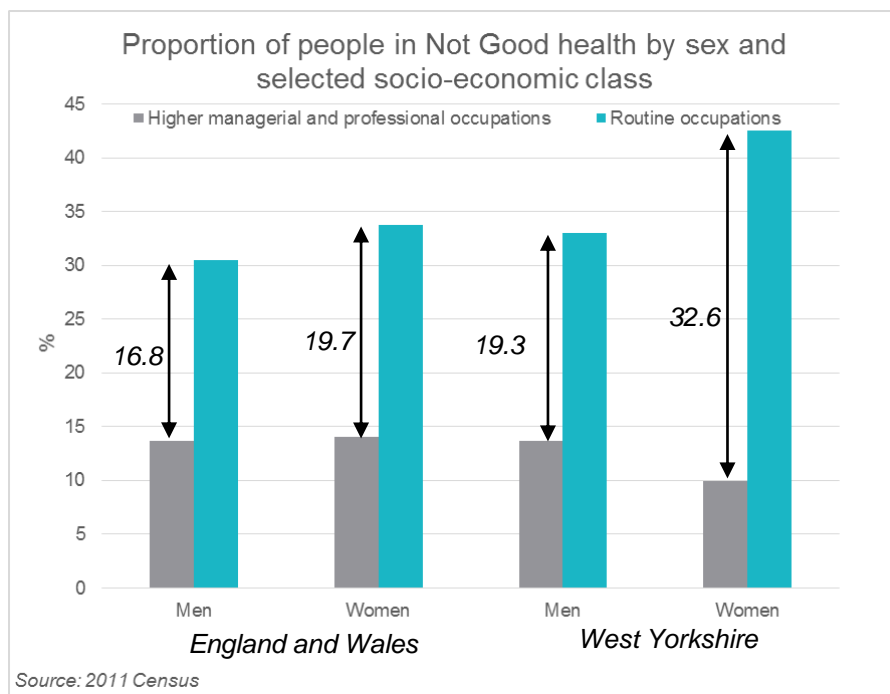
2. Hafner et al., (2015). *Health, Wellbeing and productivity in the workplace. A Britain's Healthiest Company Summary Report.*

3. Marmot et al., (2010). *The Marmot Review. Fair Society, Healthy Lives. Strategic Review of Health Inequalities in England.*

People working in routine occupations are more likely to be in poorer health

The 2011 Census asked people to describe their general health and in England, 81.4% of people reported being in good or very good health. The results highlighted the substantial inequalities in health by: gender, ethnicity, socio-economic position, and area.

In England and Wales, people working in routine occupations¹ were more than twice as likely to report 'Not Good' health than people working in higher managerial and professional occupations² for both males (30.5% compared with 13.7%) and females (33.8% compared with 14.1%).



This pattern is more extreme within West Yorkshire as illustrated in the chart (right). In West Yorkshire, women working in routine occupations¹ were four times as likely to report 'Not Good' health than those working in higher managerial and professional occupations².

Other trends are also apparent:

- people living in overcrowded houses were in worse health.
- people living in more deprived areas reported poorer health than people living in areas with less deprivation.

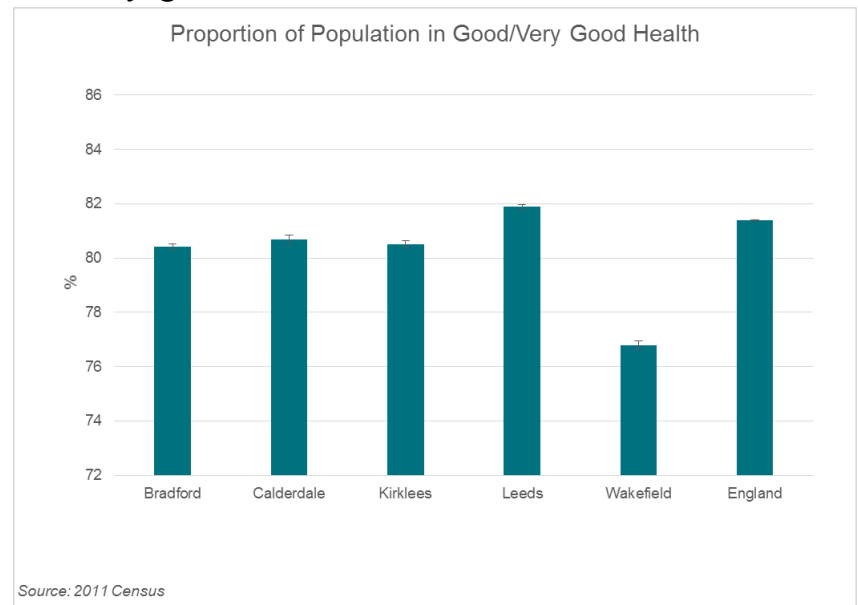
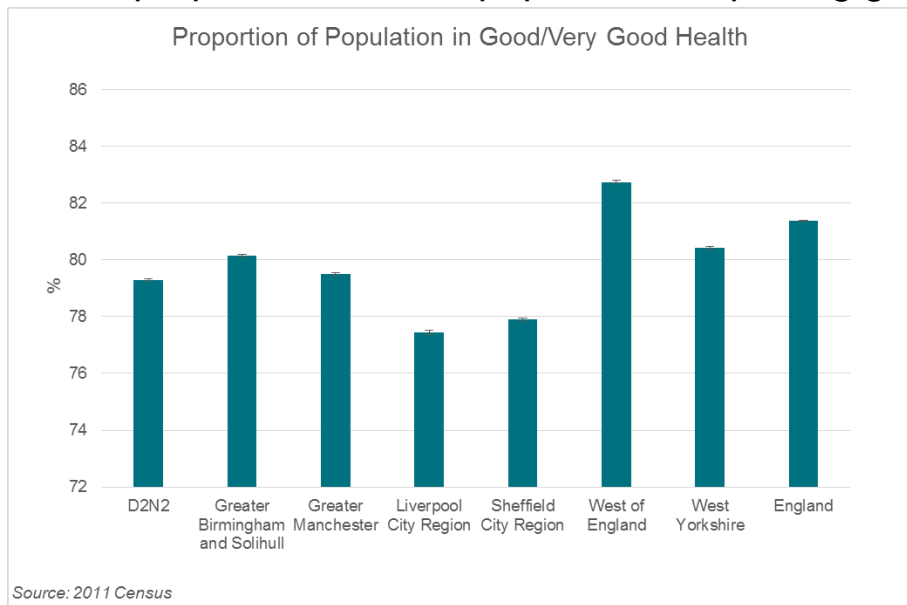
1. Routine occupations are generally semi-skilled or unskilled and are among the lowest paid. Examples of jobs include bar staff, cleaners and labourers.

2. Managerial and professional occupations often require extensive qualifications and are generally the highest paid. Examples of jobs include lawyers, architects and medical doctors.

West Yorkshire has significantly lower proportion of people in 'good health'

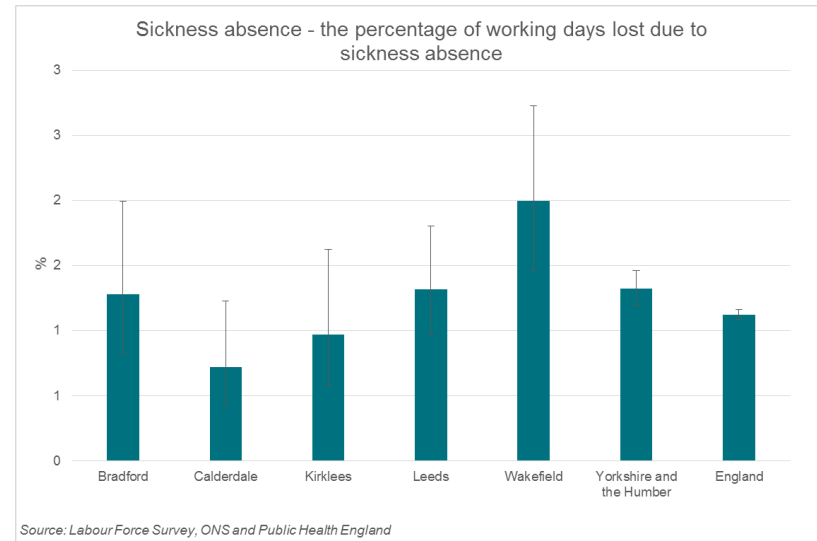
In relation to comparator LEPs, West Yorkshire is close to, but still statistically *significantly* lower than the England average; 80.4% of the population of the West Yorkshire reported to be in good or very good health.

Within West Yorkshire, there are considerable differences in self-reported health. A *significantly* higher proportion of the population of Leeds reported good or very good health (compared to the England average). In contrast, Bradford, Calderdale, Kirklees and Wakefield have *significantly* lower proportions of their populations reporting good or very good health.



Sickness absence impacts productivity and the rate in Yorkshire & the Humber is greater than the England average

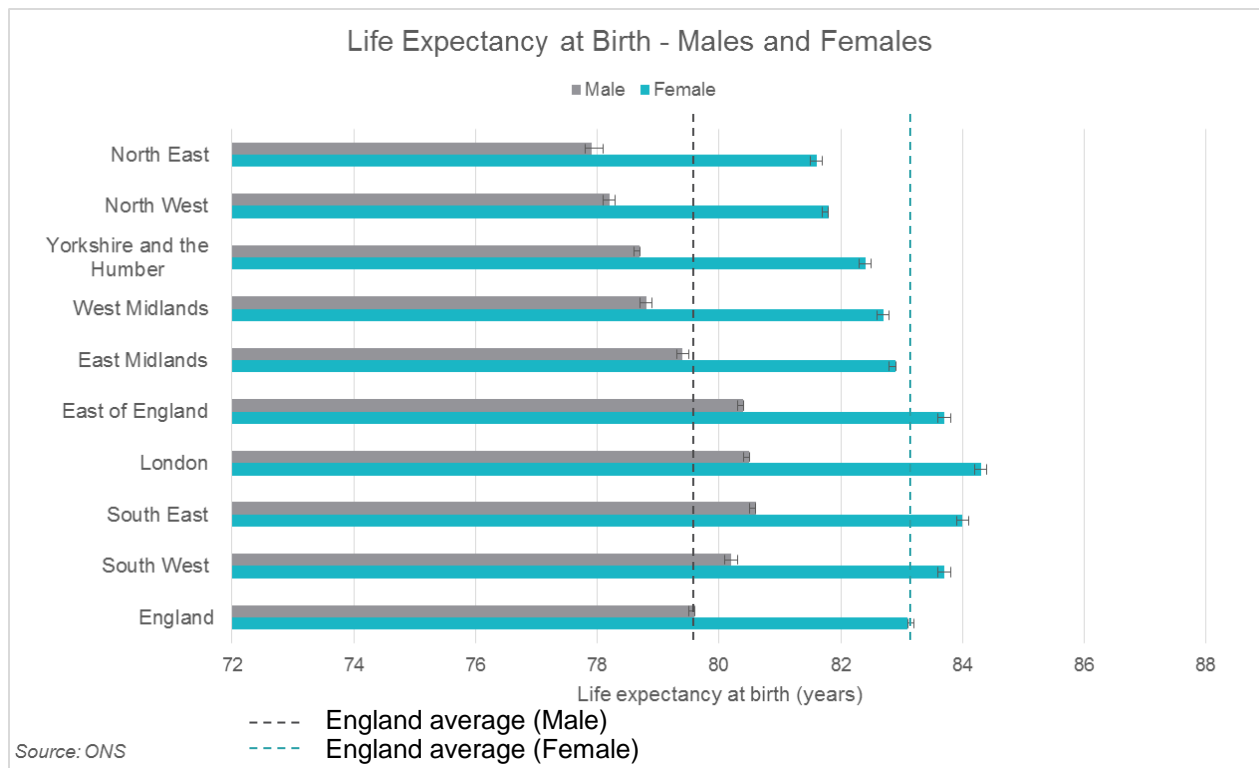
- Every year 140 million working days are lost to sickness absence, much of which ends in a swift return to work¹. However, since 2003, there has been a general decline in the number of days lost to sickness absence, particularly during the economic downturn. Sickness absence fell to a low of 131.7 million days in 2013 but there have been increases in recent years².
- There is a significant cost associated with sickness absence, employers pay £9 billion a year in sick pay and associated costs, and the state spends £13 billion annually on health-related benefits¹. Although sickness absenteeism directly affects an organisations labour costs, it also imposes losses on productivity. If firms choose not to resort to overtime or temporary substitute workers, they experience a loss of output at least equal to the output produced by absent workers³. This output loss is amplified if absent workers perform roles which are highly interconnected with the work of other employees.
- The rate of sickness absence (percentage of working days lost due to sickness) in Yorkshire and the Humber was 1.3% in 2015-17; significantly higher than the England average (1.1%). Only the North East has a higher rate (1.5%). Within West Yorkshire, only Wakefield (2%) has a significantly higher rate of sickness absence compared to the England average. Note the large confidence intervals associated with this data.



Error bars denote 95% confidence intervals.

People born in Yorkshire & the Humber have significantly lower life expectancies in relation to the England average

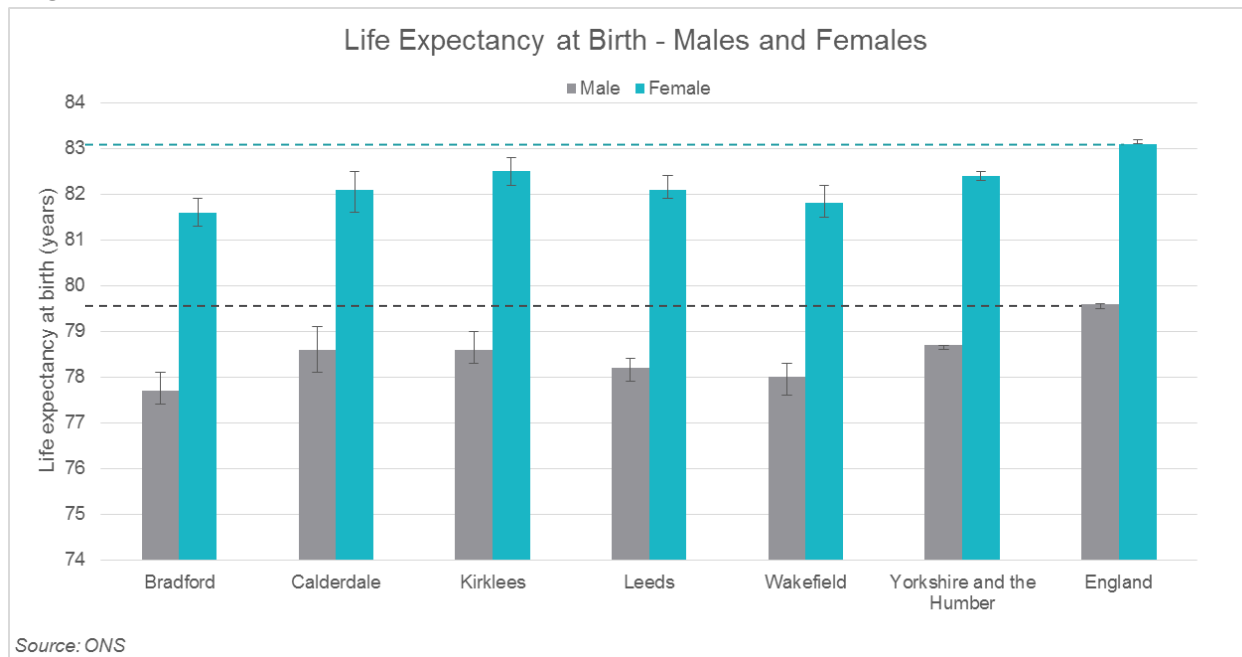
The North-South divide is clearly illustrated when considering life expectancy at birth. Children born between 2015-2017 (the most recent data) in Yorkshire and the Humber have *significantly* lower life expectancies in relation to the England average. In England life expectancy is lowest in the North East and highest in London.



Life expectancy for both males and females increased year on year between 2001/03 to 2012/14 but has since levelled out and in Yorkshire and the Humber is 78.7 years for boys and 82.4 years for girls.

There is local inequality in life expectancy

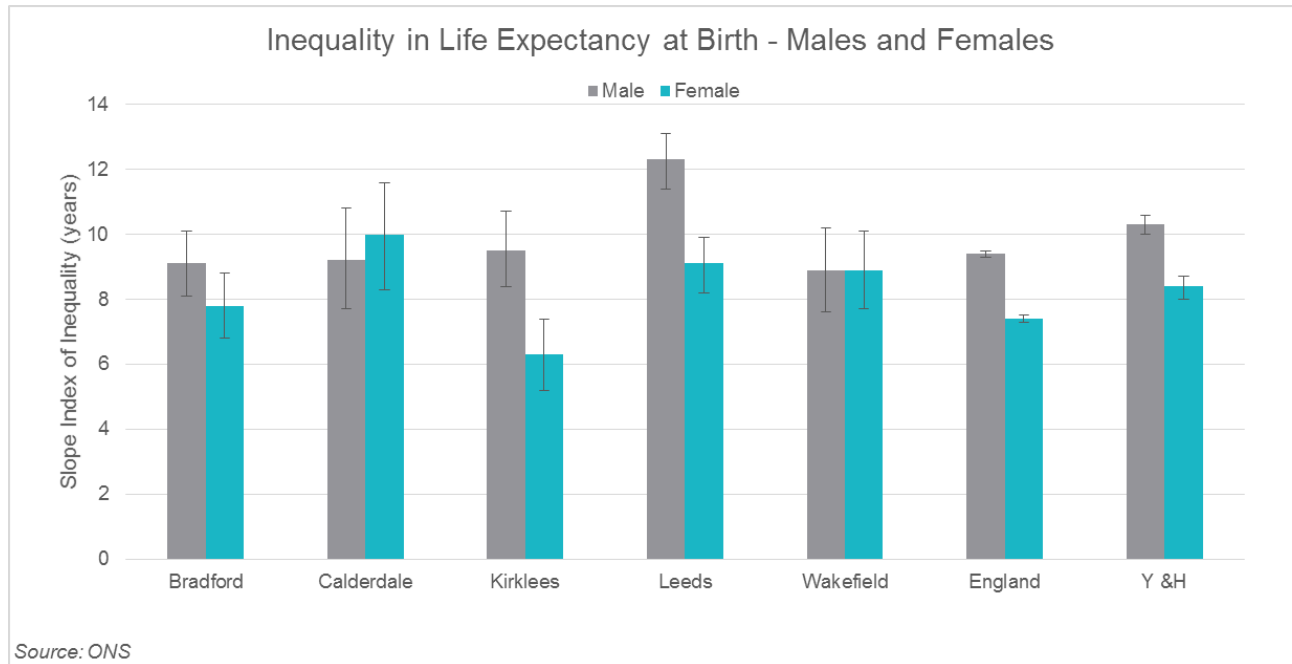
All districts within West Yorkshire have *significantly lower* life expectancies in relation to the England average.



Within Yorkshire and the Humber there is considerable inequality in life expectancy. A boy and a girl born between 2015-17 in Hambleton are expected to live 3.9 and 3.5 years longer than a boy and girl born at the same time in Bradford. As life expectancy strongly correlates with deprivation, this inequality gap widens when smaller geographies are considered.

The social gradient in life expectancy is steeper in Yorkshire & the Humber

Inequality in life expectancy is estimated using a summary measure called the slope index of inequality (SII). The higher the value of the SII, the greater the inequality within an area. Life expectancy at birth is calculated for each deprivation decile of lower super output areas within each area and then SII is calculated based on these figures. The SII is a measure of the social gradient in life expectancy, i.e. how much life expectancy varies with deprivation.



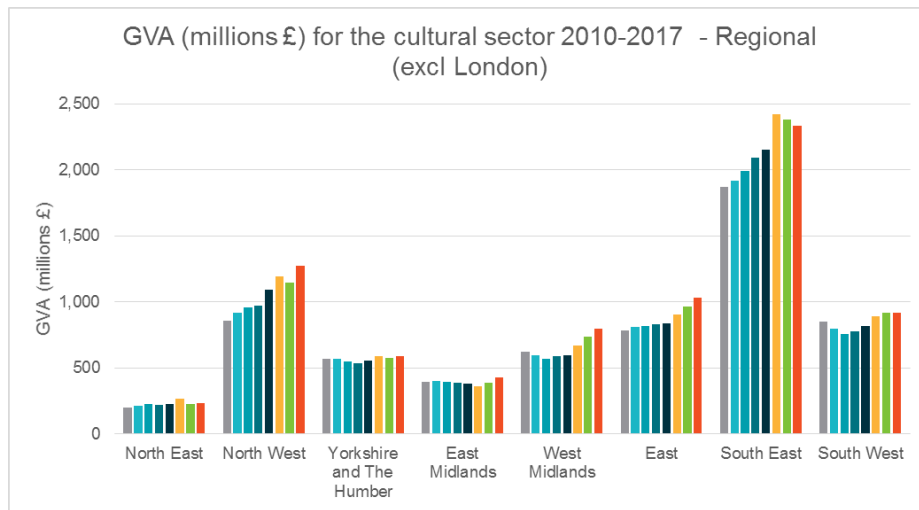
SII in Yorkshire and the Humber is significantly higher than the England average for both males and females, indicating greater inequality. The chart on the left highlights how SII varies within West Yorkshire.

Error bars denote 95% confidence intervals.

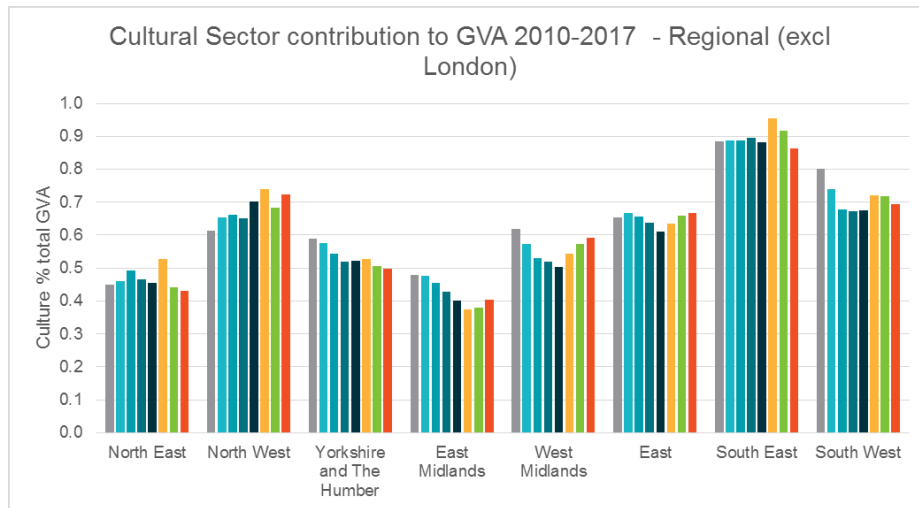
A strong cultural offer is important

- In 2017, arts and culture contributed an estimated £29.5bn to the UK economy, an increase of 38.5% since 2010 (£21.3bn)¹.
- Data from the same year reveals that the culture sector supported 674,000 jobs, 2% of the UK total².
- Culture can attract and integrate new development to create a cohesive place and community.
- A strong cultural offer attracts residents and visitors, but also attracts skilled workers and retains graduates. This in turn attracts firms and boots business investment.
- The Creative Industries contributed £101.5bn to the UK economy in 2017, an increase of 53.1% since 2010 (£66.3bn)¹.

Economic contribution of culture



In Yorkshire and the Humber, culture contributed an estimated £565 million per year to the economy between 2010 and 2017, the 3rd lowest of all English regions. In contrast, London contributed £20bn (70% of the UK total for culture)¹.



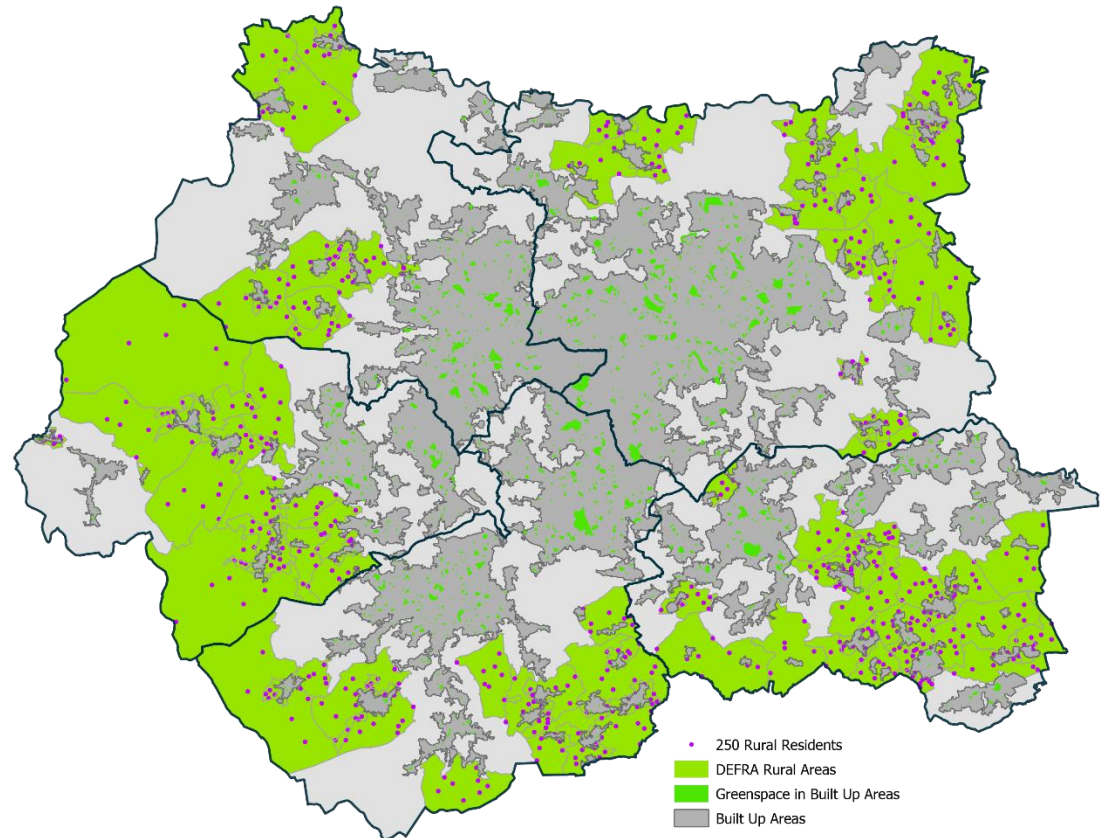
Expressed as a proportion of total GVA for the UK, in 2017 culture contributed around 1.7% (£29.5bn). The DCMS sectoral estimates for GVA (bottom chart) reveal a decline in the contribution of culture to UK GVA in Yorkshire and the Humber. This pattern is also seen in the North East and East Midlands. In contrast, London's proportional contribution to GVA from culture increased over the same time period.

Green & Blue Infrastructure

9% of the population live in the 38% of the geography defined as a DEFRA Rural Area, enjoying a population density of 3 people per hectare compared to 17 people per hectare in urban areas. Similarly, 9.7% of businesses are located in rural areas.

The built up areas of West Yorkshire contain 20 hectares of open green space including parks and sports fields.

The wider Leeds City Region contains over 88k ha of National Parks and 66k ha of Areas of Outstanding Natural Beauty.



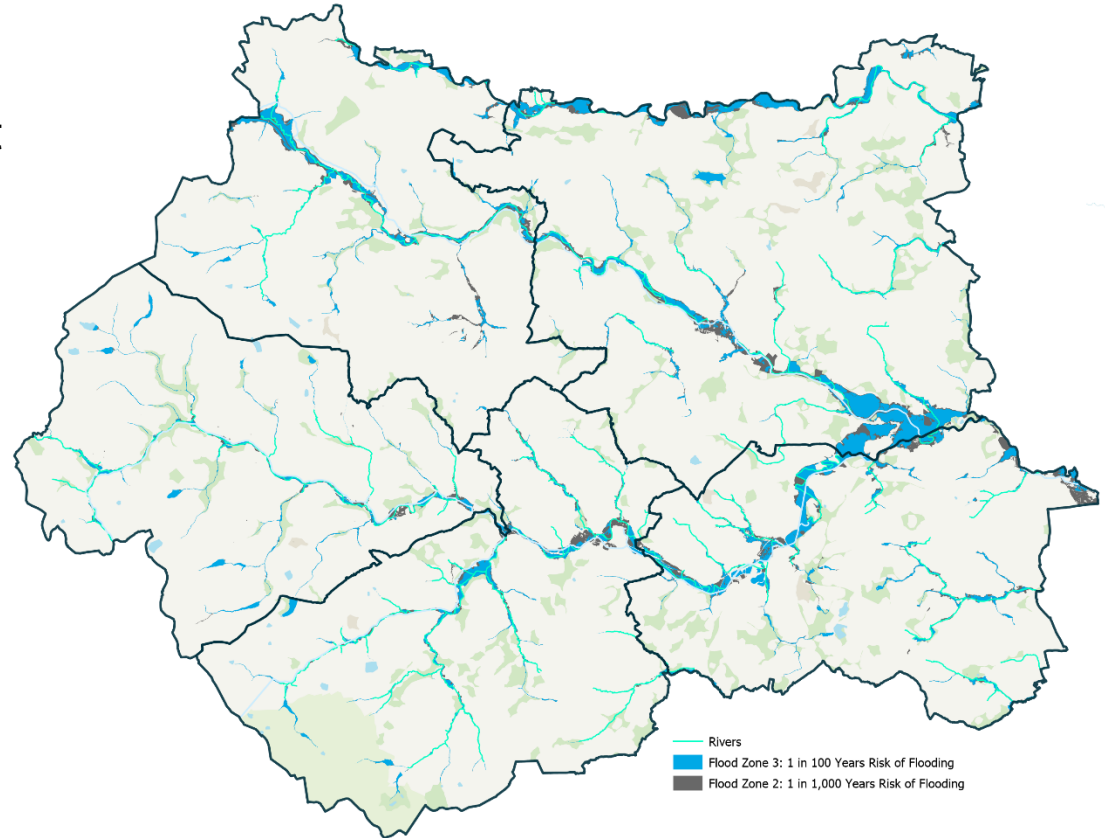
Source: DEFRA Rural Urban Classification 2011, ONS Mid Year Population Estimates 2018

Green & Blue Infrastructure

West Yorkshire contains 162km of canals and 734km of statutory main rivers.

17k residential properties in West Yorkshire face a 1 in 100 year flood risk (Flood Zone 3) and a further 17k properties are in an area with a 1 in 1,000 year risk

Over 5k businesses are located in Flood Zone 3 with an additional 5k located in Flood Zone 2.



Source: Mint Database Bureau van Dijk

People

People – key messages

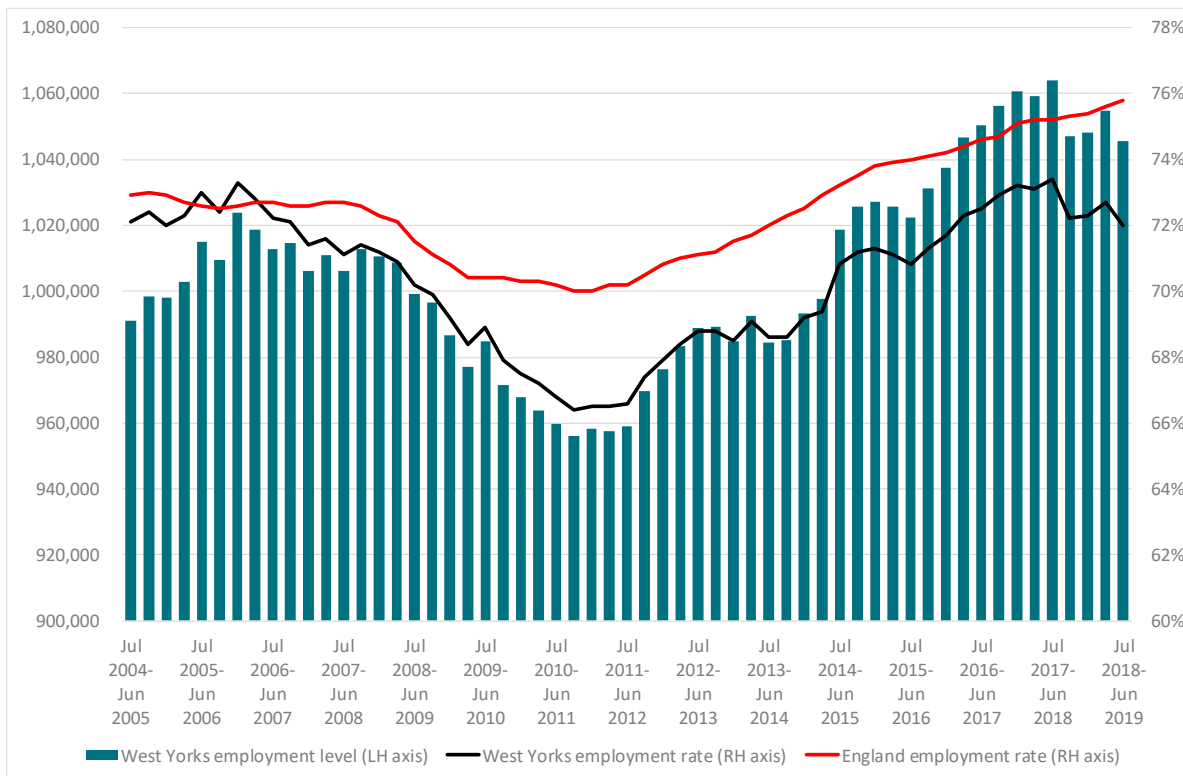
- The area faces a deficit of skills – particularly at a higher level, and this is closely associated with its performance on productivity and pay. This deficit is a function of low skills equilibrium – the deficit of skills supply is linked to a deficit of demand.
- Nonetheless, higher level occupations are the main source of job growth – raising aspiration and connecting local people to high skilled openings represents a major opportunity.
- The area has seen a strong recent improvement in its labour market performance but still has a significant number of people who are excluded from the labour market, with disadvantaged groups most at risk.
- Apprenticeships represent a key opportunity to address employers' specific skills needs but recent reforms have disrupted the supply of opportunities.
- The area has a large HE sector but the extent to which it addresses local skills needs is limited, with graduate retention rates low relative to some comparable areas
- Employers continue to under-invest in workforce development and there is a need to improve skills utilisation. Many people are stuck in low-paid work and need support to enable them to progress their career.

People – key messages (2)

- The area faces acute and persistent shortages in respect of high level STEM occupations (digital, engineering etc) and skilled trades – these could be an inhibiting factor for an industrial strategy
- Management skills gaps are a key priority for action in view of business performance and the productivity context
- Brexit has the potential to negatively impact skills supply, particularly in sectors like manufacturing but could also stimulate a shift by employers to a more skills-intensive model
- Meeting the considerable future recruitment needs of caring roles is a key challenge in view of their relatively poor pay and prospects
- Automation poses a key future threat to employment in routine and lower-skilled jobs in the area, with major implications for inclusive growth
- The disadvantaged, including residents of deprived areas, are at risk of low attainment and are less likely to gain access to skills programmes that can aid their progression.

Employment in West Yorkshire may have peaked

Figure: Trend in level and rate of employment, West Yorkshire



Source: Annual Population Survey.

Just over a million (1,046,000) West Yorkshire residents are currently in employment. This equates to 72% of the working age population, four points lower than the national average of 76%.

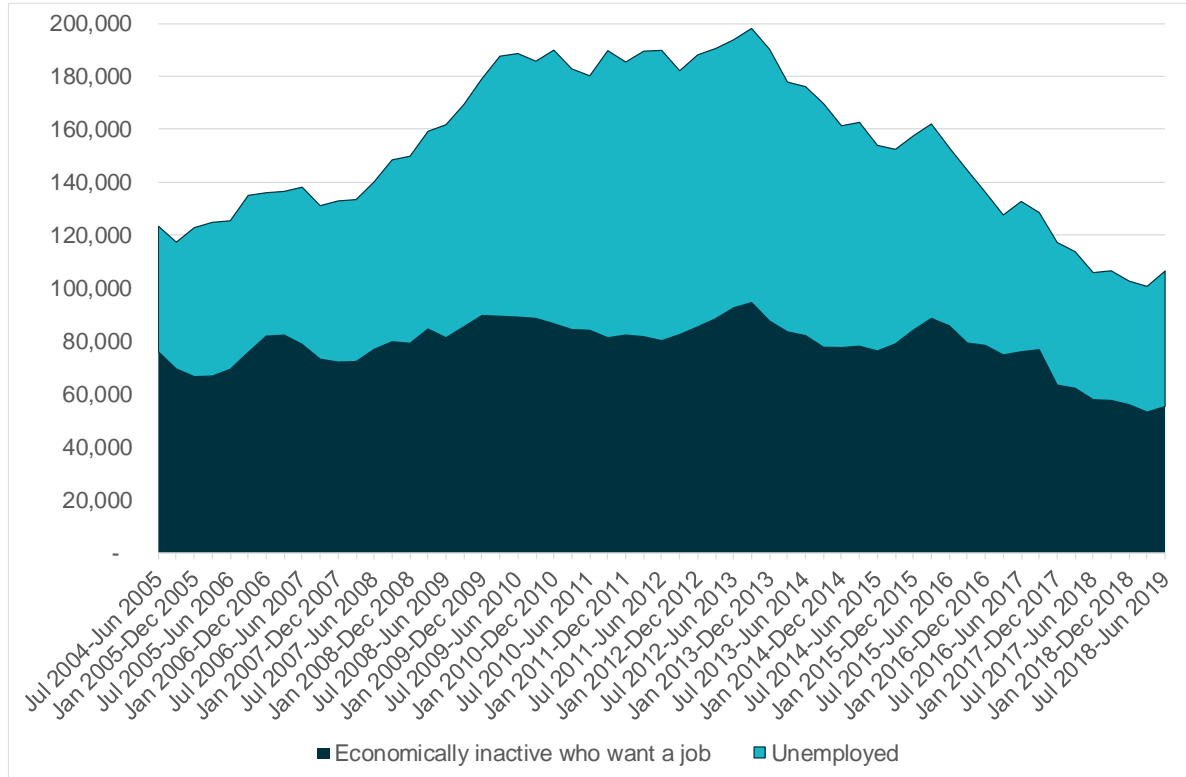
West Yorkshire's employment rate has been lower than the national average since the mid-2000s. The last recession saw a gap open up that has not closed since.

Indeed, there is some evidence that the employment rate and level in the area may have plateaued and begun to diverge further from the national trend. The national employment rate has maintained a strong upward direction at the same time as the local rate and level has shown signs of flattening out.

The size of this gap matters, since an additional 55,000 people would be in employment in West Yorkshire if the employment rate could be raised to match the national average.

There has been a strong decline in unemployment but smaller change in number of inactive people who want a job

Figure: Trend in level of ILO unemployed and economically inactive who want a job, West Yorkshire



Source: Annual Population Survey.

The region continues to face a challenge around getting people into sustained employment.

The latest position is that 51,000 people in the region are unemployed and seeking work, 4.7% of the working age population (national average: 4.1%).

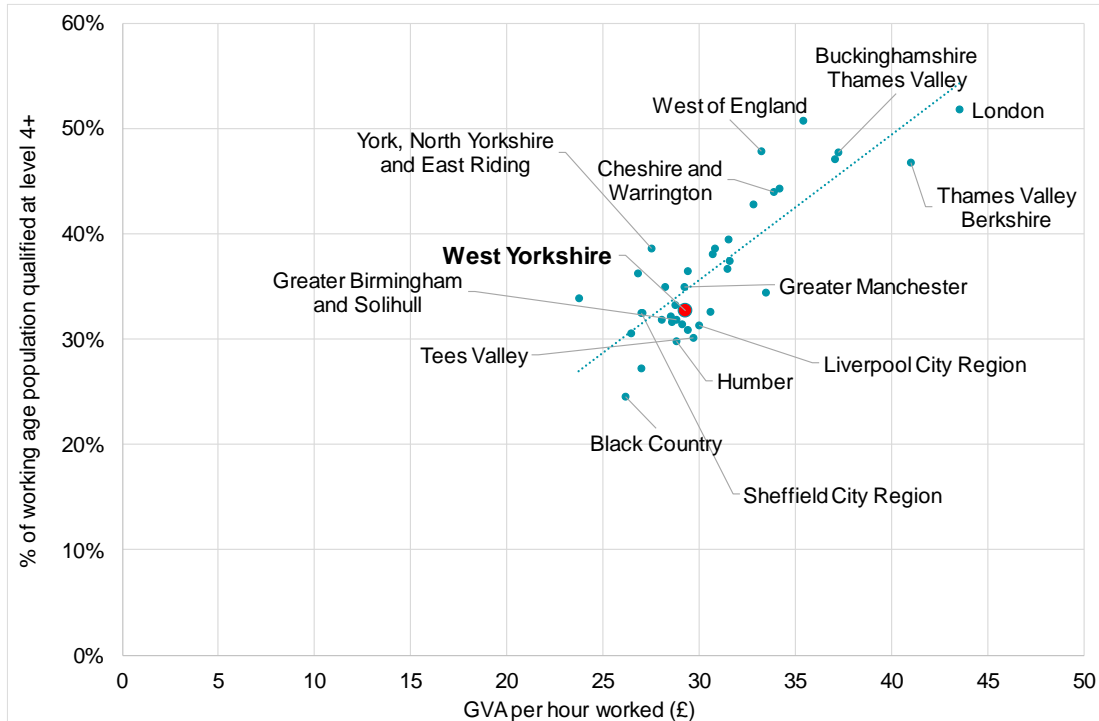
However if economically inactive people who would like a job are factored in, the count increases to 106,000 or 10% of the working age population. In Wakefield, this proportion rises to 14%, whereas in Calderdale it falls to 8%.

Across West Yorkshire, the level of inactivity has been much stickier in face of strengthening labour market than official unemployment count – 31% decline versus 53% since 2012; decline in inactivity has only recently kicked in.

This confirms the continued importance of employment support and investment in skills development for the jobless.

There is a strong correlation between skills and productivity performance at local level

Figure: High level qualifications and productivity by LEP area



Source: Annual Population Survey; ONS LEP level estimates of productivity

A simple **illustration** of the link between productivity performance and skills is this scatter chart which plots performance of LEP areas against the two variables – output per hour and % qualified at level 4 and above.

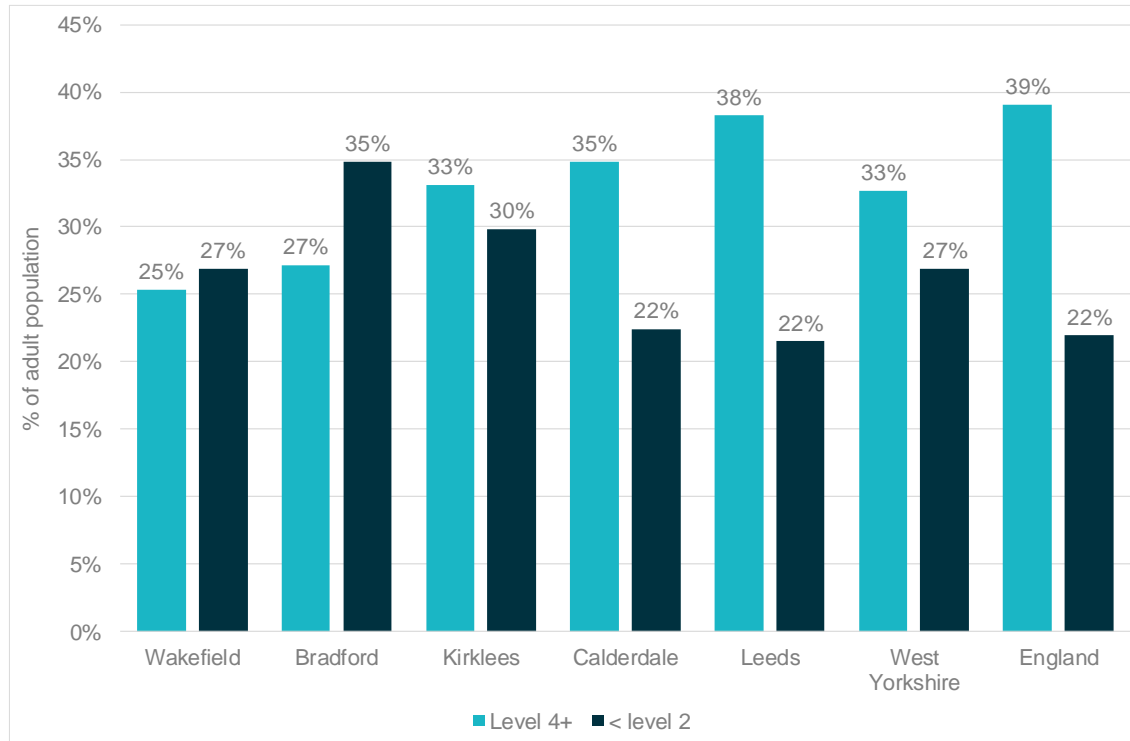
It shows a **strong relationship** between the two, although there are a range of other factors aside from skills that determine local productivity.

West Yorkshire is towards the **bottom left** of chart – low productivity and low skills – London is top right – high productivity, high skills.

A strong supply of high level skills supports the effective use of technology within firms and an increased focus on innovation.

There are marked differences in skills profile at district level

Figure: Profile of highest qualification held by working age (16-64) population in 2018



Source: Annual Population Survey, ONS, Jan to Dec 2018

West Yorkshire performs poorly in terms of skills supply- the proportion qualified at level 4 and above is 6 points lower than the national average and the proportion qualified below level 2 is 5 points higher

The qualification profile at district level is quite disparate within West Yorkshire.

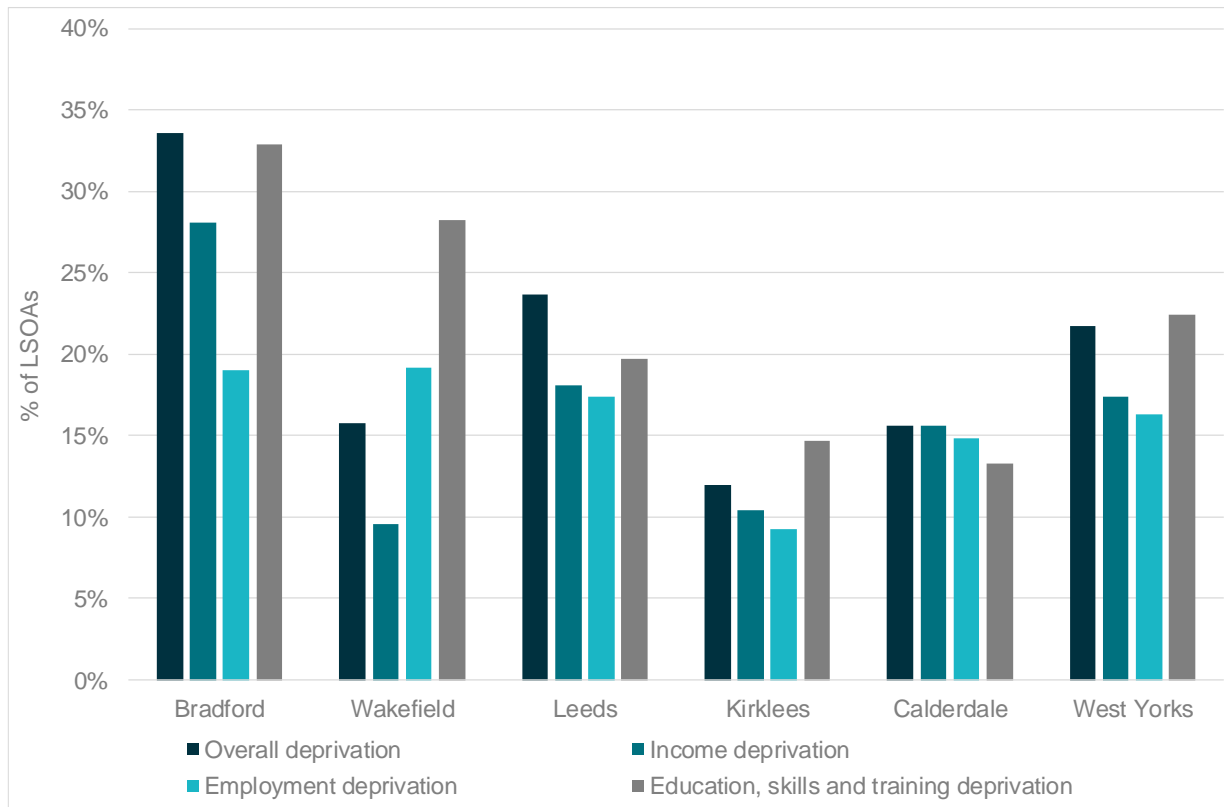
For example, only 25% of the population in Wakefield is qualified to level 4. In Bradford there are significantly more people qualified below level 2 than qualified at level 4 and above.

Leeds and Calderdale perform significantly better. The proportion of people qualified at level 4+ in Leeds is 13 points higher than in Wakefield.

Nonetheless, all districts under-perform against the national average on higher level qualifications.

Skills deprivation is most prevalent in Bradford and Wakefield

Figure: Proportion of neighbourhoods in 10% most deprived nationally by domain of deprivation

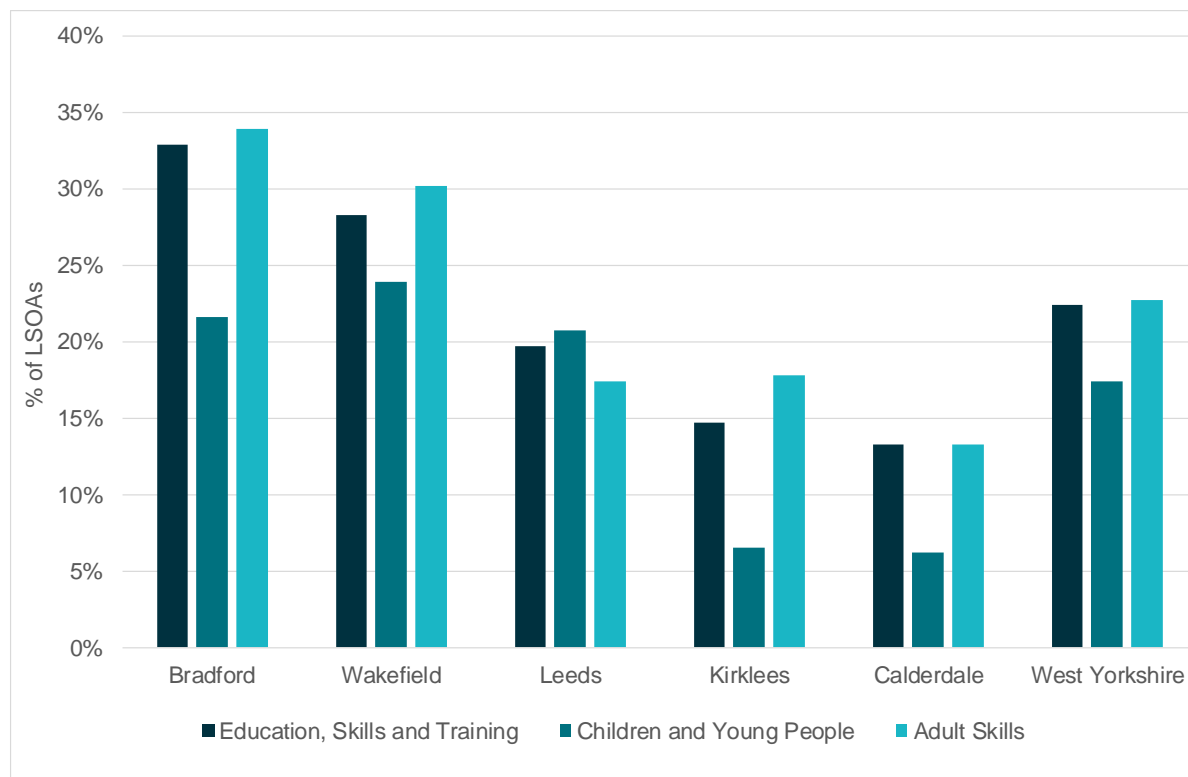


Source: *Indices of Multiple Deprivation, Ministry of Housing, Communities and Local Government, 2019*

- West Yorkshire has more than its fair share of skills-based deprivation. Based on the IMD 2019, 22% of neighbourhoods in the region are among the 10% most deprived nationally in relation to skills, with Bradford (33%), and Wakefield (28%) the worst-affected. However, all districts have more than their fair share of skills deprivation.
- In Wakefield, education, skills and training deprivation is much more prevalent than other forms of deprivation.
- However, the pattern of education, skills and training deprivation generally follows that of overall deprivation. More than three-quarters of City Region neighbourhoods that fall within the most deprived overall are also classed among the most deprived 10% in terms of education, skills and training.

The character of skills deprivation varies at district level

Figure: Proportion of neighbourhoods in 10% most deprived nationally by domain



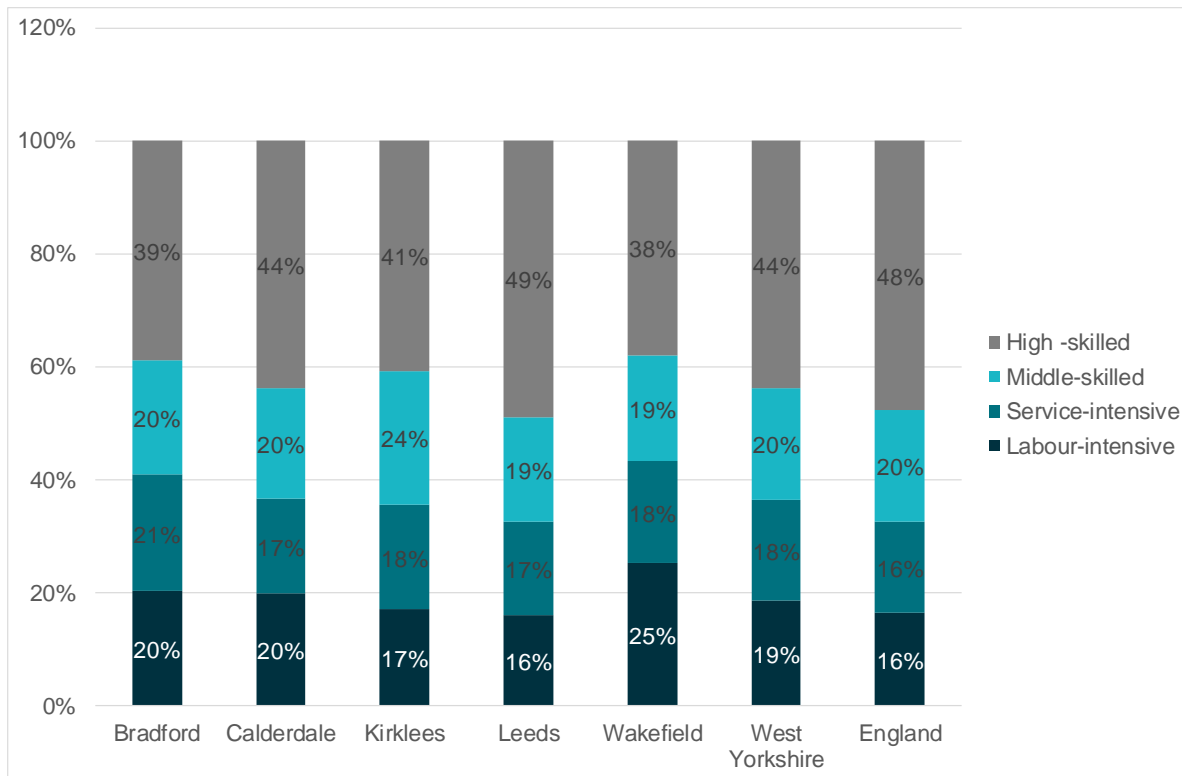
Source: Indices of Multiple Deprivation, Ministry of Housing, Communities and Local Government, 2019

Children and Young People sub-domain includes: Key Stage 2 attainment; Key Stage 4 attainment; Secondary school absence; Staying on in education post 16; Entry to higher education
Adult Skills sub-domain: Proportion of working age adults with no or low qualifications; English language proficiency

- All districts in West Yorkshire, with the exception of Leeds, are characterised by skills deprivation that is more prevalent among adults rather than young people. For some of these districts the issue of English language proficiency may play a part in adult skills deprivation.
- This is not to understate issues around children and young people in these districts – in both Bradford and Wakefield more than 20% of neighbourhoods are still among the most acutely deprived on this basis.
- Improving the skills pipeline by raising the attainment of young people is a critical priority but in some parts of the region will not be sufficient in view of deficit of skills among adults

Employment in high skilled occupations is under-represented across West Yorkshire

Figure: Profile of employment by broad occupational category



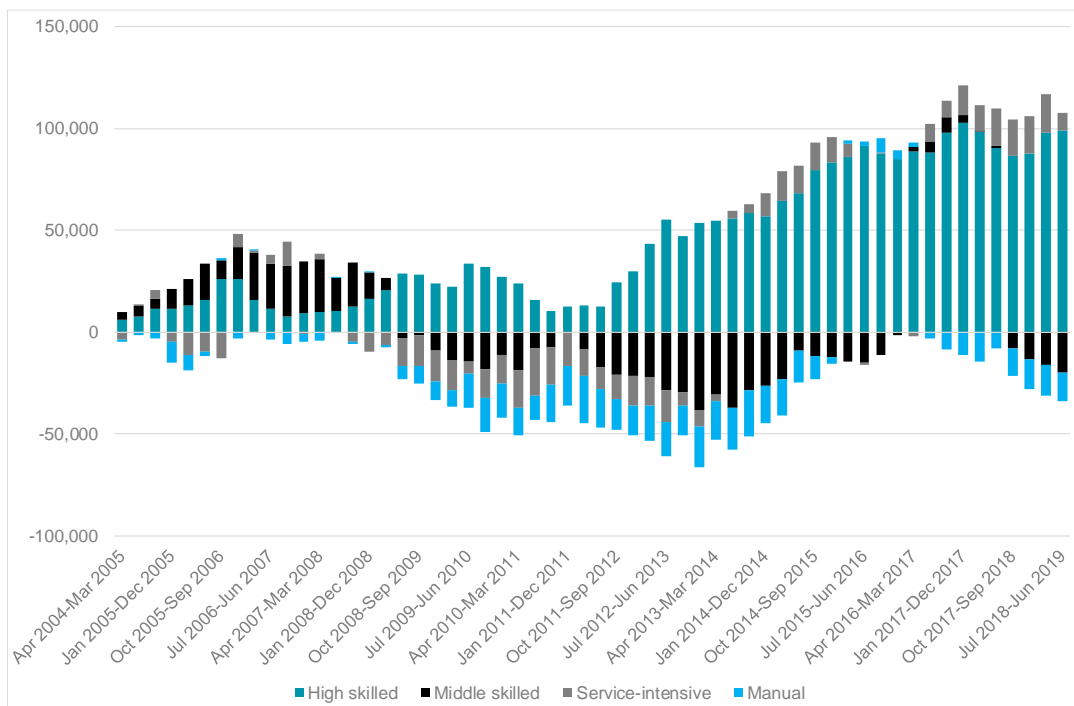
Note: workplace-based employment

Source: Annual Population Survey, ONS, July 2018 to June 2019

- Employment in higher skilled management, professional and associate professional / technical occupations accounts for a smaller proportion of the total locally compared with nationally.
- 44% of people working in the region are employed in higher skilled roles, versus a national average of 48 per cent.
- Only in Leeds is the skills profile similar to the national average.
- Employment in professional roles is particularly low at 20% of the total compared with national average of 23%.
- Employment in middle-skilled, service-intensive and manual roles are all proportionately higher in the region than nationally.

High skilled occupations have been main source of employment growth in recent years

Figure: Cumulative employment growth by occupational category, West Yorkshire



Note: workplace-based employment
Source: Annual Population Survey, ONS

Although West Yorkshire has a deficit of higher skilled employment, recent employment growth has nonetheless been driven by expansion of higher skilled occupations: the number of people employed in these roles has grown by 98,000, or 28%, over the last 15 years, four times the overall rate of employment growth.

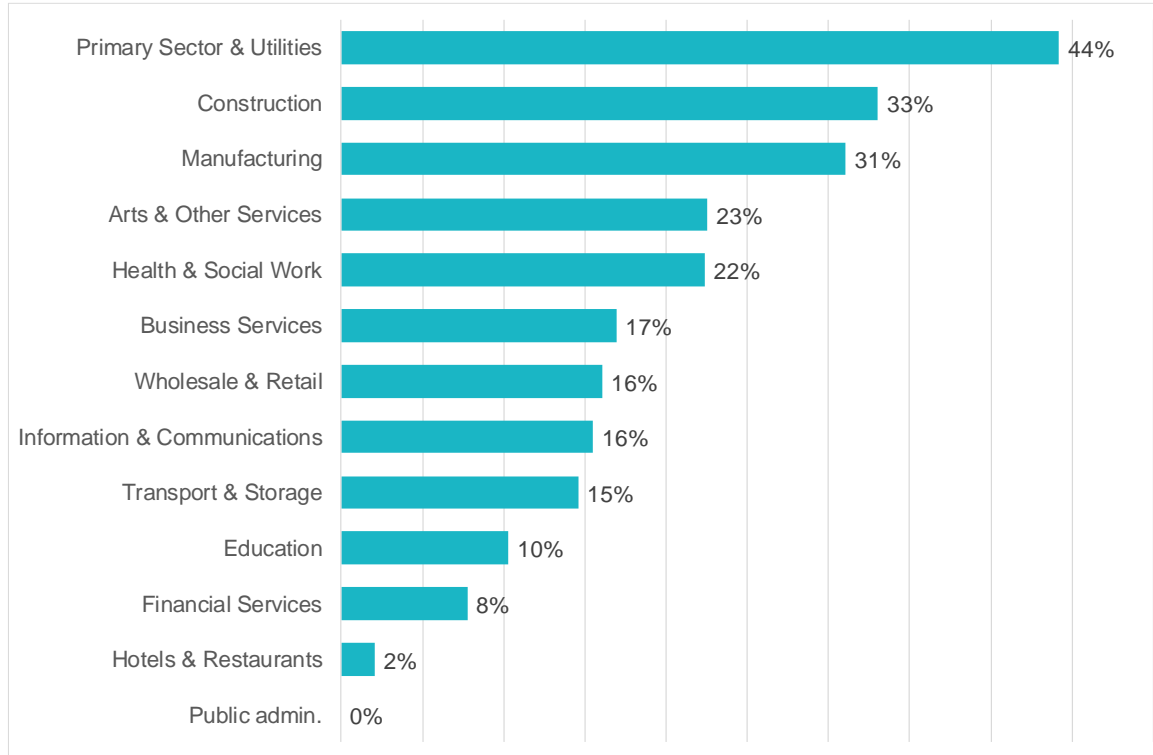
The other main source of growth was service-intensive jobs, primarily care and elementary services roles (e.g. hospitality, cleaning).

Employment in middle skilled roles was hard hit by the recession but returned pre-recession levels as the economy recovered. It now shows signs of renewed decline.

Employment in manual roles (semi-skilled operatives, labourers) saw decline in recession and also shows signs of further contraction following a period of recovery.

Skill shortages most acute in primary, construction and manufacturing

Figure: Density of skill shortage vacancies by industry sector, West Yorkshire

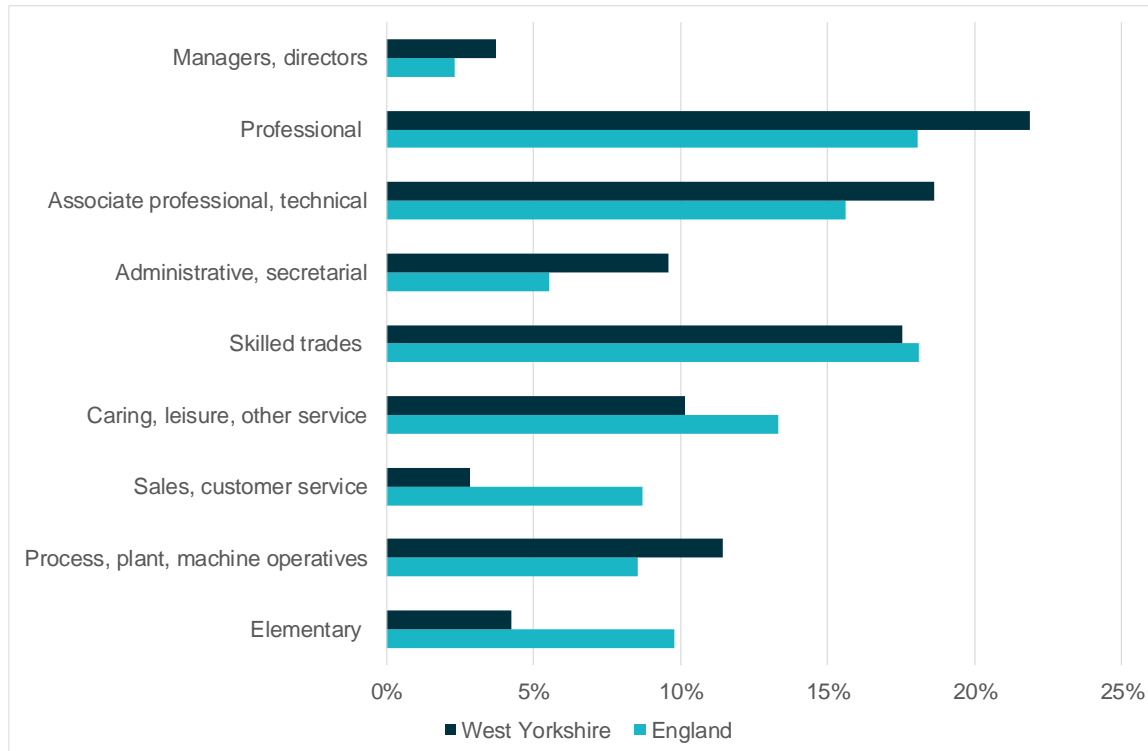


*Note: Density measure shows skill-shortage vacancies as a proportion of all vacancies
Source: Employer Skills Survey 2017*

- Skill shortages arise when employers find it difficult to fill their vacancies because of a lack of candidates with the necessary skills, qualifications and experience.
- Skill shortages tend to be concentrated in particular industry sectors and occupations but where they do exist they can be acute and persistent.
- Their prevalence is highest in three sectors: primary sector and utilities, construction, followed by manufacturing. Shortages in these sectors have proven to be persistent over time both locally and nationally.

Skill shortages most acute in higher skilled professional and associate professional roles plus skilled trades

Figure: Profile of skill shortage vacancies by occupation

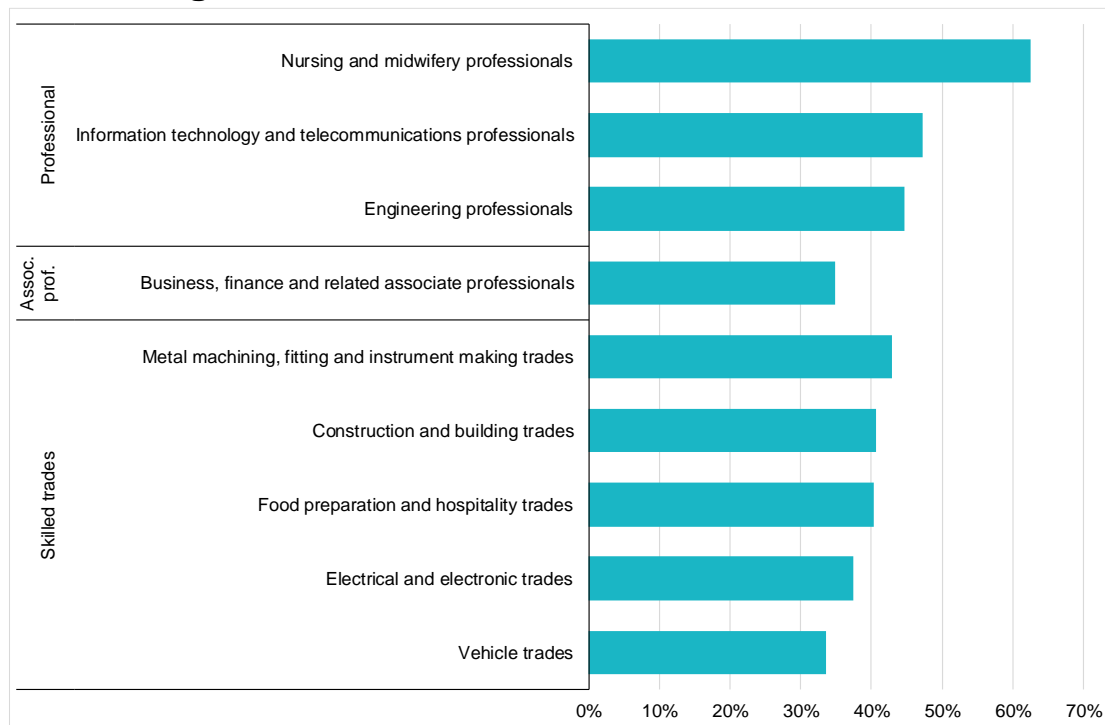


Source: Employer Skills Survey 2017

- The occupational pattern of shortages provides an insight into the particular types of jobs that are affected by a lack of candidates with the right skills.
- This shows that there are problems in generating intermediate and high-level vocational / technical skills.
- The volume of skill shortages is greatest in professional (22% of total), associate professional / technical (19%) and skilled trades (18%) occupations. This local pattern of shortages broadly mirrors that seen at national level.
- With regard to the skills that employers found difficult to obtain from applicants, specialists skills required to perform the role are highlighted for the majority of shortage vacancies. A lack of complex analytical skills (such as solving complex problems) is also widespread, as is a deficit of digital skills.

Drilling down, digital and engineering professional occupations face acute shortages

Figure: Occupational minor groups with highest density of skill shortage vacancies, Yorkshire and the Humber



Note: Density measure shows skill-shortage vacancies as a proportion of all vacancies

Source: Employer Skills Survey, 2017

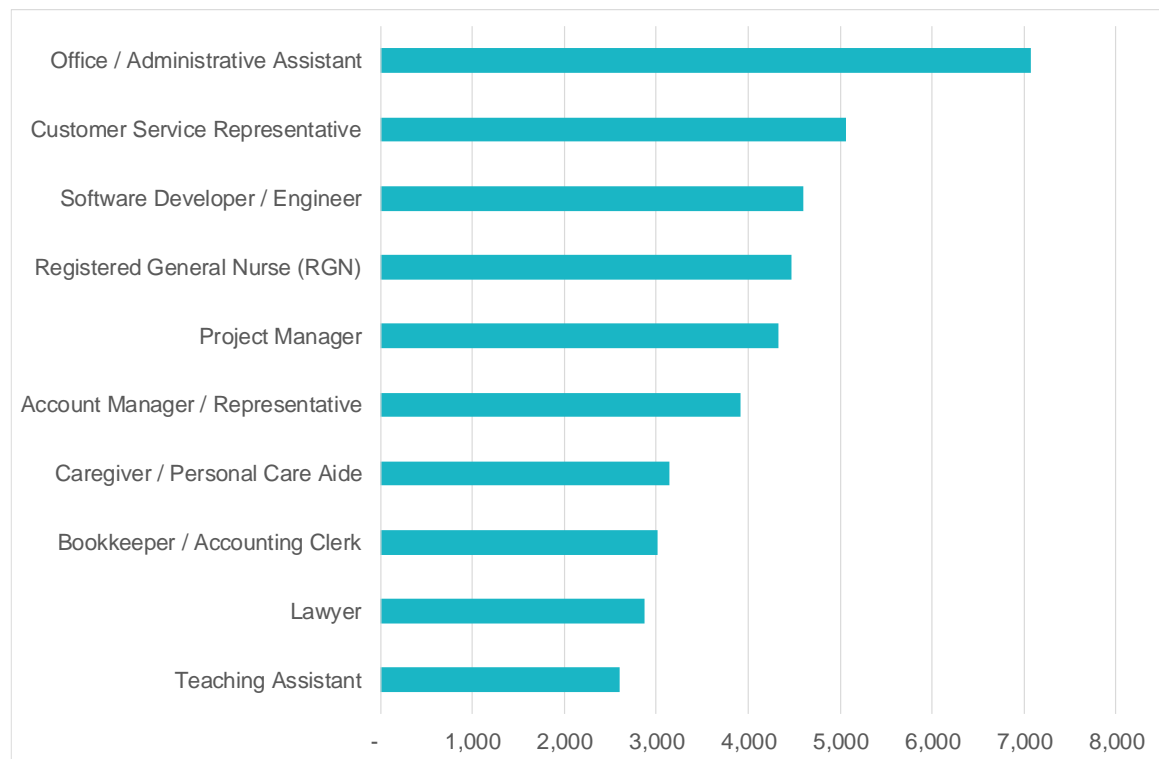
Data for Yorkshire and the Humber indicate that the occupations with the greatest overall number of shortages include nursing roles, caring roles (e.g. care workers), food preparation and hospitality trades (e.g. chefs) and engineering professionals .

However, the occupations with the highest density of shortages, those in which shortages are most acute, are nurses, digital professionals, engineering professionals, metal machining, fitting and instrument making trades and construction and building trades.

These occupations have typically seen a relatively high prevalence of shortages since 2011, demonstrating their persistent nature.

Admin, customer service and digital roles are among those in greatest current demand

Figure: Top occupations in greatest demand overall based on online job postings, West Yorkshire, November 2018 to October 2019



Source: Labour Insight

A key way of understanding skills demand is by examining the types of job that are being advertised via online job postings-provides real-time insight into current recruitment needs.

A key caveat is that lower skilled jobs are under-represented – they are less likely to be advertised online.

There were 194,000 job postings in West Yorkshire in the 12 months from November 2018 to October 2019.

The top ranked jobs, in terms of the volume of job postings, were in administration, customer service and digital roles.

A variety of higher skilled roles

Communication and organisational skills are in most widespread demand among local recruiters

Figure: Top “baseline” skill types in greatest demand, West Yorkshire, November 2018 to October 2019



Source: Labour Insight

A further way of understanding skills demand is by examining the types of skills requirements that employers stipulate via online job postings.

The fact that employers ask for these skills suggests they are not available as matter of course – and in some cases are difficult to get from candidates.

Communication skills are in most widespread demand by some distance, followed by skills like planning, organisation, creativity, and problem solving.

Ensuring that young people focus on the development of these generic skills from a young age is of key importance in fostering their career-readiness and employability.

Customer service and teamwork / collaboration are the most widespread specialised skill requirements

Figure: Top specialised skill types in greatest demand, West Yorkshire, November 2018 to October 2019



Source: Labour Insight

A similar approach can be applied to more specialised types of skill. The skills featured here are not required for all jobs but are a common requirement across a range of jobs.

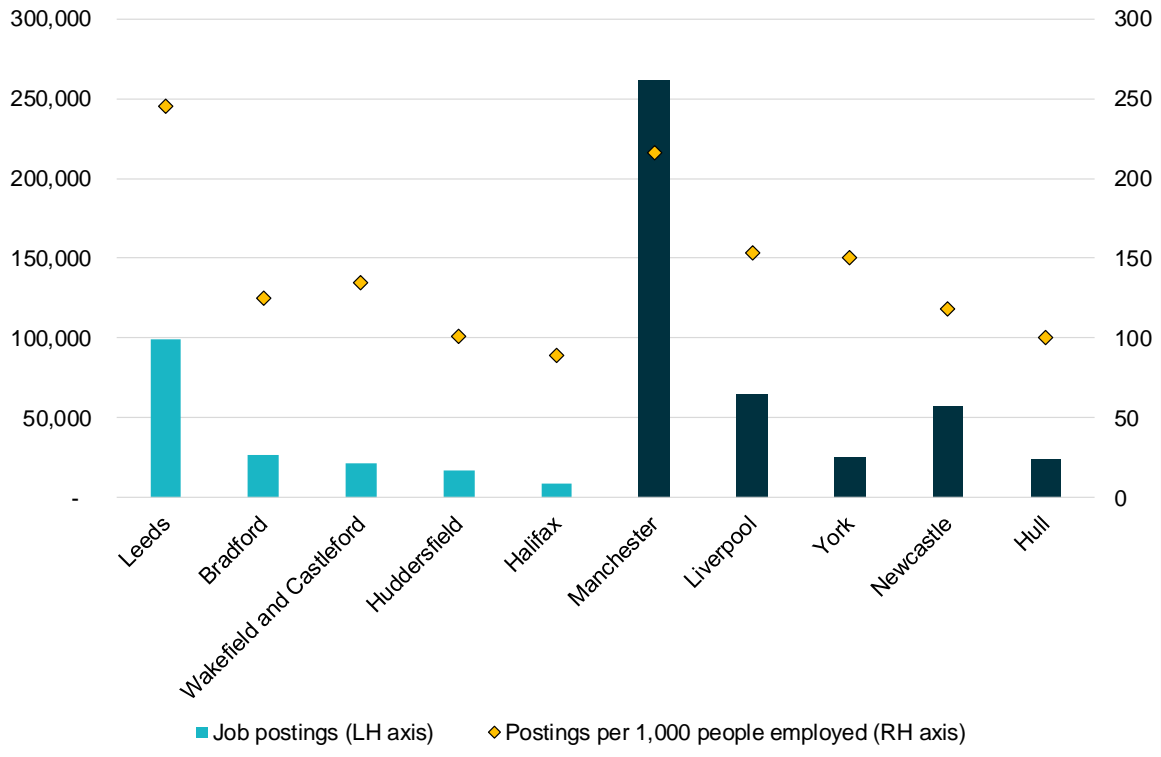
Customer service, followed by teamwork / collaboration are the requirements that employers are most likely to highlight.

Teaching, sales, budgeting, accounting and project management skills are also in widespread demand.

Many of these skills are likely to be a general asset to individuals in terms of their personal marketability.

Leeds has one of the most dynamic labour markets in the North of England

Figure: Volume of job postings and ratio of postings per 1,000 people employed by selected travel-to-work area in the North of England

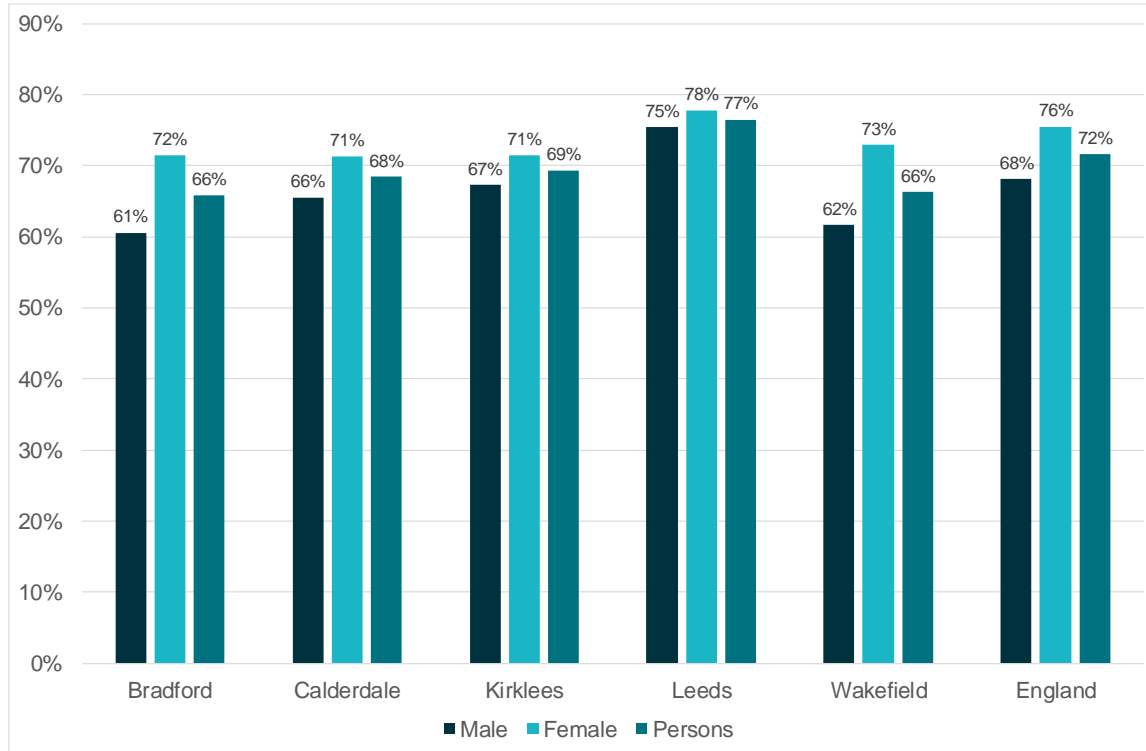


Source: Labour Insight

- A useful measure of the dynamism of local labour markets is the level of recruitment activity taking place.
- Recruitment activity in Leeds, in terms of the volume of online job postings in the Leeds travel-to-work area is considerably higher than in other parts of West Yorkshire, both in absolute terms and as a proportion of people in employment.
- Although the scale of recruitment activity is higher in Manchester, Leeds has the highest ratio of recruitment relative to the size of its employment base of any city in the North.

Leeds has a high proportion of people in quality work

Figure: Proportion of residents who are employees in quality work by sex, 2018



Note: Employees in high quality work have satisfactory hours, are not in low pay and have desired contractual status. Source: Office for National Statistics, Quality Work publication

ONS has developed a composite measure of good work in response to recommendations in the Taylor Review of modern working practices.

According to this measure a person in quality work has all of the following characteristics: not in low pay, working satisfactory hours, having desired contractual status.

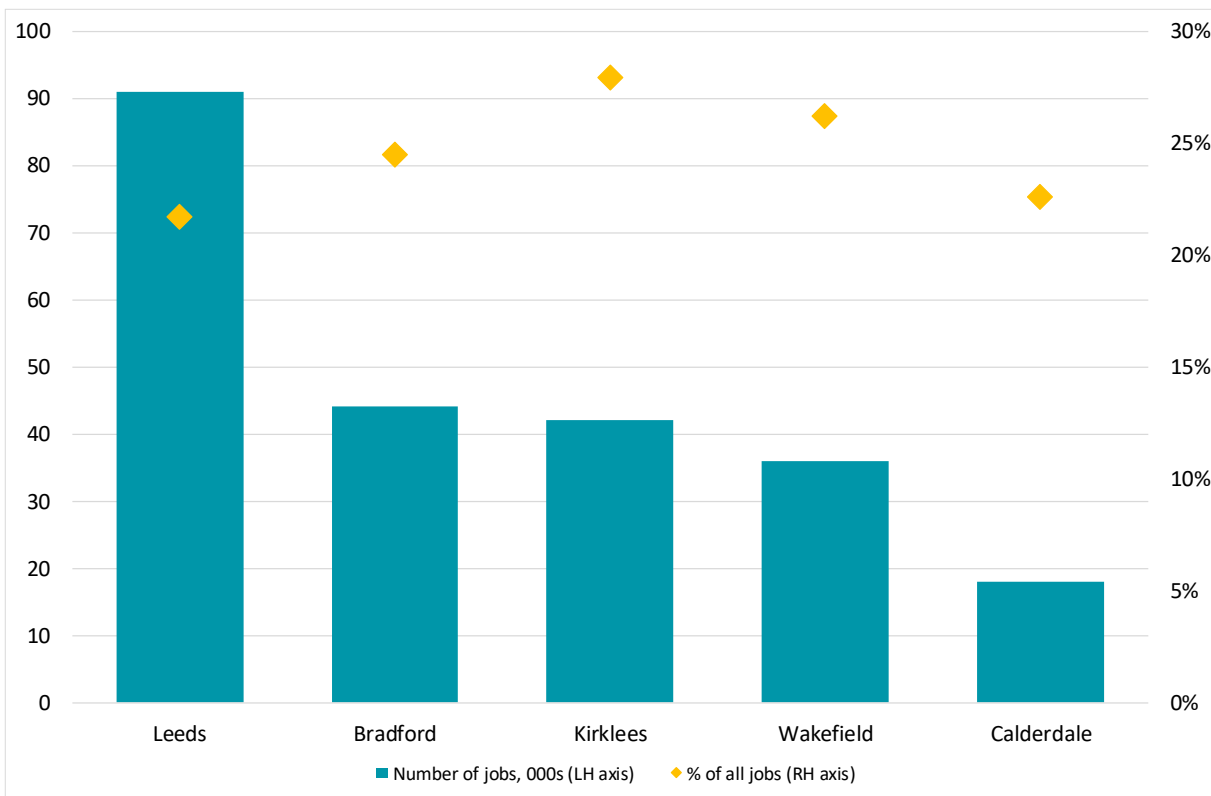
Around two-thirds of resident employees are in quality work across the majority of West Yorkshire districts, somewhat below the national average.

Women are more likely to be in quality work, reflecting the fact that they are more likely to be working a satisfactory number of hours than men.

Leeds has a considerably higher proportion of quality jobs than elsewhere in West Yorkshire and also outperforms the national average by 5 points. It performs consistently strongly on pay, hours and contractual status

Around 230,000 jobs (24%) across West Yorkshire pay below the LWF Living Wage

Number and % of employee jobs paying below the living wage (as defined by the LWF), 2018



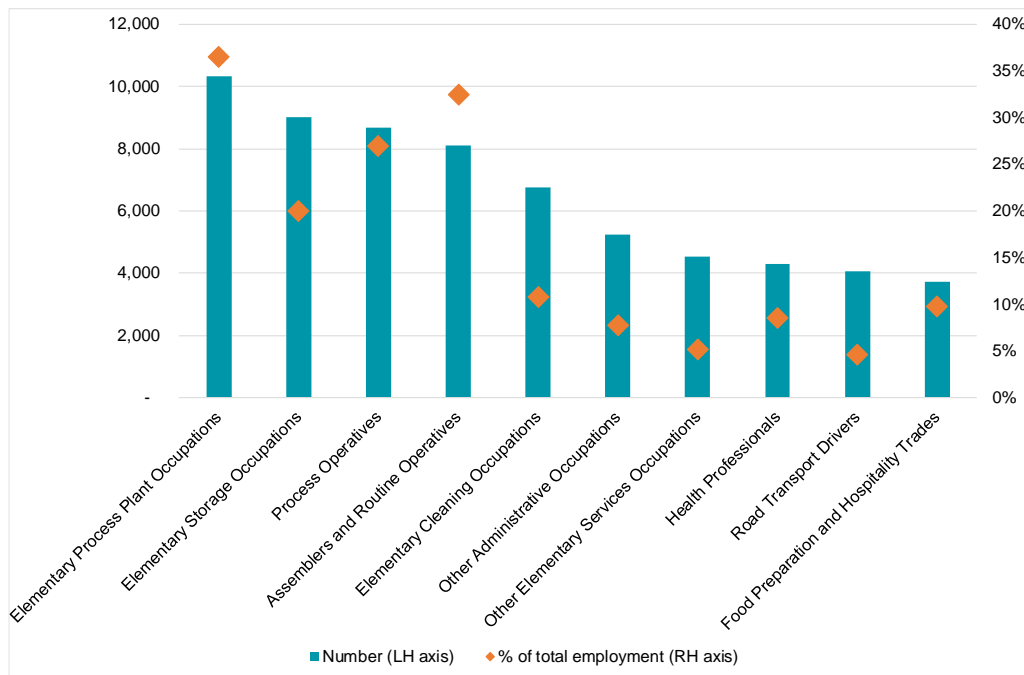
Source: Annual Survey of Hours and Earnings 2018

Note: Workplace-based

- Productivity is closely linked to pay and therefore living standards: more productive firms pay higher wages.
- The local productivity deficit is reflected in the pay situation.
- 24% of jobs in West Yorkshire pay less than the Living Wage Foundation's Living Wage rate, which is intended to reflect the level of pay people need to get by. In contrast for Oxfordshire LEP it's 13%.
- The largest number of low-paid people is in Leeds but Kirklees and Wakefield have higher proportions of low-paid people.

Brexit poses potential labour supply challenges

Figure: Occupations with the highest level of EU migrant employment, Yorkshire and the Humber



Source: Annual Population Survey, July 2017 to June 2018

Across Yorkshire and Humber there are around 140,000 EU migrant workers equivalent to 5% of total employment in the region, somewhat lower than the England average of 8%.

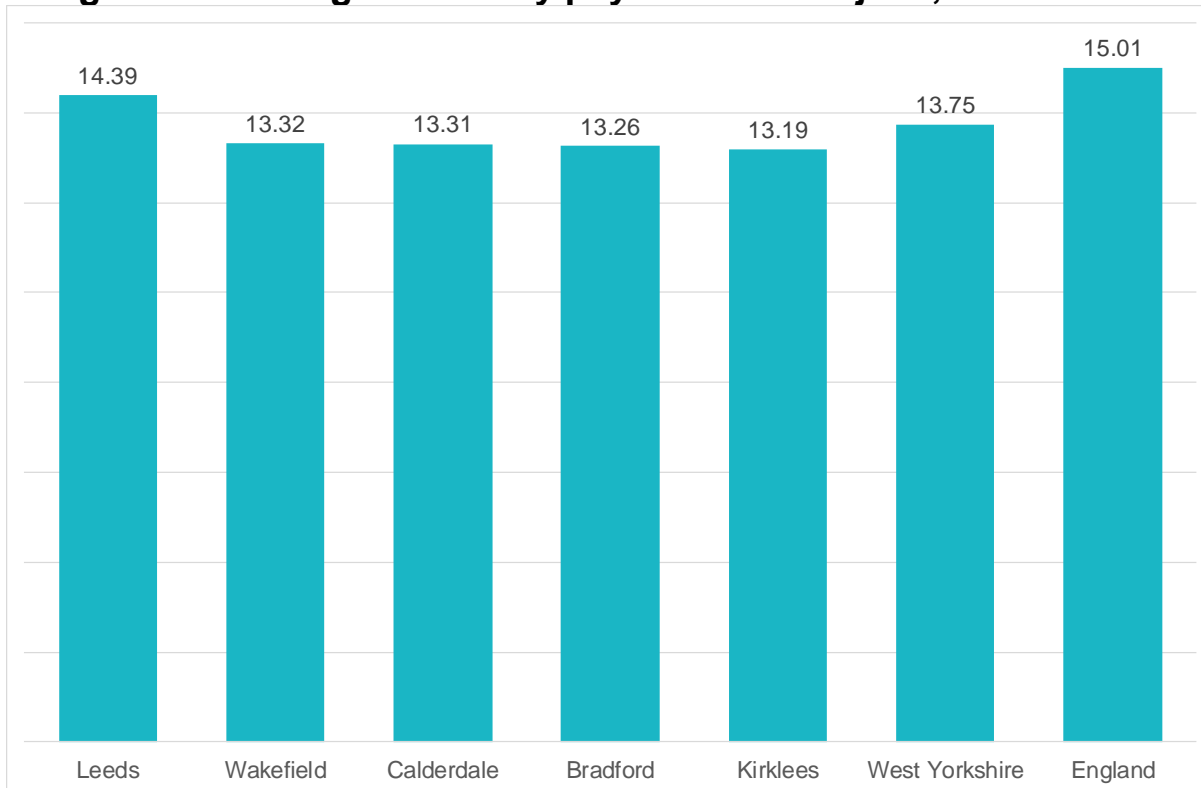
EU migrants are concentrated in routine, manual and low-skilled occupations and this is where labour supply issues could be concentrated as a result of Brexit.

This includes lower-skilled elementary occupations, including process plant roles (such as packers, bottlers etc.), storage occupations, service roles (such as kitchen assistants and bar staff) and cleaning occupations. Routine operative occupations, both assemblers and process operatives, also have a significant level of EU migrant employment.

Although lower-skilled occupations are where the direct impact of Brexit could be greatest in the form of disruption to labour supply, there could still be significant implications for skills as employers may decide to move to a more skills-intensive business model founded on capital investment in labour-saving equipment.

Pay levels in West Yorkshire are well below the national average

Figure: Median gross hourly pay for full-time jobs, 2019



Source: Annual Survey of Hours and Earnings 2019

Note: Workplace-based

Gross median hourly pay for full-time jobs in West Yorkshire is 92% of the national average.

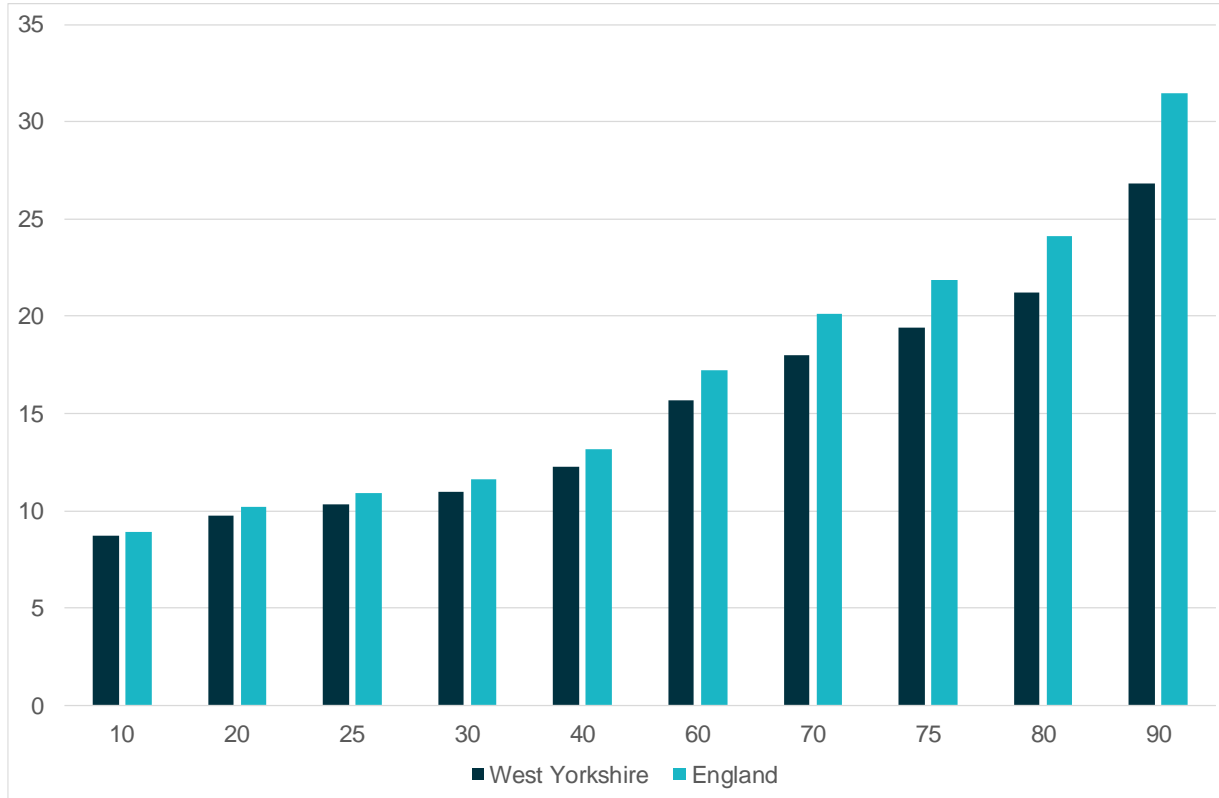
All districts in West Yorkshire pay below the England average. The figure for Leeds is close to parity (96% of the national average) with the remaining districts occupying a fairly consistent level at 88 to 89% of the national average.

The median rate of pay for jobs with a place of work in West Yorkshire is slightly higher than for jobs held by people resident in West Yorkshire, suggesting that people travelling into the area to work are paid more than people travelling out of the area.

However, the reverse is true of Calderdale and Kirklees, indicating that residents travel out of these districts to jobs that are, on average, better paid than the jobs undertaken by inward commuters to these districts.

The local pay deficit with the national average is largely due to a disparity at the top end of the pay distribution

Figure: Median gross hourly pay by percentile, 2019



Note: Workplace-based

Source: Annual Survey of Hours and Earnings 2019

Although the region has a significant proportion of people paid below the Living Wage, the main source of the pay deficit with the national average is under-performance at the upper end of the pay distribution.

For example the pay level for jobs at the 10th percentile in West Yorkshire is 98% of the equivalent national figure; however, at the 90 percentile it is only 85% of the national figure.

This indicates that the highest paid jobs in the region are paid significantly less than the highest paid jobs nationally and this is main source of overall pay gap.

This reflects the under-representation of jobs in the highest skilled occupations in the area and reflects local underperformance on productivity.

People - conclusions 1

Priorities

- Digital, engineering / manufacturing and construction confirmed as skills priorities
- Project management, team working and collaboration and budget management skills important
- General need to maintain supply of people with high level skills across most areas including health, business etc but less evidence of market failure
- Management skills gaps a key priority in view of business performance and productivity context
- Considerable recruitment need for care roles – less about skills deficit than general attractiveness of these roles
- Replacement need across all occupations, some of which face acute shortages currently – but what are longer term prospects for young people?

People - conclusions 2

Issues

- Higher apprenticeships key element of response to rapidly changing higher level skill needs but current availability is limited
- Does local skills system have capacity to respond to reskilling challenge presented by automation?
- Impact of Brexit on labour supply could also stimulate demand for workforce development support
- Progress on graduate retention relies on increase in demand for high level skills in the local economy
- Ensuring that investment in high level skills generates best economic returns
- Improved outreach mechanisms key to increasing the contribution of skills development to inclusive growth

Infrastructure

Infrastructure – key messages

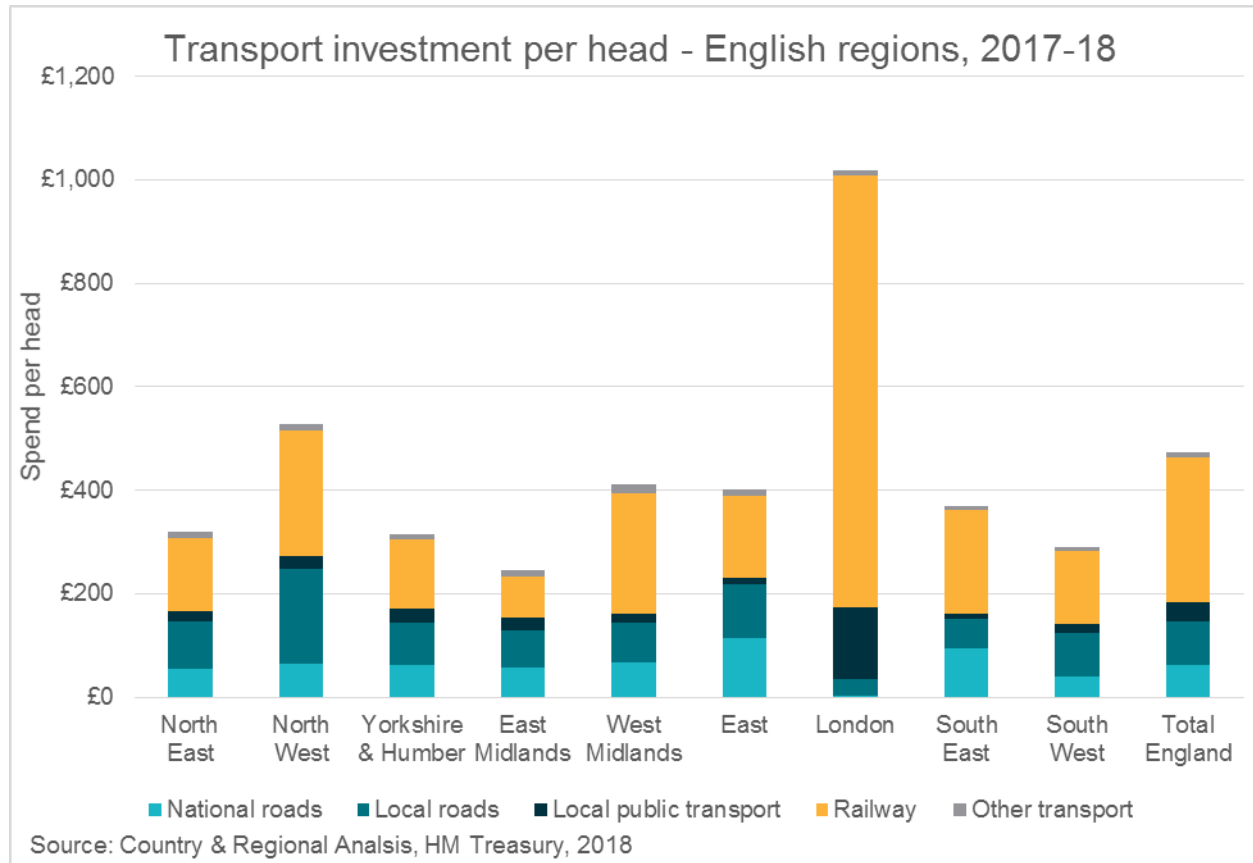
- Investment in transport infrastructure and public transport is critical to driving economic growth as transport networks allow people to access jobs, services and opportunities.
- Housing is equally important to driving economic growth, and research reveals strong, positive productivity effects from investing in better housing outcomes, e.g. saved travel times and locating workers closer to a range of jobs that better match their skills.
- In terms of modal share, the car continues to dominate, bus patronage is declining, rail use is growing (but accounts for 4% modal share of commuters) and rates of active travel are below national average.
- **On average 70% of commuters** within the districts of West Yorkshire **live and work in their home district.**
- **59% of all commuters in West Yorkshire travel less than 10km to their place of work;** ranging from 53% in Wakefield to 62% in Leeds.

Why is transport important to productivity?

- **Investment in transport infrastructure and public transport is critical to driving economic growth.** Research by Venables, Laird and Overman (2014) found that if all other drivers of growth were to increase by 10% and transport infrastructure were to stay constant, realised income growth would be just 9%.
- **Improvements in transport connectivity can drive agglomeration**, enabling easier connection with suppliers, customers and labour. This can reduce costs, increase reliability and facilitate the sharing of ideas and development of leaner operating models, enhancing economic and productivity growth.
- Increased scale and density (agglomeration) can lead to higher degrees of specialisation, with firms in related industries also attracted to an area to form clusters. Reducing the distance / travel time between businesses increases the sort of interactions that raise productivity. Rosenthal and Strange (2004) found the elasticity of productivity with respect to city size is in the range 0.05- 0.11, a doubling of city size seems to increase productivity by 3-8%.
- Analysis by SERC for the Northern Way (2009) found that a 20 minute reduction in journey times between Leeds and Manchester would generate productivity benefits (using wages as a proxy) in the region of 1.5% for West Yorkshire districts, after controlling for the skill, age, gender, and occupational mix of places
- Access to affordable, efficient public transport enables workers to access a wider range of employment opportunities, supporting those further from the labour market to participate, and increasing opportunities for other workers to find employment that better matches their skills.

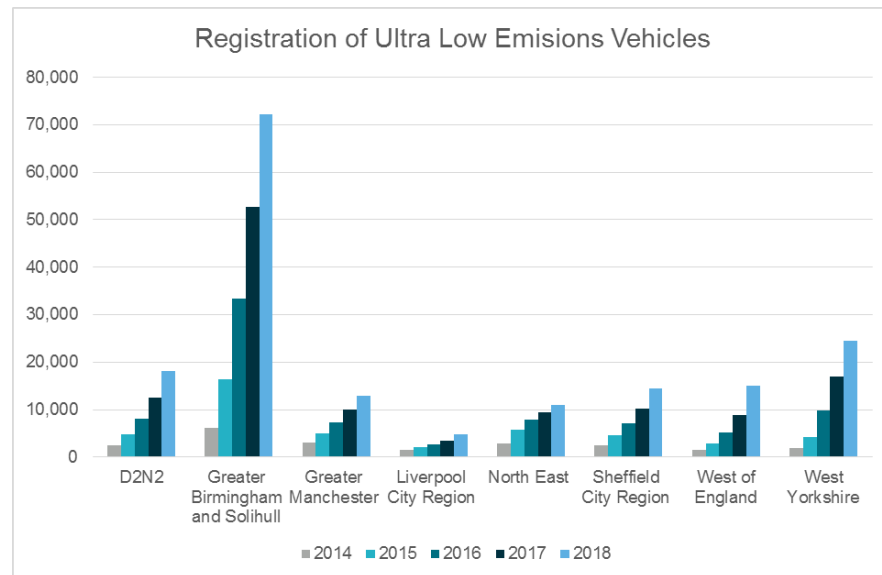
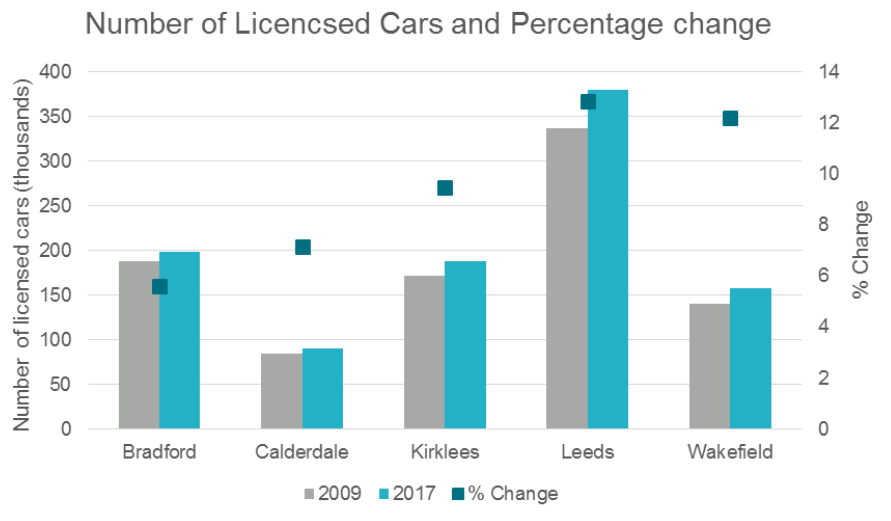
The 2nd lowest transport investment levels of any English region

Transport investment totalled £315 per head in Yorkshire & Humber in 2017/18, below the average for England of £475. This is skewed by London (£1,019 per head), but only the East Midlands had lower investment levels than Yorkshire & Humber.



The car remains the dominant mode of transport

We rely heavily on the car as the primary mode of transport; **70.6% of households** in the area (2011 data) had **access to at least one car**, and over **70%** of the area's residents **travel to work by car**. Long term trends show an increase in car ownership, there are now **1.04 million licensed cars** in West Yorkshire and locally the number of licensed vehicles continues to grow (bottom left chart), with petrol and diesel as the dominant fuel types, although there is **growth in the registration of Ultra Low Emission Vehicles** (bottom right chart). Although **long term trends** reveal a significant **increase in the proportion of people with a driving licence**, nationally the proportion of young adults (aged 17-20) with a licence has declined since a high in the mid-1990s.

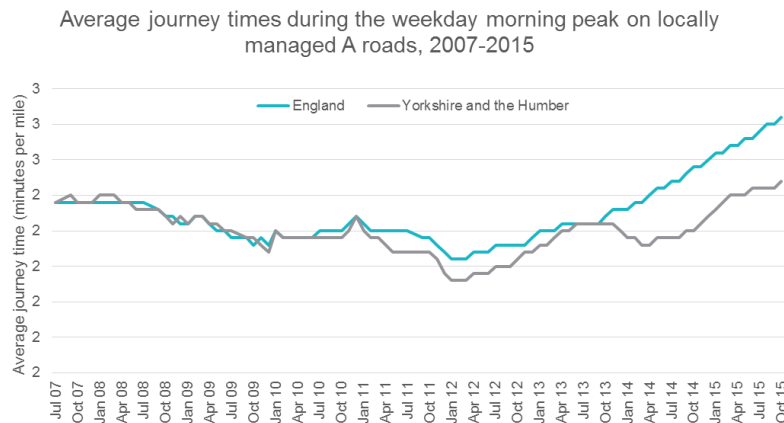


Road infrastructure struggles to cope with demand and the volume of traffic is increasing

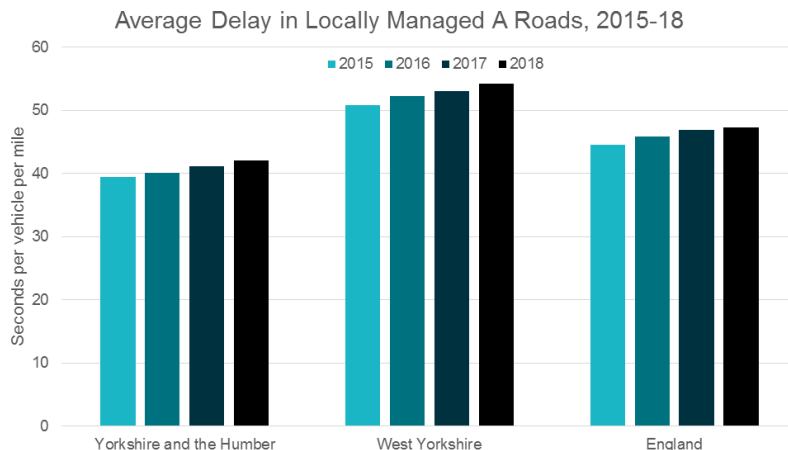
In 2018 the average delay on local A roads in England was estimated to be 47.3 seconds per vehicle per mile compared to free flow; this was 5% higher than in 2015¹. Local and regional trends in average delay follow similar a pattern to the national average (bottom right chart).

The volume of traffic is increasing which means congestion continues to be problem (with longer journey times and reduced averaged speeds).

This has both economic and environmental impacts; not only does it disrupt or delay the movement of people and goods, it contributes to increased pollution and carbon emissions



Source: Department for Transport Statistics



Source: Department for Transport Statistics

Buses are important for the economy

Public transport, and in particular local bus networks, have multiple impacts on the regional economy, amongst them:

- They allow people to access jobs, services and opportunities, therefore affecting productive activities. In PTE areas, bus networks are estimated to generate £2.5bn in economic benefits against public funding of £0.50bn. More than 50% of this benefit is attributable to user benefits from access to jobs, training, shopping and leisure activities¹.
- They can increase participation in economic activity by providing affordable access to jobs and education. This is particularly important for deprived areas. Analysis of the National Travel Survey shows that:
 - 34% of commuters with no car available use bus as their usual means of travel to work².
 - 43% of regular bus commuters do not have a car available, and 59% of bus commuting trips made by those with no car available are of 3 miles or more³.

¹ PTEG (2013). *The Case for the Urban Bus. The Economic and Social Value of Bus Networks in Metropolitan Areas.*

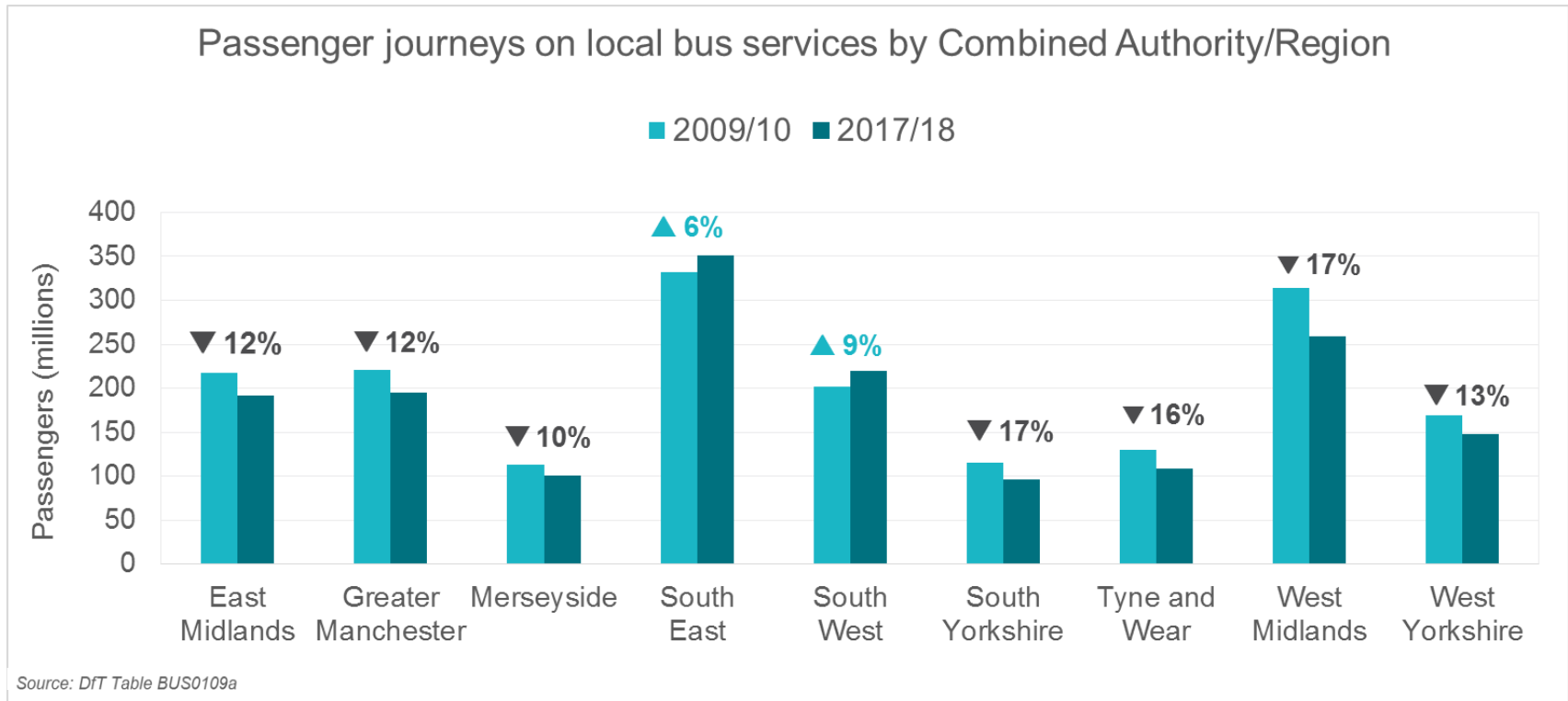
^{2,3} Mackie, P. Laird, J. and Johnson, D. (2012). *Buses and Economic Growth: Main Report.*

Wider benefits of buses include...

- Buses play an important role in reducing indirect and external transport costs, such as traffic congestion, accidents and pollution, which tend to reduce productivity. In PTE areas, the benefits derived from reduced externalities, productivity increases and the stand-by value of bus networks has been estimated to be in the order of £1.2 bn¹.
- Buses improve transport efficiency by freeing space on the network for higher value trips and activities, such as freight, delivery or business travel.
- They support more efficient land-use, through supporting more compact development and increasing agglomeration efficiencies. Buses also support access to affordable housing through reducing transportation costs, particularly those associated to car ownership.
- They can support specific strategic economic development objectives, such as tourism, through the provision of access to cultural and leisure activities.
- Public transport policies, and in particular bus policies, have a distributional effect, as bus is the most accessible form of public transport for socially disadvantaged groups, e.g. low income households and particularly those without access to a car, especially in rural areas.
- However, most of these benefits can only be realised if there is demand for bus travel. However, bus patronage area has declined in recent years.

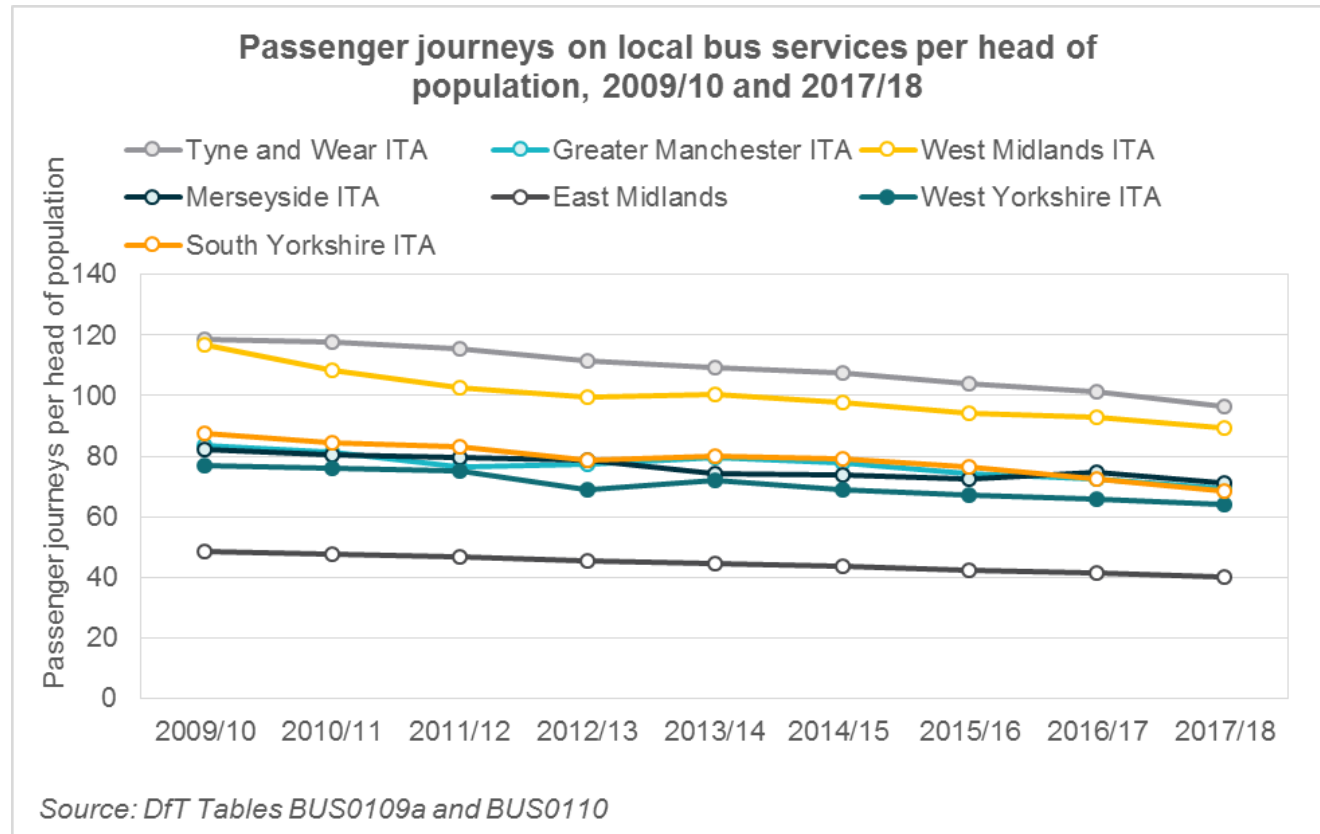
Bus usage continues to decline

Only around **1 in 10 residents** of West Yorkshire **commute by bus**¹, and **bus passenger journeys** in the area have **declined by 13% since 2009/10**². This trend is similar for other regions outside London, except the South East and South West.



Bus usage continues to decline..

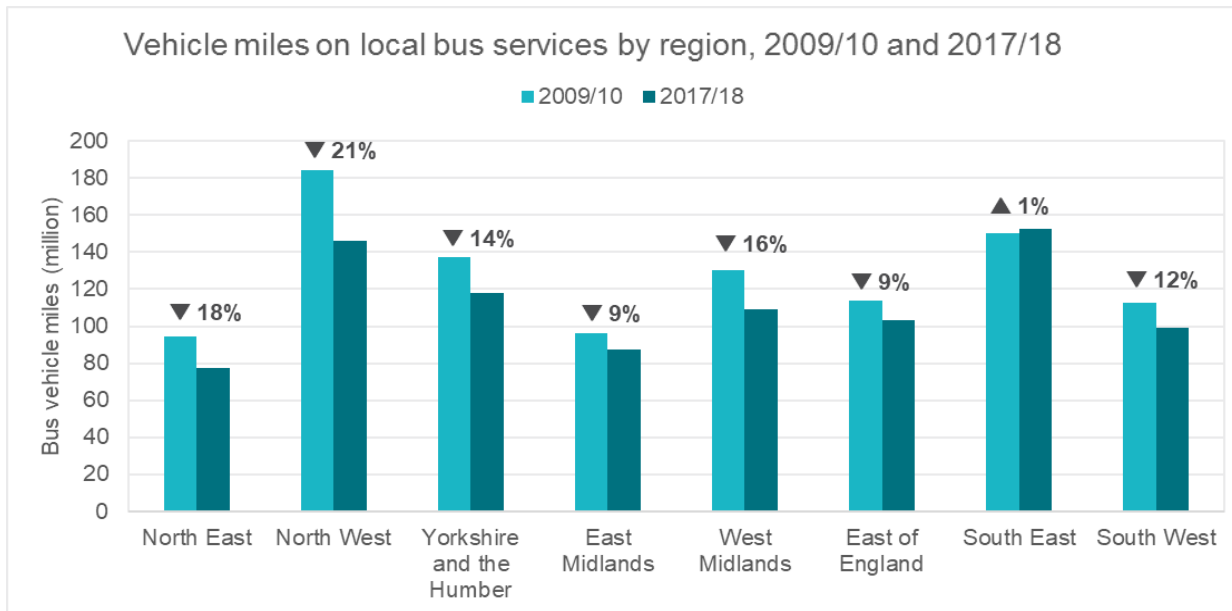
In 2017/18, residents in West Yorkshire made on average 64 trips on local buses, 12 trips fewer than in 2009/10. This fall in bus trip rates is larger than the decline in passenger journeys (17% and 13% respectively), indicating that population increase is the only factor preventing patronage from declining faster.



Reasons for decline in bus use

One reason for the decline in bus usage is the reduction in services. The number of bus miles operated in the Yorkshire and Humber Region has reduced by 14% between 2009/10 and 2017/18. This is one and a half times the England average.

The effect of service cuts may have dramatic consequences in terms of labour market participation; research suggest that 11% of those who use bus as their means of travel to work would either change jobs or leave the labour market if there was no bus service available¹.

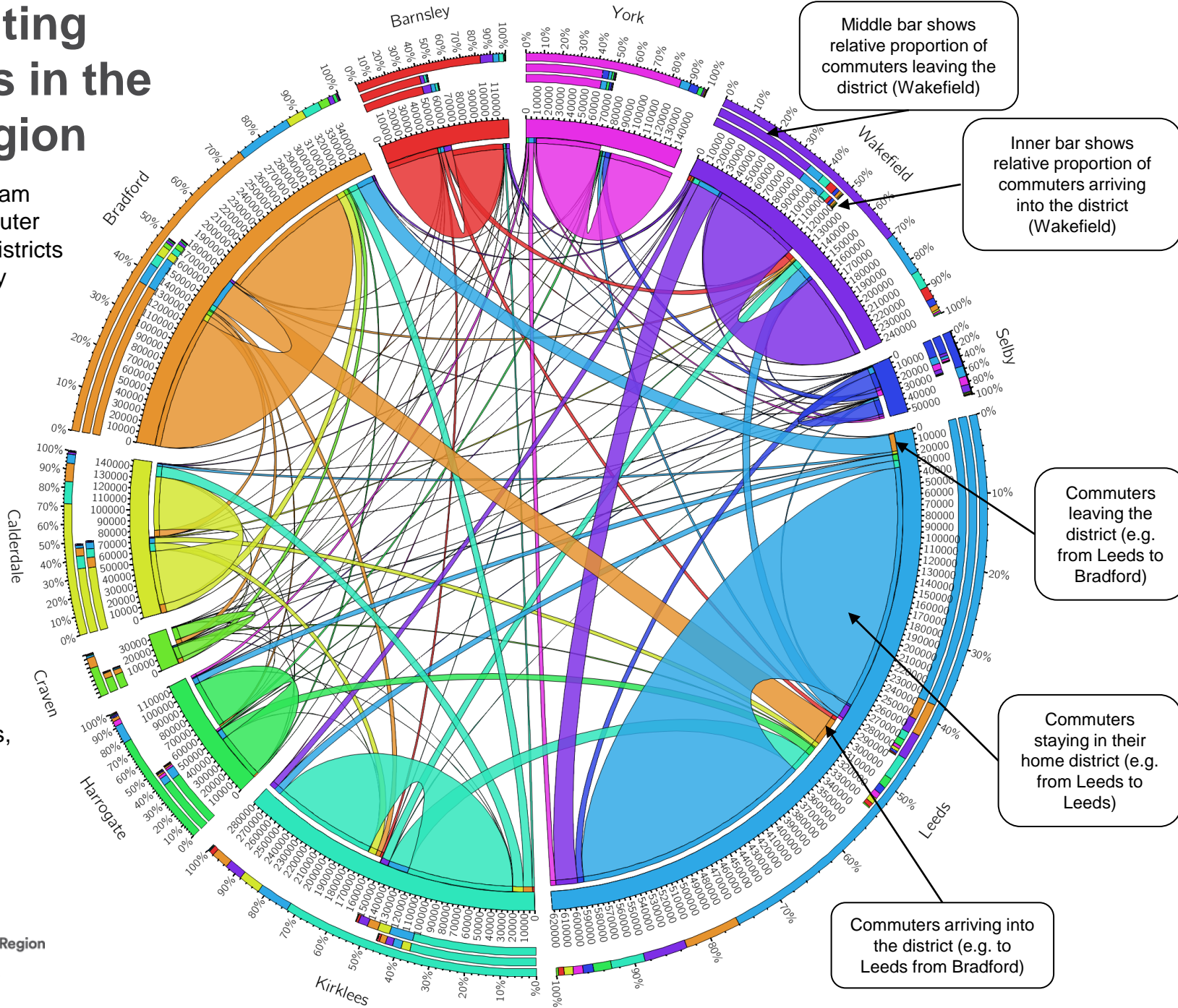


Low punctuality, increasing fares, low satisfaction (compared to other areas) combined with social and technological changes have also contributed to the decline in bus use.

Commuting Patterns in the City Region

This chord diagram illustrates commuter flows between districts within Leeds City Region.

The map highlights each districts' contribution to the workforce and the dominance of people working in their home district. It also helps illustrate the major commuter flows between districts, e.g. Bradford to Leeds (and vice versa) and Wakefield to Leeds.



Middle bar shows relative proportion of commuters leaving the district (Wakefield)

Inner bar shows relative proportion of commuters arriving into the district (Wakefield)

Commuters leaving the district (e.g. from Leeds to Bradford)

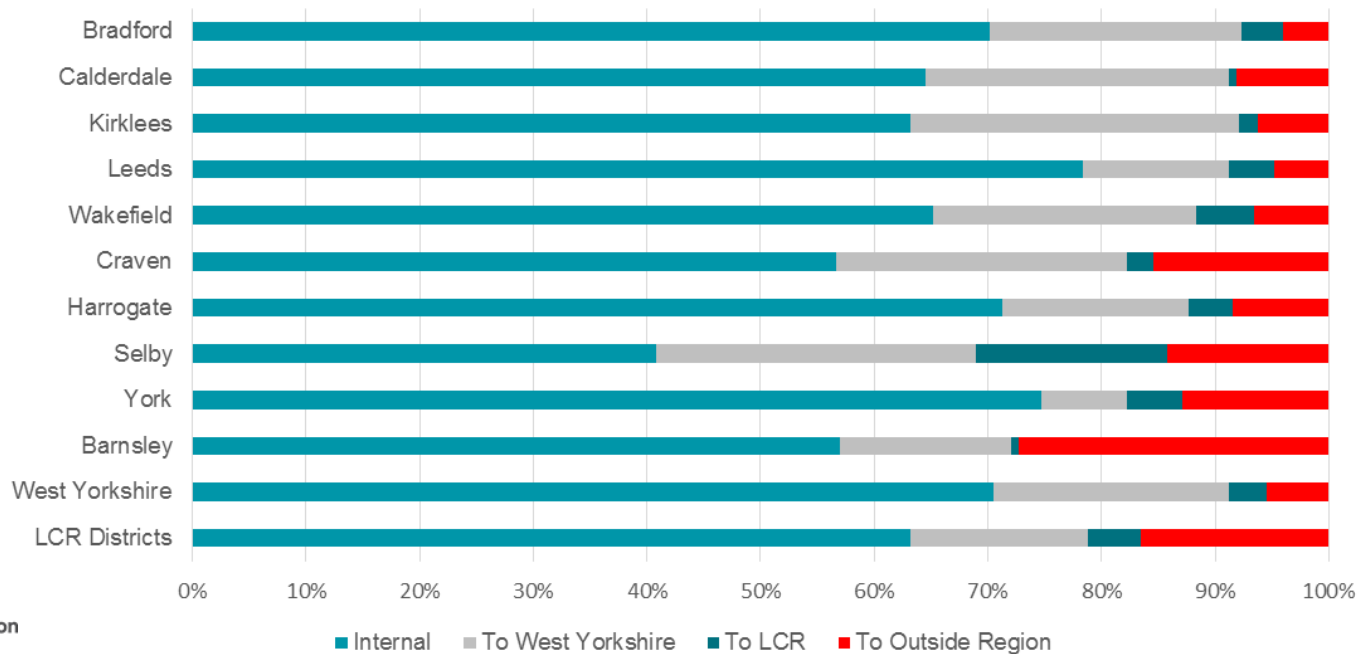
Commuters staying in their home district (e.g. from Leeds to Leeds)

Commuters arriving into the district (e.g. to Leeds from Bradford)

Travel to Work in West Yorkshire

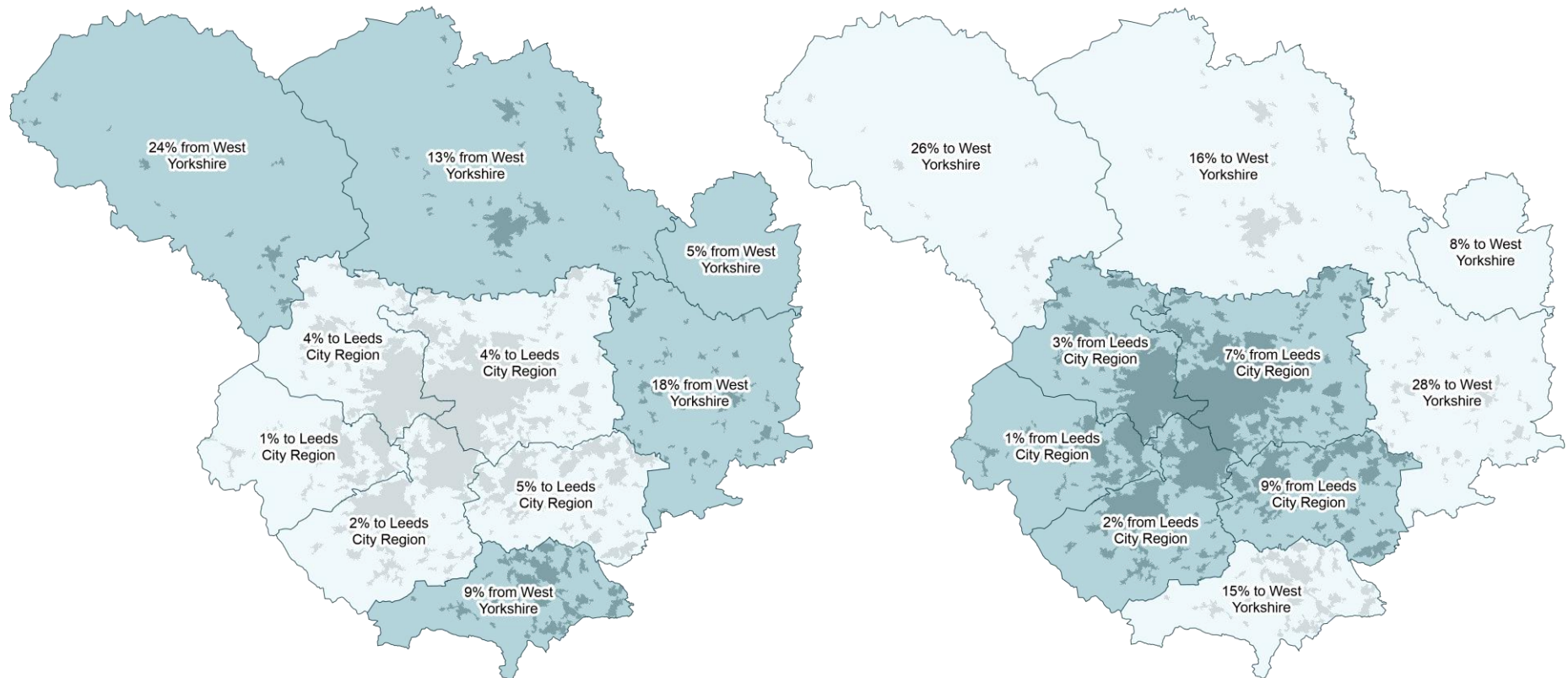
As shown on the previous slide and in the chart below, a large proportion (70%) of West Yorkshire residents live and work in their home district, with 21% residents working elsewhere in West Yorkshire. Around 28k West Yorkshire residents commute to elsewhere in the City Region, and 45k commuters travel from the City Region into West Yorkshire. Only 5% of West Yorkshire commuters work outside the City Region compared to 17% of commuters in the remaining Leeds City Region districts.

West Yorkshire and Leeds City Region Commuting Destinations



Travel to Work in West Yorkshire

Overall, 91% of residents in West Yorkshire also work in the county. The maps below illustrate commuting patterns between West Yorkshire and the wider City Region. The left map shows people leaving West Yorkshire and the right map shows people arriving into West Yorkshire.



Travel to Work – Net Commuting

- West Yorkshire has a net gain of 17k commuters from the other Leeds City Region districts and an addition of 7k commuters from across the country, giving a total net gain of 24k commuters.
- Leeds is the largest commuter attractor in the City Region, with 73k residents from the rest of West Yorkshire, 24k people from the remaining City Region districts and 23k people from the rest of the country commuting to work there. When people commuting from Leeds to elsewhere are included, the city has a net inflow of 55k commuters.
- Districts in the wider Leeds City Region tend to see a higher outflow of commuters than inflow, with a net loss of 17k commuters to West Yorkshire and 3k to the rest of the county.

Net commuting Between Districts in West Yorkshire and the Leeds City Region

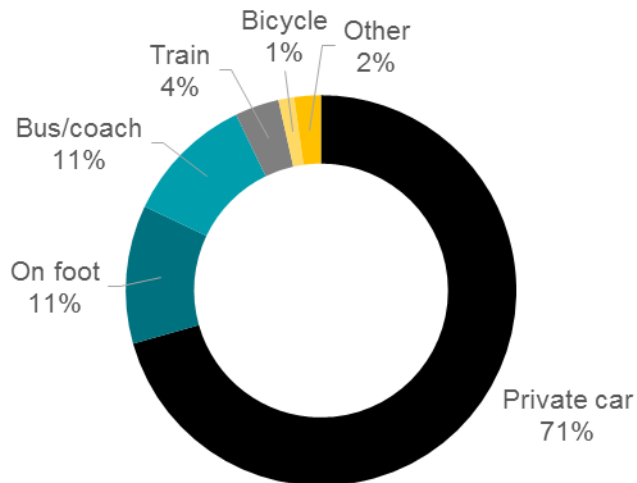
		To (place of work):									
		Barnsley	Bradford	Calderdale	Craven	Harrogate	Kirklees	Leeds	Selby	Wakefield	York
From (usual place of residence):	Barnsley		189	99	23	26	266	2,625	233	4,004	63
	Bradford	-189		-1,932	316	283	-3,948	10,551	-115	477	101
	Calderdale	-99	1,932		-2	-35	-2,809	2,587	-13	333	34
	Craven	-23	-316	2		87	7	621	-17	23	47
	Harrogate	-26	-283	35	-87		-77	2,462	-407	10	-357
	Kirklees	-266	3,948	2,809	-7	77		12,775	-57	1,894	95
	Leeds	-2,625	-10,551	-2,587	-621	-2,462	-12,775		-4,146	-8,886	-2,441
	Selby	-233	115	13	17	407	57	4,146		521	3,288
	Wakefield	-4,004	-477	-333	-23	-10	-1,894	8,886	-521		-39
	York	-63	-101	-34	-47	357	-95	2,441	-3,288	39	

Source: Census 2011

Travel to Work in West Yorkshire

Private car dominates commuting in the region with almost 70% of the region's residents travelling to work by car.

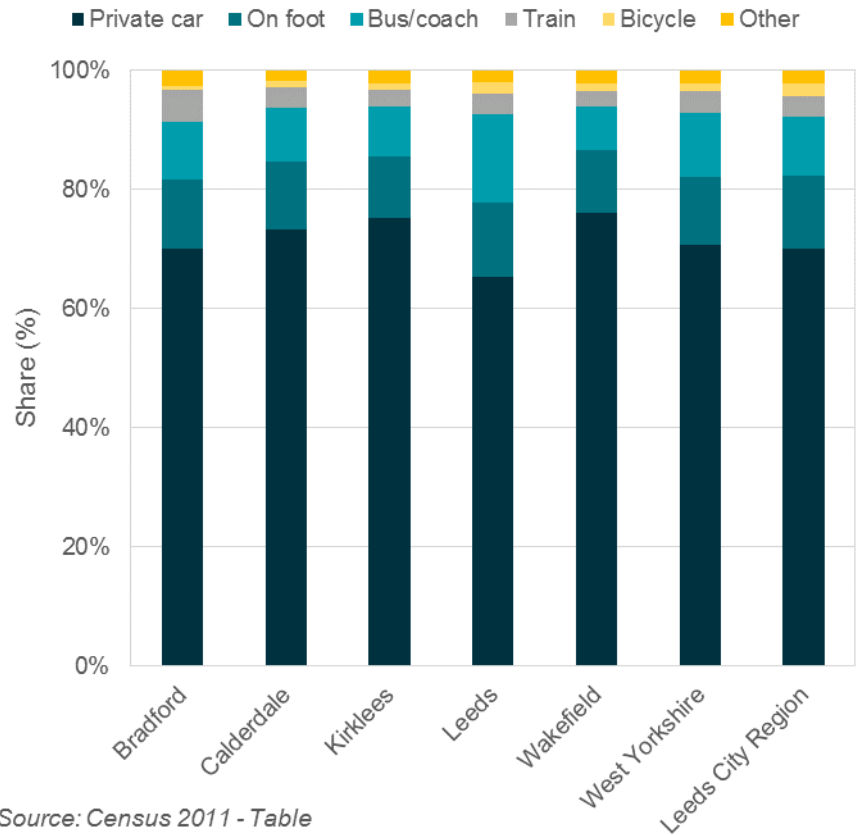
West Yorkshire Residents' Method of Travel to Work



Source: Census 2011 - Table QS701EW

Source: Census 2011

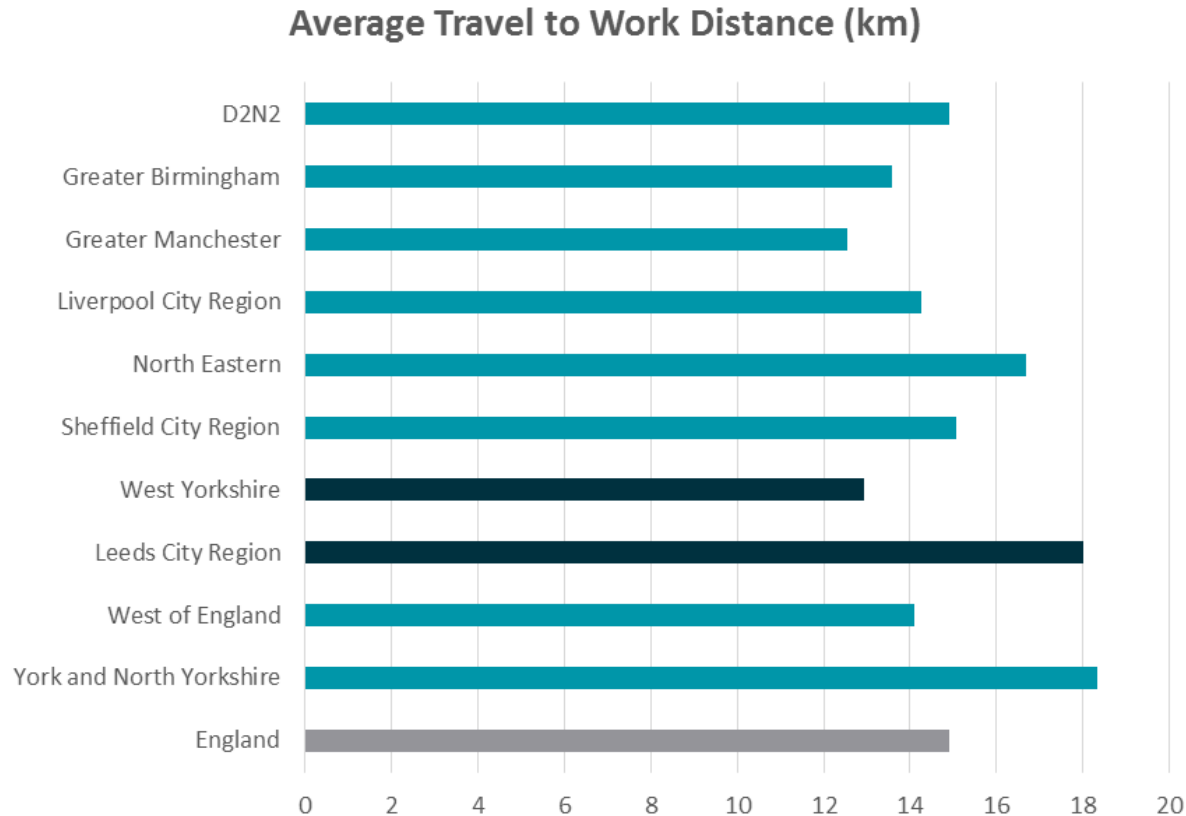
Method of Travel to Work by Place of Usual Residence



Source: Census 2011 - Table QS701EW

Travel to Work – Commuting Distances

The average commute in West Yorkshire is just under 13km, lower than the England average of 15km (data from 2011 Census). In contrast, the average distance travelled to work is 18km in wider City Region, which accounts for its geographic footprint and the nature of its dispersed towns and villages in districts just as Craven, Harrogate and Selby.



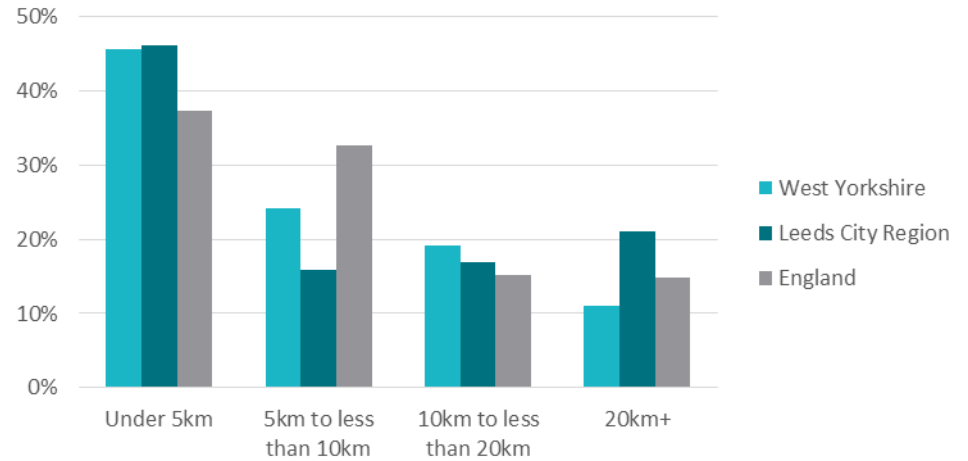
Travel to Work within District

The proportion of commuting trips under 5km is almost 10% above the national average in both West Yorkshire and the wider Leeds City Region.

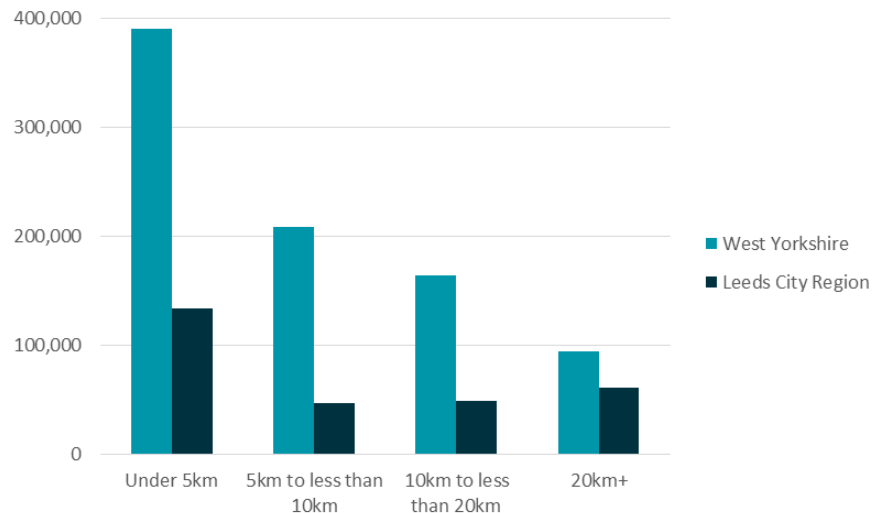
The City Region has a high proportion of people travelling over 20km as part of their daily commute.

West Yorkshire has also almost three times as many commuters as the North Yorkshire districts in the Leeds City Region, the majority of whom travel under 5km.

Travel to Work Distance

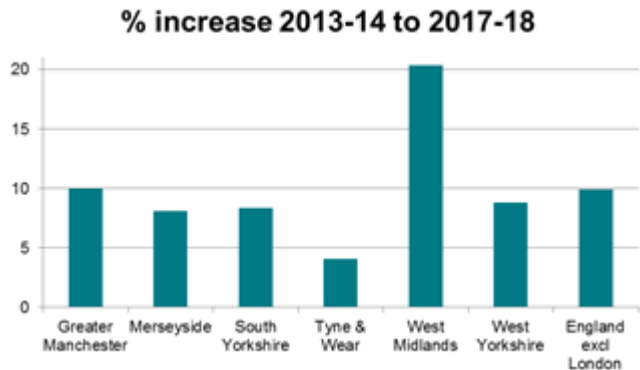


Travel to Work Region Split



Rail & Active Travel

Almost **1 in 5 residents** of West Yorkshire **live within 1km** of one of the area's **69 rail stations**, however data from the last census revealed **that rail's modal share of commuters is just 4%** (less than the national average).



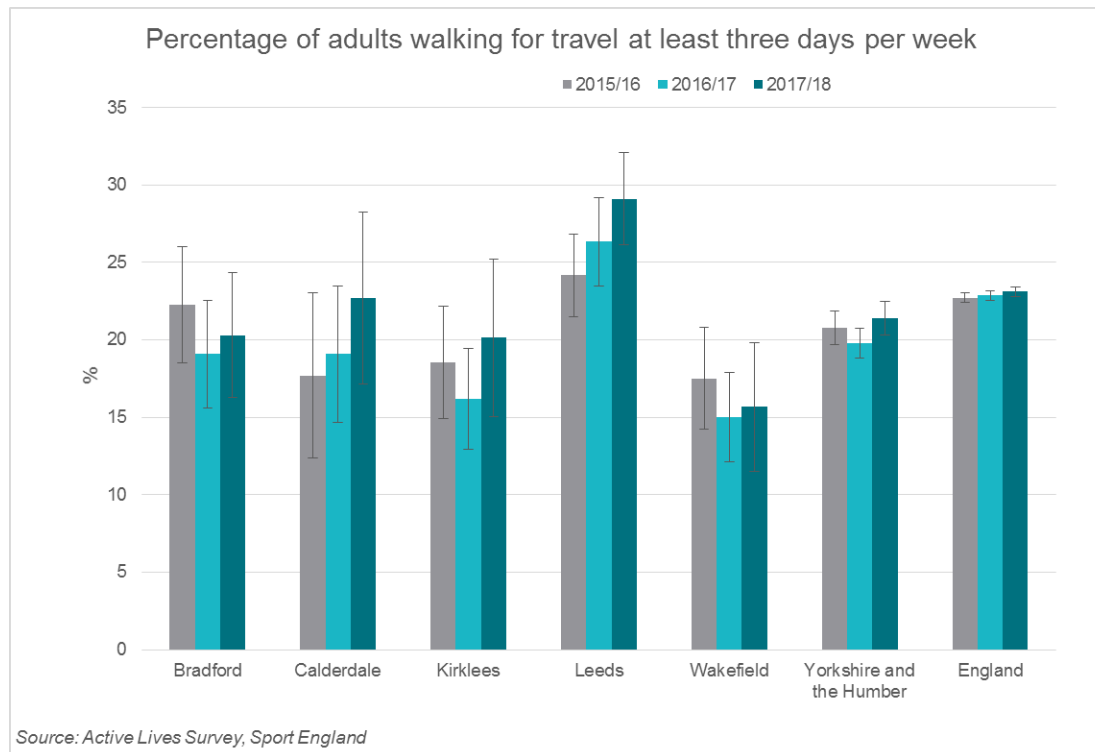
Rail use, both nationally and locally is growing, despite recent poor performance indicators. Station usage data reveals that growth has been less strong in West Yorkshire compared to England overall. Leeds station accounts for 43% of all station entries and exits in West Yorkshire.

Northern Powerhouse rail (NPR) and **High Speed 2 (HS2)** are expected **grow the North's economy** by creating jobs, (including better quality jobs) which are forecast to result in productivity uplift as well as unlocking areas of commercial development and strengthening the property market.

Rates of **active travel** (walking and cycling) - important for people's health, quality of life, the environment, and with implications for productivity - **are lower than the England average**. Within the area **active travel is most prevalent in York**, which has the fifth highest rate of cycle commuting in England.

Active Travel – Walking Trends

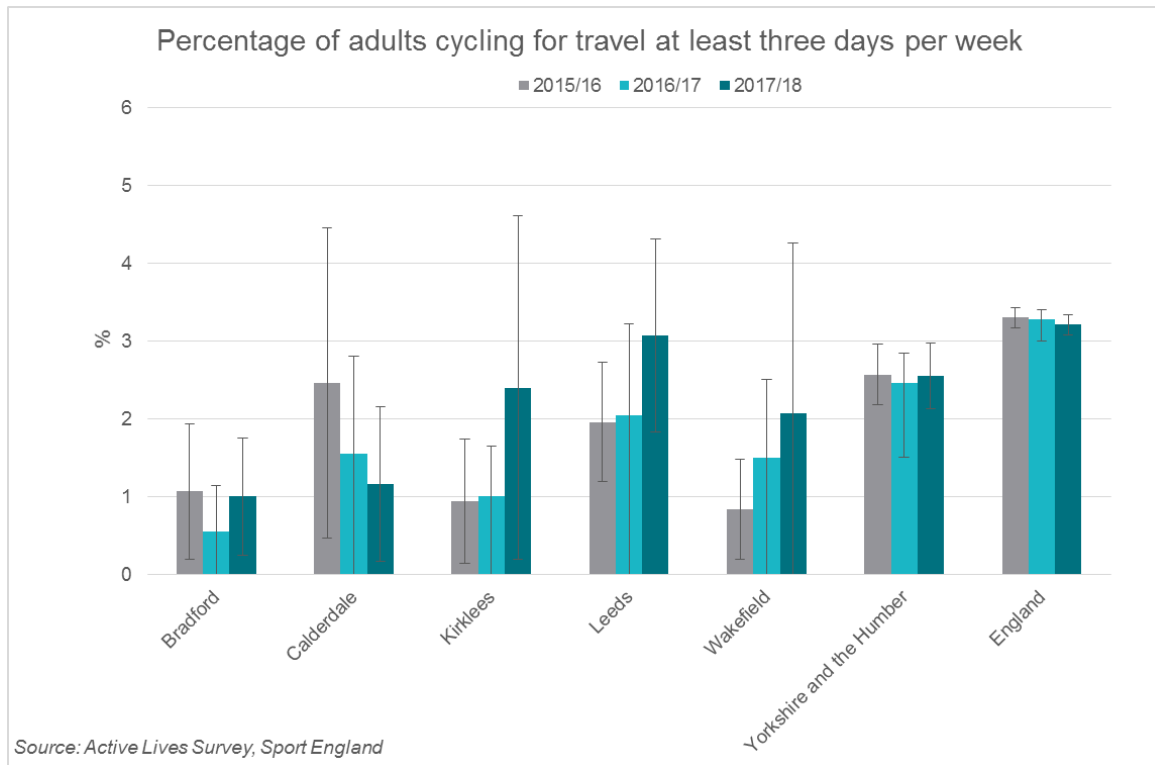
In 2017/18, 21.4% of adults in Yorkshire and the Humber said they walked for travel at least 3 days per week, *significantly* lower than the England average (23.1%), which compares to 36% in London. Leeds has a *significantly* greater proportion of adults who walk for travel at least 3 days per week (26%) compared to the England average. In contrast, Wakefield has *significantly* fewer proportion of adults who walk for travel at least 3 days per week compared to the England average.



Error bars denote 95% confidence intervals.

Active Travel – Cycling Trends

In 2017/18 around 2.6% of adults in Yorkshire and the Humber said they cycled for travel at least 3 days per week, significantly lower than the England average (3.2%). Within West Yorkshire, Bradford and Calderdale have a significantly fewer proportion of adults who cycle for travel at least 3 days per week compared to the England average.



Within the wider city region, cycling is more prevalent in York, where 8.1% of adults reported cycling for travel at least 3 days per week.

Error bars denote 95% confidence intervals.

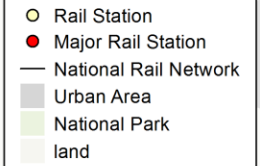
The Rail Network

This map highlights the extent of the rail network, revealing the connections between the major towns and cities with the area.

Almost **1 in 5 residents** of West Yorkshire live **within 1km** of one of the area's **69 rail stations**.

The Williams Rail Review¹ identifies the following benefits of rail:

- Economic benefits: Labour market mobility, Facilitating housing development, Social mobility, Easing road congestion
- Wider environmental benefits: Greenhouse gases, Local air quality, Noise pollution
- An industry in its own right, and potential export opportunity for railway suppliers



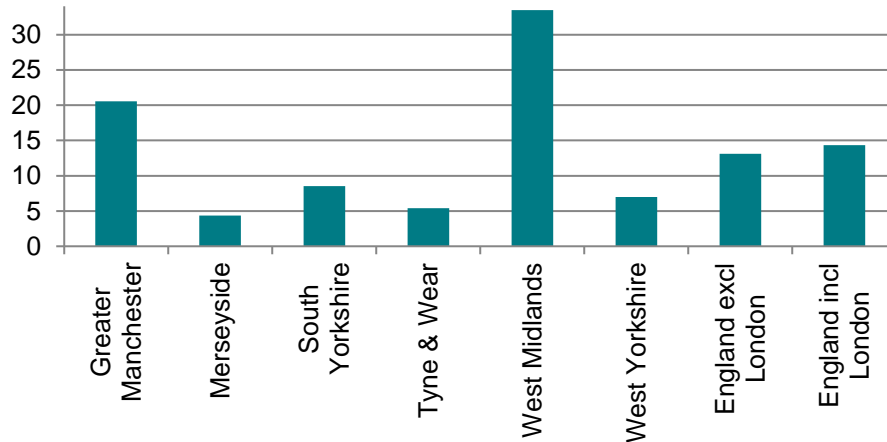
West Yorkshire contains key **North-South and East-West rail intersections** and commuting by rail is important to West Yorkshire's urban centres

The rail network is used by **4% of commuters** (less than the national average) and **95% of these commutes** are **wholly within the region**.



Recent Growth in Passenger Usage

% increase 2013-14 to 2018-19



Data from the Office of Road and Rail (ORR) indicates that general growth in station entries and exits, though this has been less strong in West Yorkshire than in the rest of England. The growth over 6 years masks that West Yorkshire is showing a 4-year low*, possibly impacted by increased service disruption.

Within West Yorkshire strongest growth is shown in Leeds.

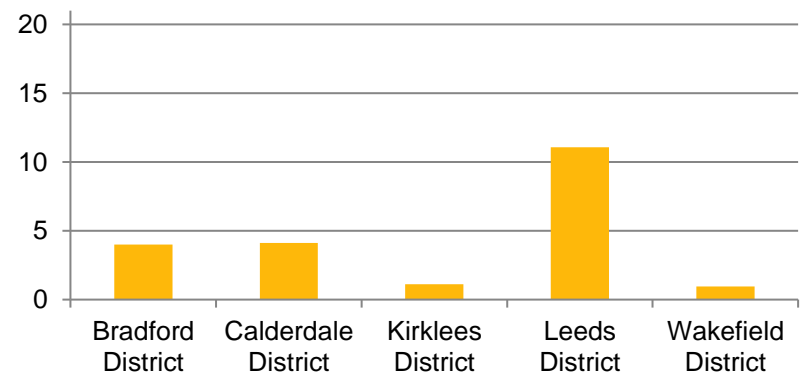
It is possible that the Leeds growth being stronger than the rest of West Yorkshire reflects an increase of journeys between Leeds district and other areas rather than an increase of journeys within Leeds District.

It could also reflect changes of pattern in West Yorkshire, e.g. a Shipley-Bradford passenger would count as entry plus exit in Bradford district whereas Shipley-Leeds would count as entry in Bradford and exit in Leeds district.

It could also be the use of Leeds as a long-distance hub.

The detail behind the figures is commercially withheld data.

% increase 2013-14 to 2018-19



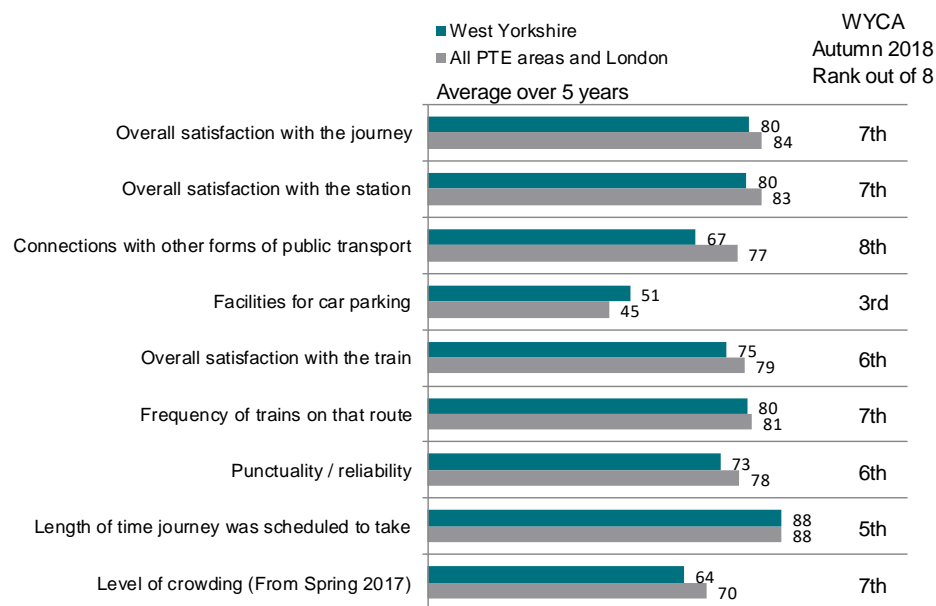
Overcrowding and low passenger satisfaction are key challenges for the rail industry in the area

Train occupancy data is published for a selection city centres (bottom left table), including Leeds, and the data indicates that crowding in Leeds is not as severe as some other cities. However, Transport Focus survey results¹ reveal that passengers perceptions of rail journeys, stations, and services in West Yorkshire are below average for PTE areas (bottom right table), suggesting that work is required to make West Yorkshire a more attractive place for rail travel.

Standing Passengers	High Peak Hour		Peak 3 Hours	
	Arrivals (08:00-08:59)	Departures (17:00-17:59)	Arrivals (07:00-09:59)	Departures (16:00-18:59)
Liverpool	3.8%	2.7%	2.7%	2.2%
Reading	5.4%	3.0%	2.5%	1.3%
Newcastle	7.0%	6.0%	3.4%	4.3%
Leicester	2.5%	10.3%	1.1%	6.6%
Nottingham	3.8%	9.1%	2.6%	5.8%
Bristol	2.9%	4.6%	3.2%	6.9%
Sheffield	8.5%	7.3%	4.8%	4.7%
Brighton	9.2%	7.9%	6.9%	5.5%
Cardiff	14.3%	14.2%	11.7%	10.4%
Leeds	15.1%	13.3%	12.2%	10.5%
Manchester	21.1%	9.6%	15.1%	10.0%
Birmingham	19.7%	16.3%	14.7%	11.8%
Cambridge	21.6%	14.4%	16.0%	13.9%
London	28.1%	17.0%	22.9%	15.8%

Source: Department for Transport Rail Statistics, Table RAI0212 2018 data, published July 2019

Passenger Satisfaction 5 year average (Percent)



Rail Freight Strengths & Weaknesses

The externality benefits of more rail freight are largely through lower road congestion than would otherwise exist, and rail freight reduces carbon emissions by 76% compared to road haulage.

Strengths

- Intermodal containers and piggy back off road vehicles
- Bulk commodities (whole train load such as coal mine to power station)
- Materials for maintenance of the railway itself

Weaknesses

- Most freight needs local distribution by road, the need for transshipment to / from road vehicles adds an inefficiency
- Physical clearances restrict opportunities for full size shipping containers
- Rail freight is often the 'poor relation' to passenger services given the customer and political pressure that they bring to bear.

	High-level estimate of direct productivity benefits	High-level estimate of externality benefits	High-level estimate of total economic benefits
North West	£224 million	£106 million	£331 million (19% of total)
Yorkshire & Humber	£220 million	£104 million	£324 million (19% of total)
Great Britain	£1,173 million	£556 million	£1,729 million

Source: "Rail freight in GB: Productivity and other economic benefits" report by KPMG, 12 January 2018, quoted by Rail Delivery Group in their report "Rail Freight Working for Britain".

Road Freight

Around 80% of road freight in the North is domestic traffic, and most of this is 'short haul'.

It is difficult to justify the use of rail on commercial or efficiency grounds for most short-haul freight (the time penalty of loading and unloading tends to mean that rail is more suited to long-haul freight or train-load bulk freight). This in turn places a heavy burden on the Northern Strategic Road Network and the local Key Route Network.

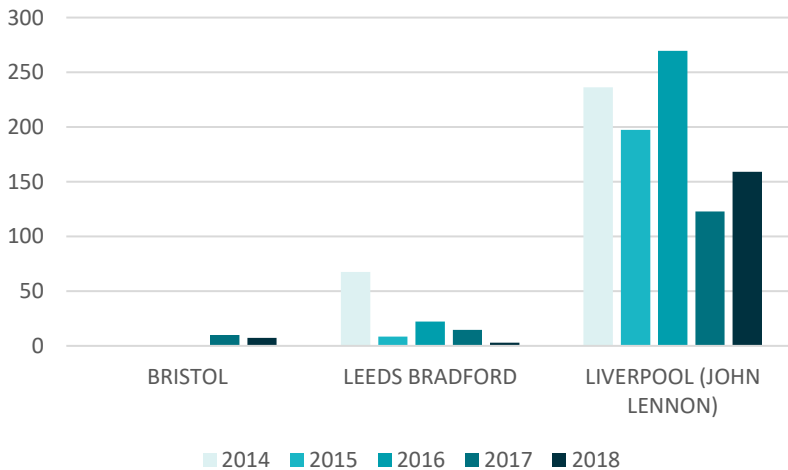
The rise in small deliveries to peoples homes is cited as one cause of an increase in the number of small delivery vehicles and the miles they operate

Aviation – Freight

- Freight is the weight of property carried on an aircraft not including passenger luggage or mail.
- Leeds has the smallest amount of freight handled in the years 2014 – 2016.
- Leeds Bradford airport saw a 79% reduction in freight handled between 2017 – 2018



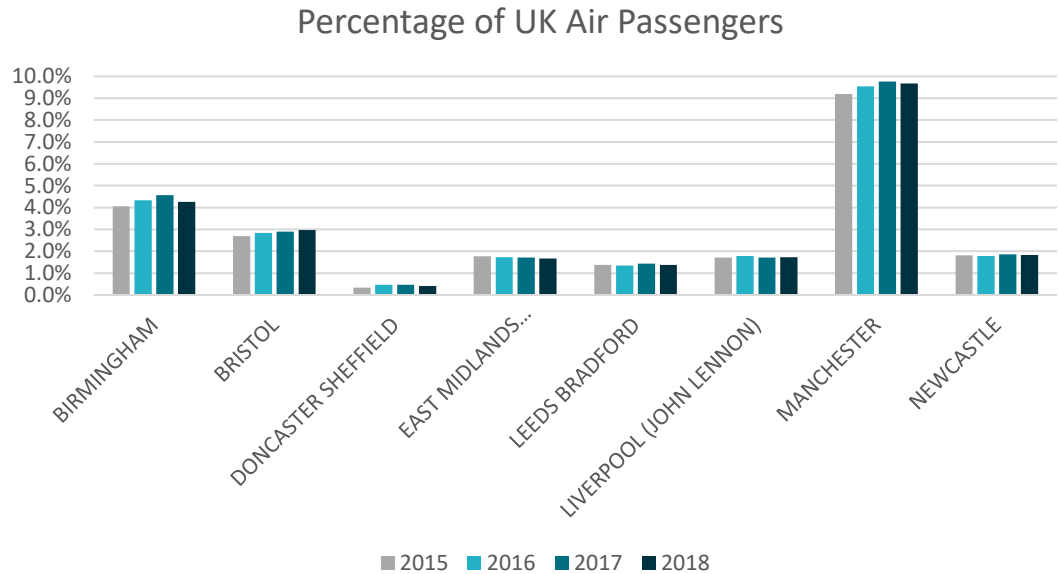
Freight Handled (Tonnes)



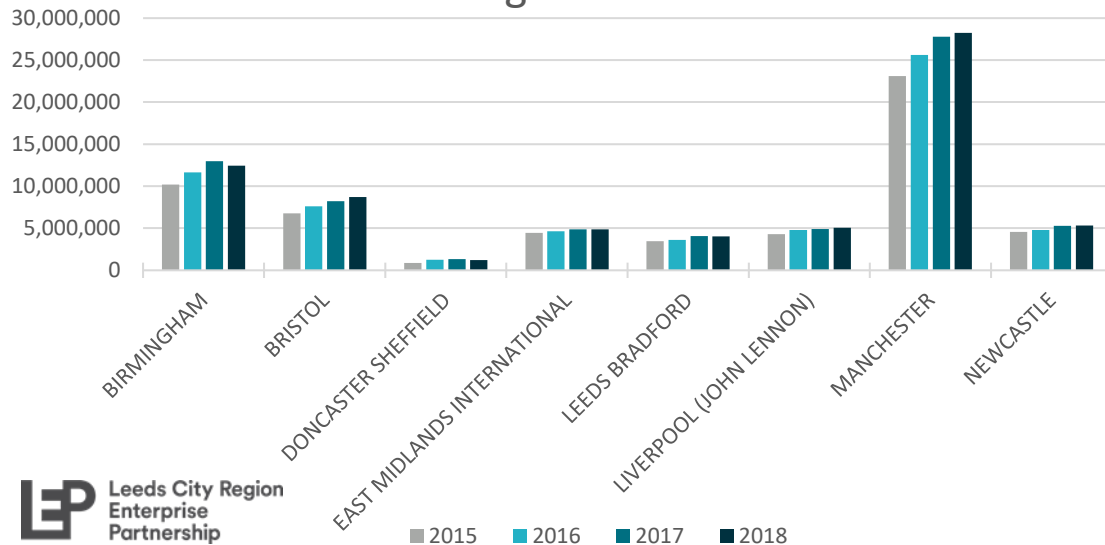
- East Midlands and Manchester have the highest amounts of Freight passing through them.
- In 2018 334536.17 tonnes of freight passed through East Midlands Airport.
- This compares to just 3 tonnes going through Leeds Bradford Airport.
- East Midlands handles more than double the amount of freight than the second largest airport for this comparison.

Aviation passenger Numbers

- In terms of passenger share, Manchester Airport is larger than any other airport in a comparator LEP area. It accounts for over 9% of UK air passengers.
- Between 2015 – 2018 Leeds Bradford Airport has an average of 1.4% of the UK's air passengers. This is the second lowest percentage share of the comparison LEPs with Doncaster Sheffield with 0.4%



Passenger Numbers

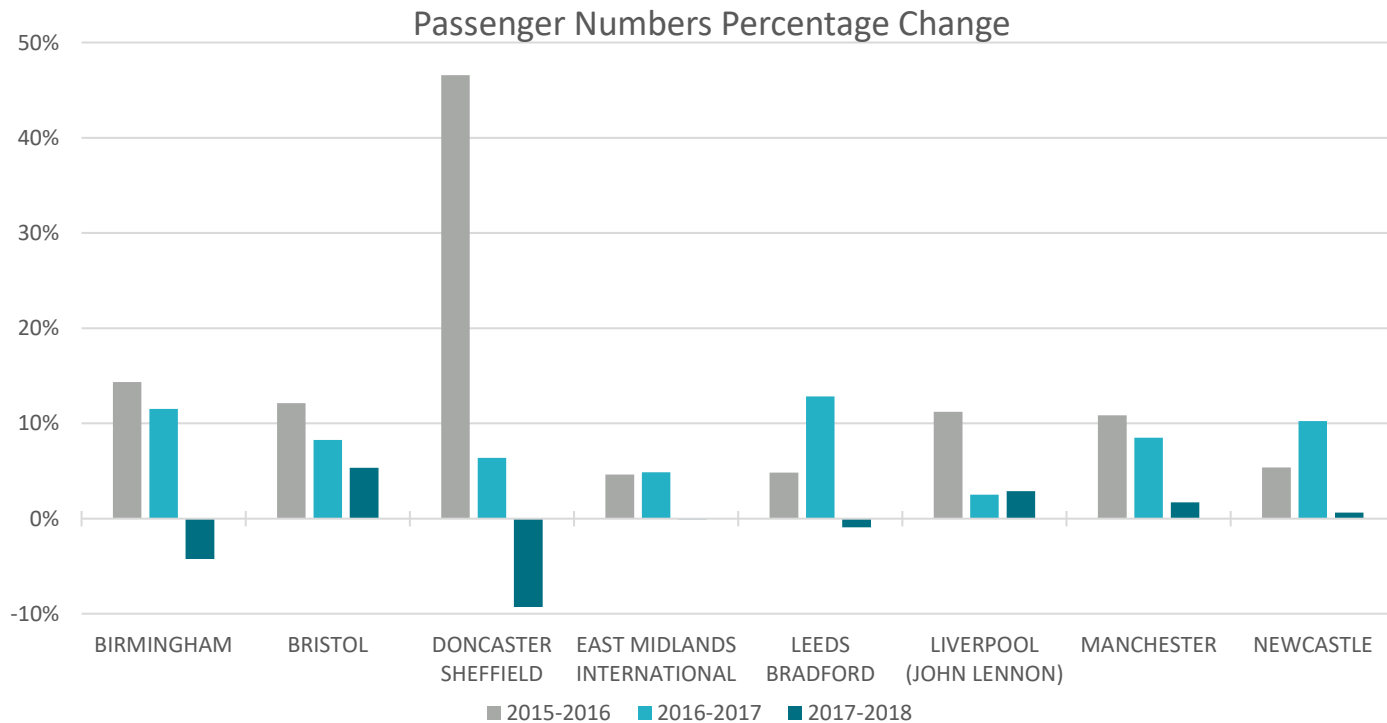


- Leeds Bradford Airport in 2018 had the second lowest number of passengers with over 4.03 million, Doncaster Sheffield was the smallest by passenger numbers with 1.2 Million.
- This is compared to over 12.4 million using Birmingham Airport and 28.2 million at Manchester Airport.

Aviation passenger numbers – change

The national passenger numbers increased by 7.6 million to 292.24 million between 2017 to 2018, however in the last 3 years (2015-2018), Leeds Bradford Airport passenger numbers have decreased by 1%.

Some airports in comparator LEP areas have seen a greater reduction; -9% at Doncaster Sheffield Airport, whilst others have seen an increase in passenger numbers; 5% at Bristol Airport.



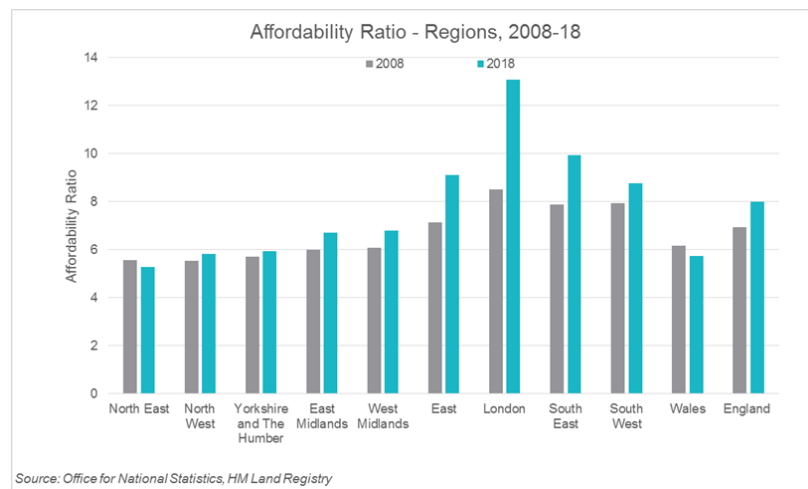
Housing – growth in private renting and the price gap widens

Between 2001 and 2011, West Yorkshire (similar to national trends) has seen a **decrease in the proportion of owned (outright & mortgage) and social rented properties**, and a 5.2% increase in the number of privately rented properties.

Housing sales in West Yorkshire are still recovering from the 2008/09 recession **and prices in the area lag behind the England average** (£153,000 vs £236,000) - although this is skewed by the high prices in London and the South-East - and over the last 20 years **the gap between house prices in Yorkshire and the Humber and England has widened**. Locally there is **considerable spatial variation in average house prices**, which correlate with deprivation, which in turn means inequality of the wealth effect.

At the broader level, **housing affordability hasn't changed considerably over the last decade**, however **there is spatial variability**.

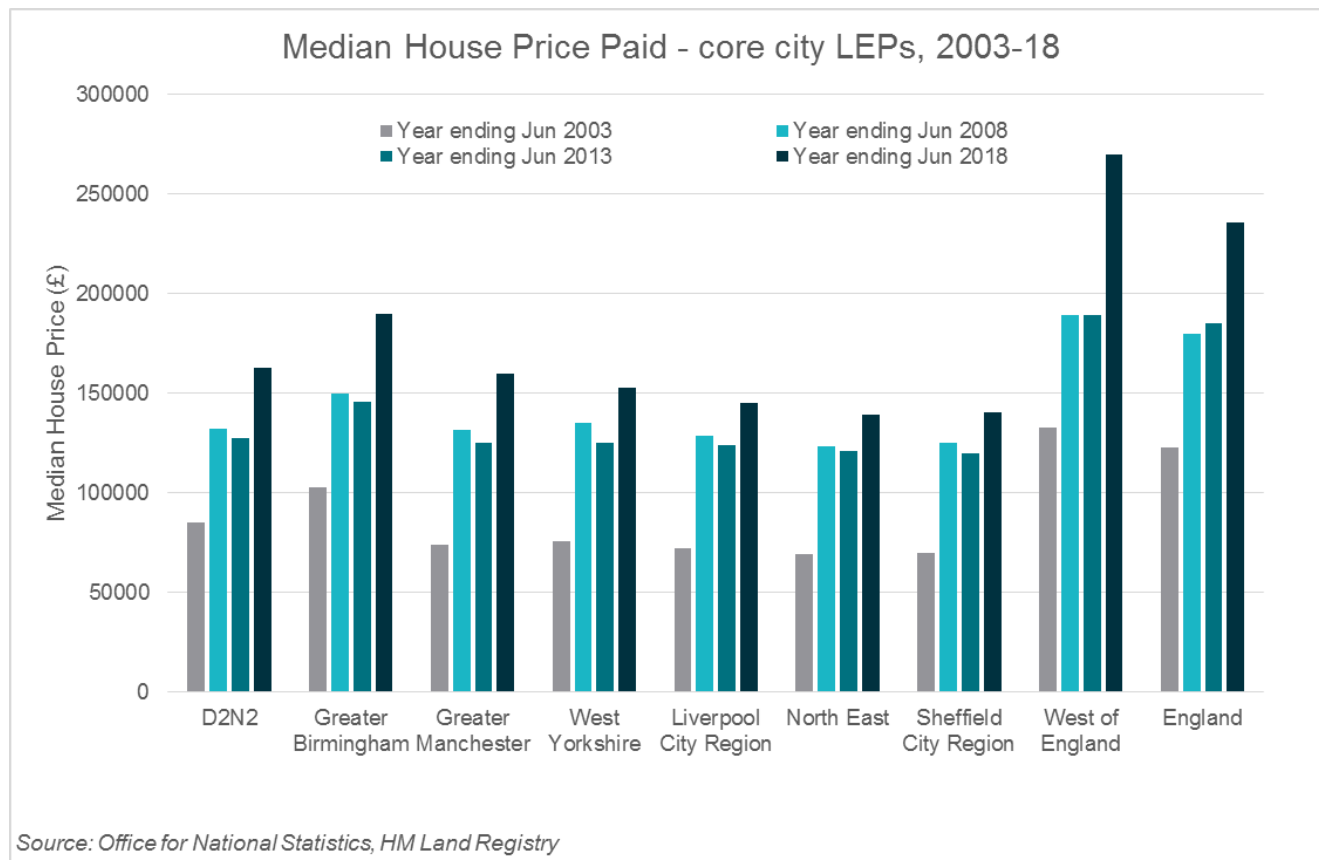
The average (median) house price in London is **equivalent to 13 times gross annual earnings**, and in comparison in Yorkshire and the Humber **the average (median) house price is 6 times gross annual earnings**.



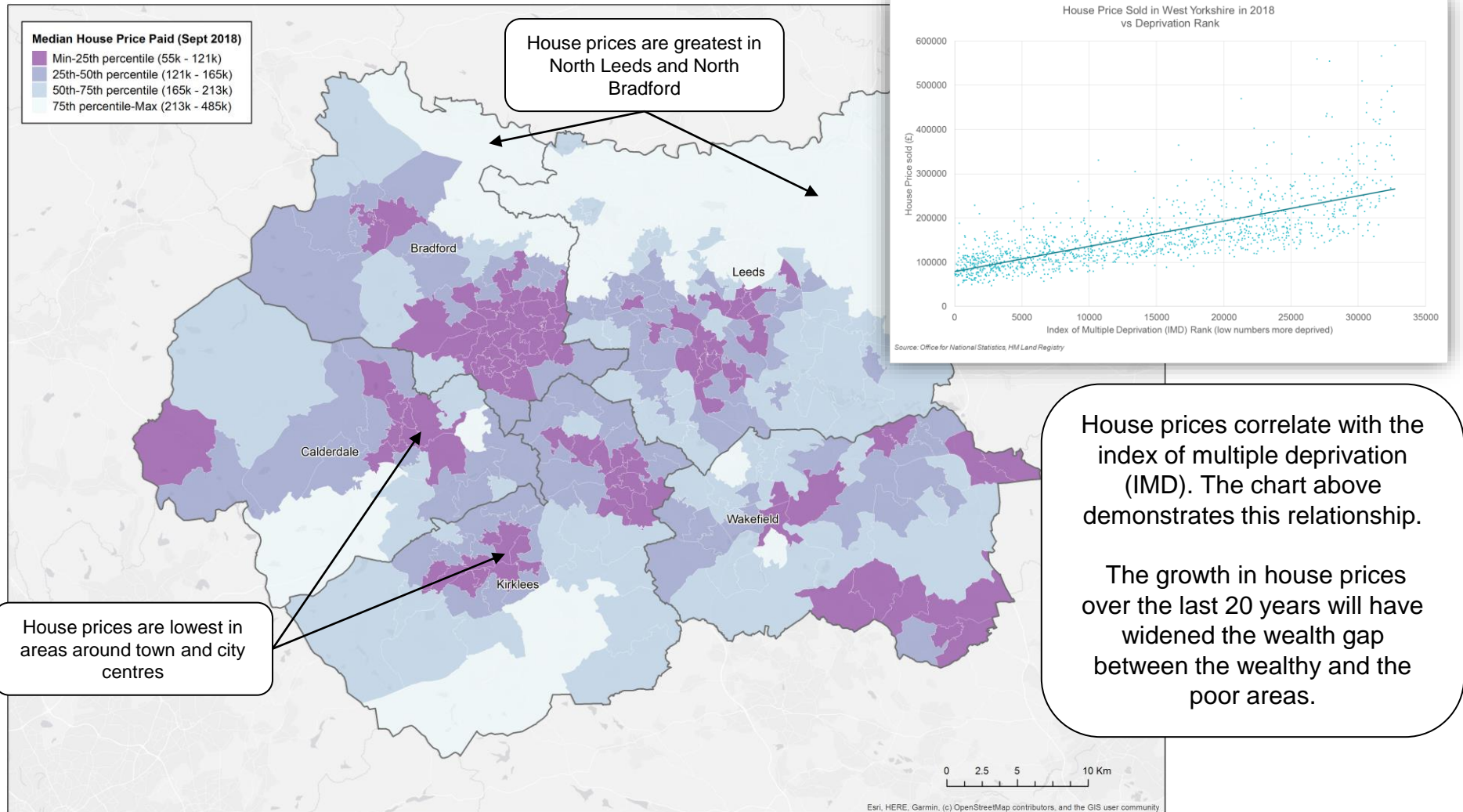
West Yorkshire house prices are significantly lower than the national average

In June 2018 the median house price paid in West Yorkshire was £153,000, which compares to the England average of £236,000 – a difference of £83,000.

The England average house price paid is skewed by London (£467,000) and the South East (£320,000).

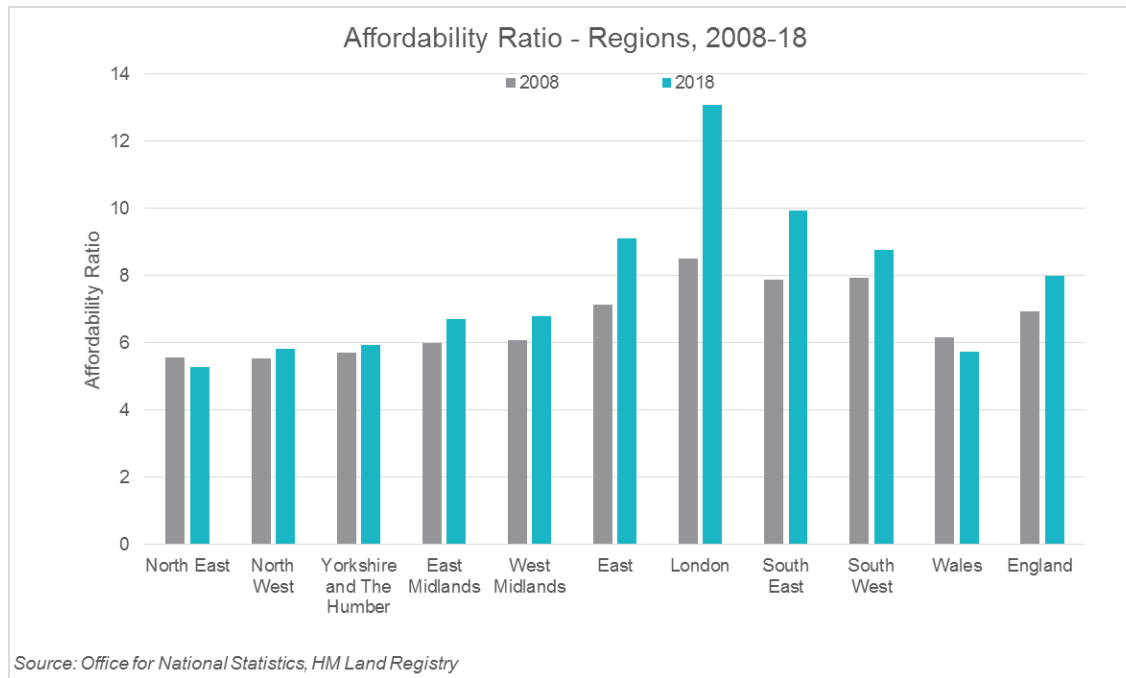


There is considerable spatial variation in house prices within West Yorkshire



Affordability - regional

By dividing the median house price for a given area by the average gross annual earnings of that area results in a ratio which serves as a simple indicator of relative housing affordability. A higher ratio means housing is less affordable relative to earnings, and a lower ratio means houses are more affordable relative to earnings.



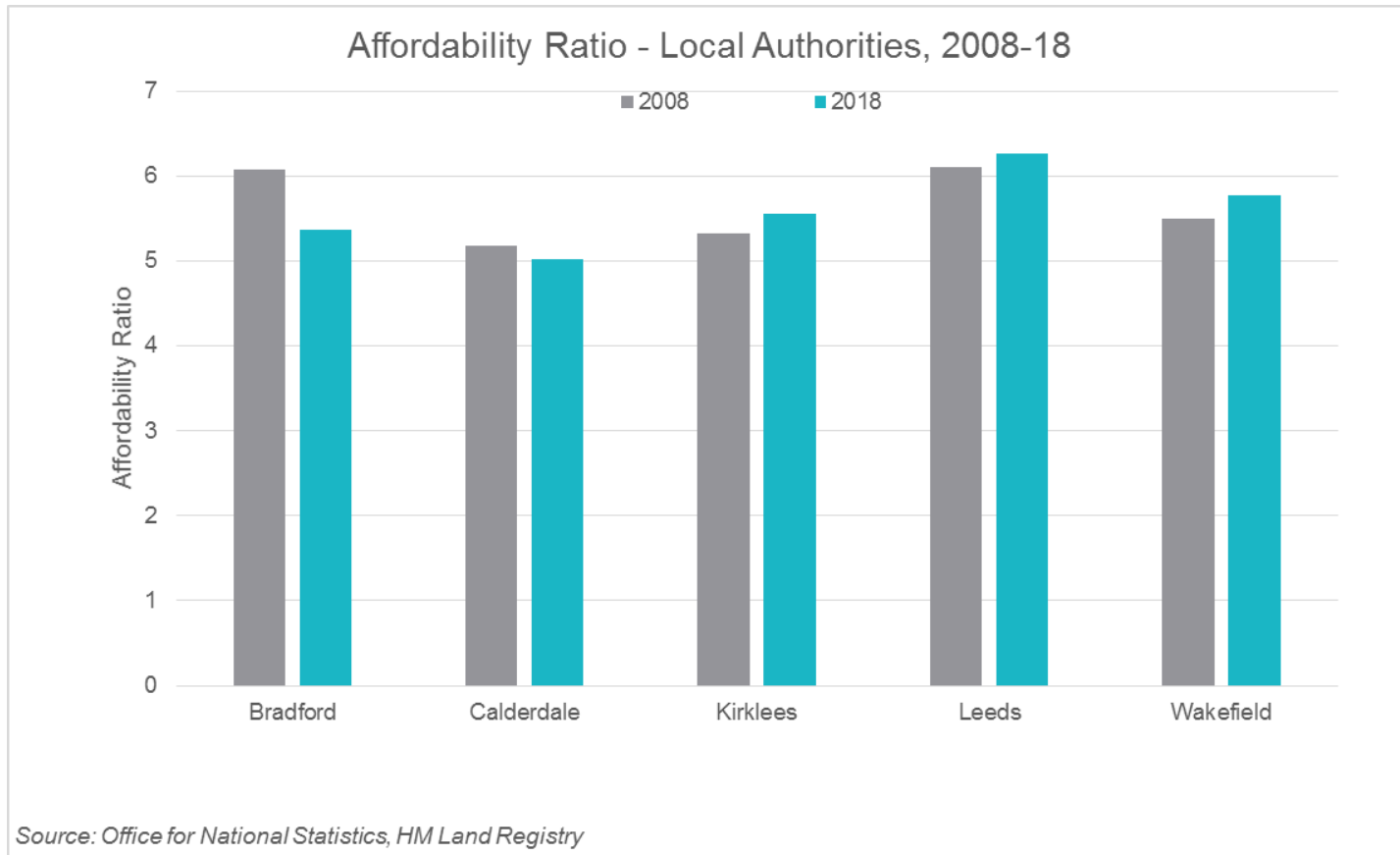
The greatest changes in affordability ratios in the last decade (2008-2018) are in London, the East and South-East, reflecting the growth in house prices in these areas.

Yorkshire and the Humber saw only a slight increase in affordability ratio in the last decade.

To put this in context the average (median) house price in London is equivalent to 13 times gross annual earnings, and in comparison in Yorkshire and the Humber the average (median) house price is 6 times gross annual earnings.

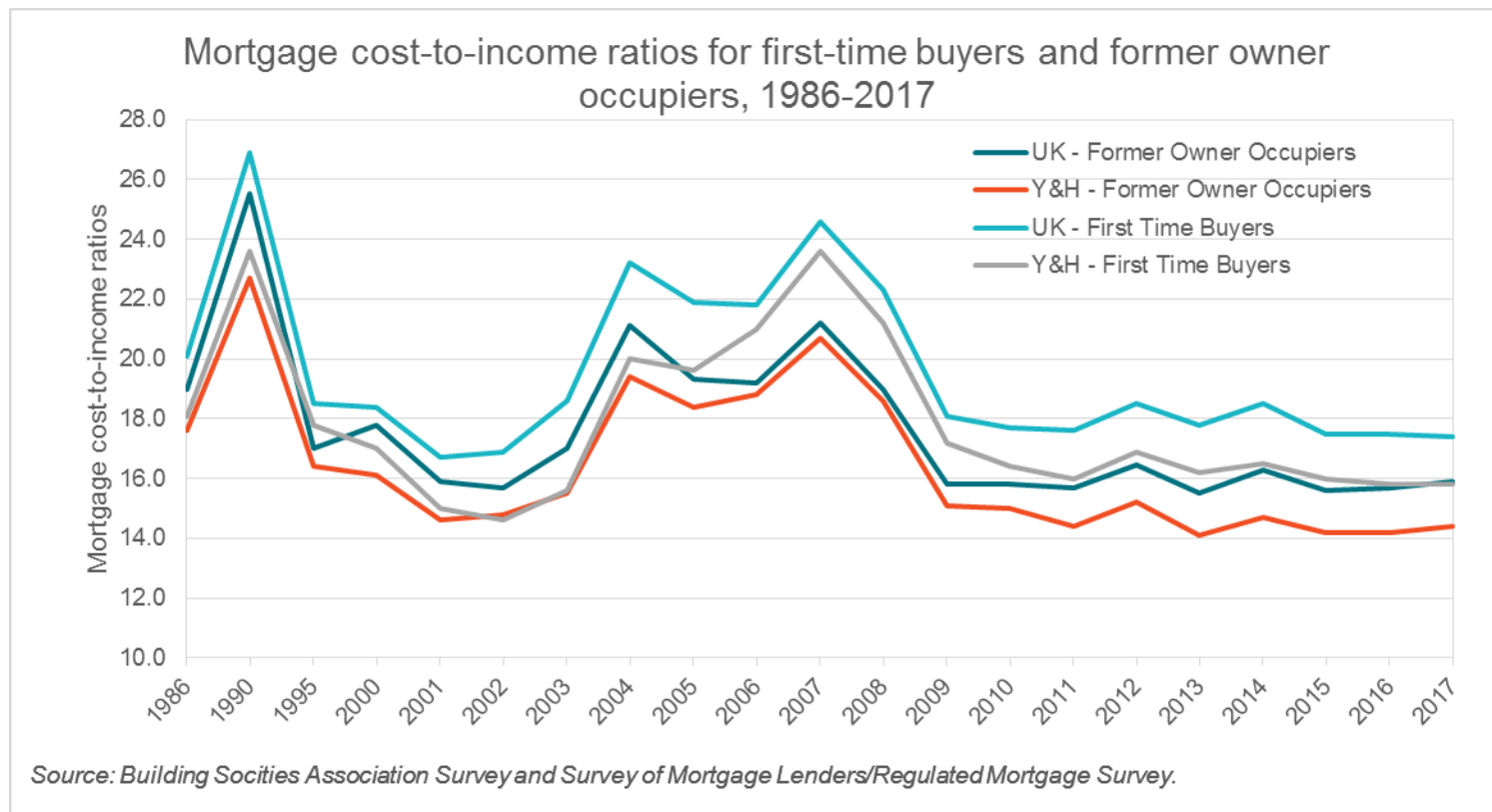
Affordability - local

Within West Yorkshire in the last decade (2008-2018), houses have become more affordable in Bradford, this is because house price growth has been below regional average and whilst growth in annual earnings has been above average.



Affordability – first time buyers

In 2017 the average cost-to-income ratio for First Time Buyers (FTBs) in Yorkshire and the Humber was 15.8, down from 23.6 at the market's last peak in 2007. This value has fallen slightly in recent years, but has been relatively stable since the recession. For comparison, the lowest cost-to-income ratios in 2017 were in the North East (14.7) and the highest were in the South East (19).

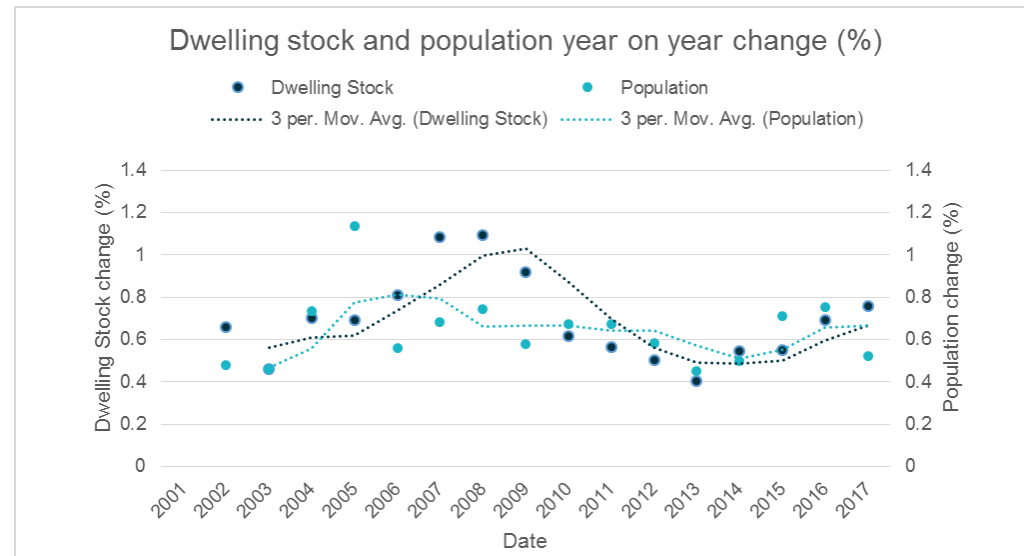
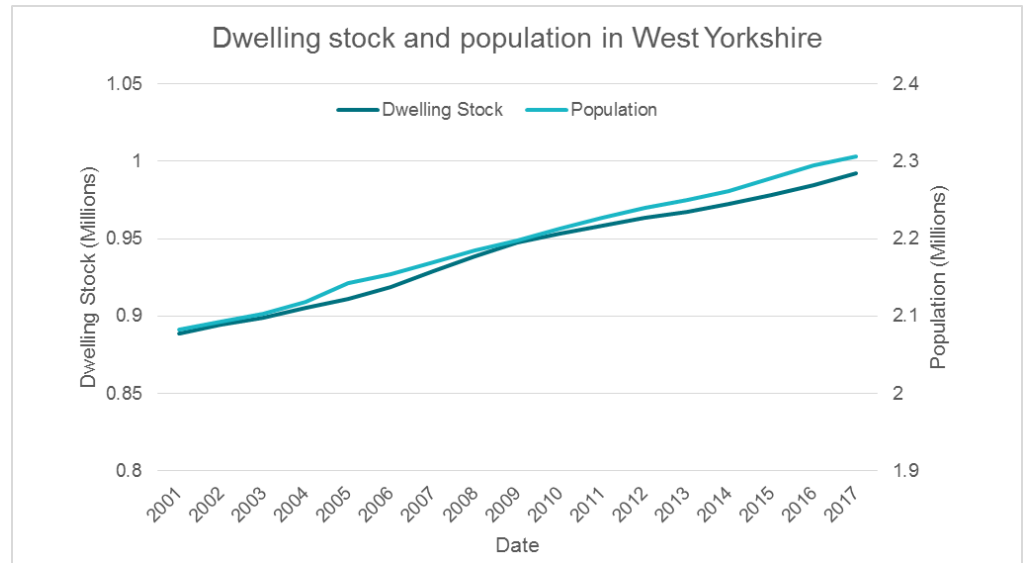


Housing Stock

In 2017 there were 992k dwellings in West Yorkshire, supporting a population of 2.3 million.

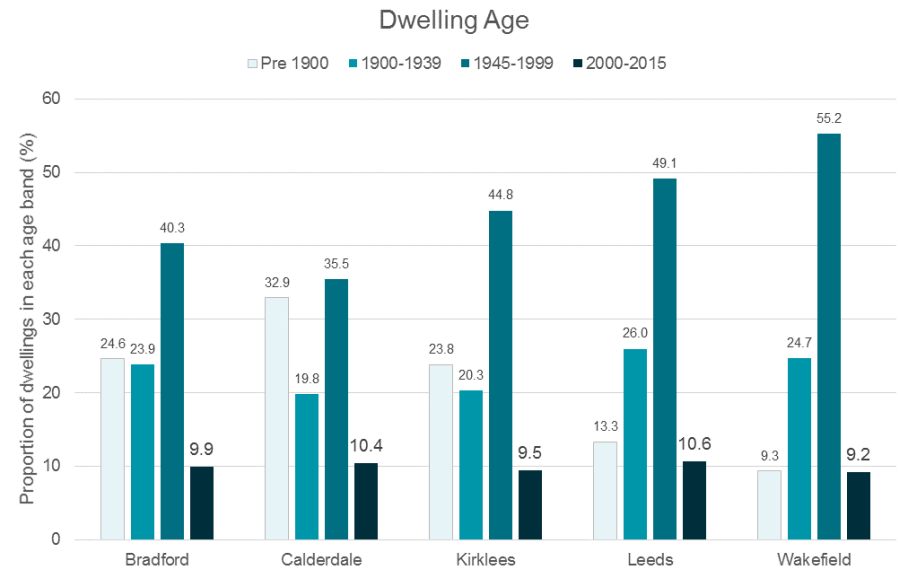
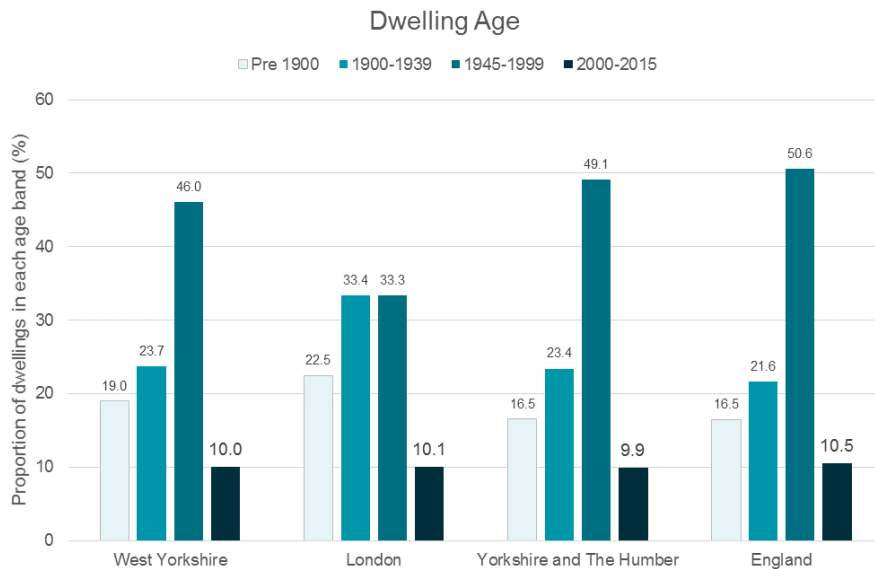
Between 2001 and 2017 housing stock in West Yorkshire increased by 103k and in the same period the population grew by 223k.

	5 year average growth rate (%)	
Area	Housing Stock	Population
Bradford	0.42	0.34
Calderdale	0.34	0.33
Kirklees	0.40	0.43
Leeds	0.57	0.63
Wakefield	0.77	0.67
West Yorkshire	0.6	0.6



Dwelling Age

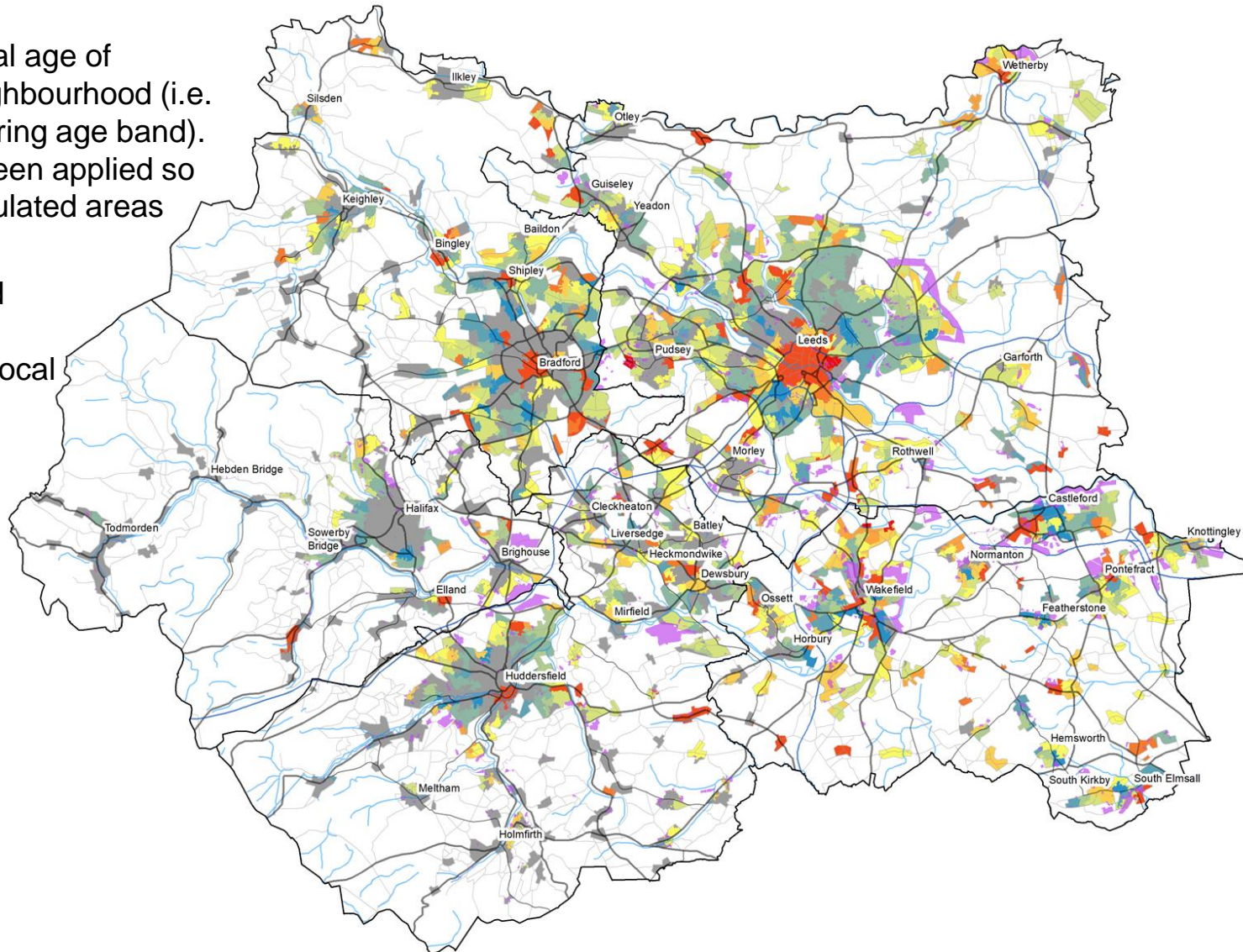
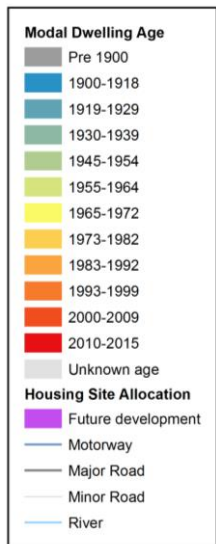
Dwelling age data from the Valuation Office Agency and the ONS (up to 2015), reveals that dwellings in Yorkshire and The Humber have a similar age structure to the England average (see chart below). In West Yorkshire, the pattern is broadly similar, but with slightly more pre-war era properties. Within West Yorkshire, Bradford and Calderdale have a high proportion of older (pre-war) dwellings and in contrast Wakefield has a greater proportion of post-war era properties (64% aged between 1945-2015).



Dwelling Age - Modal Age

This map shows modal age of dwellings in each neighbourhood (i.e. most frequently occurring age band). An urban mask has been applied so that only densely populated areas are shown.

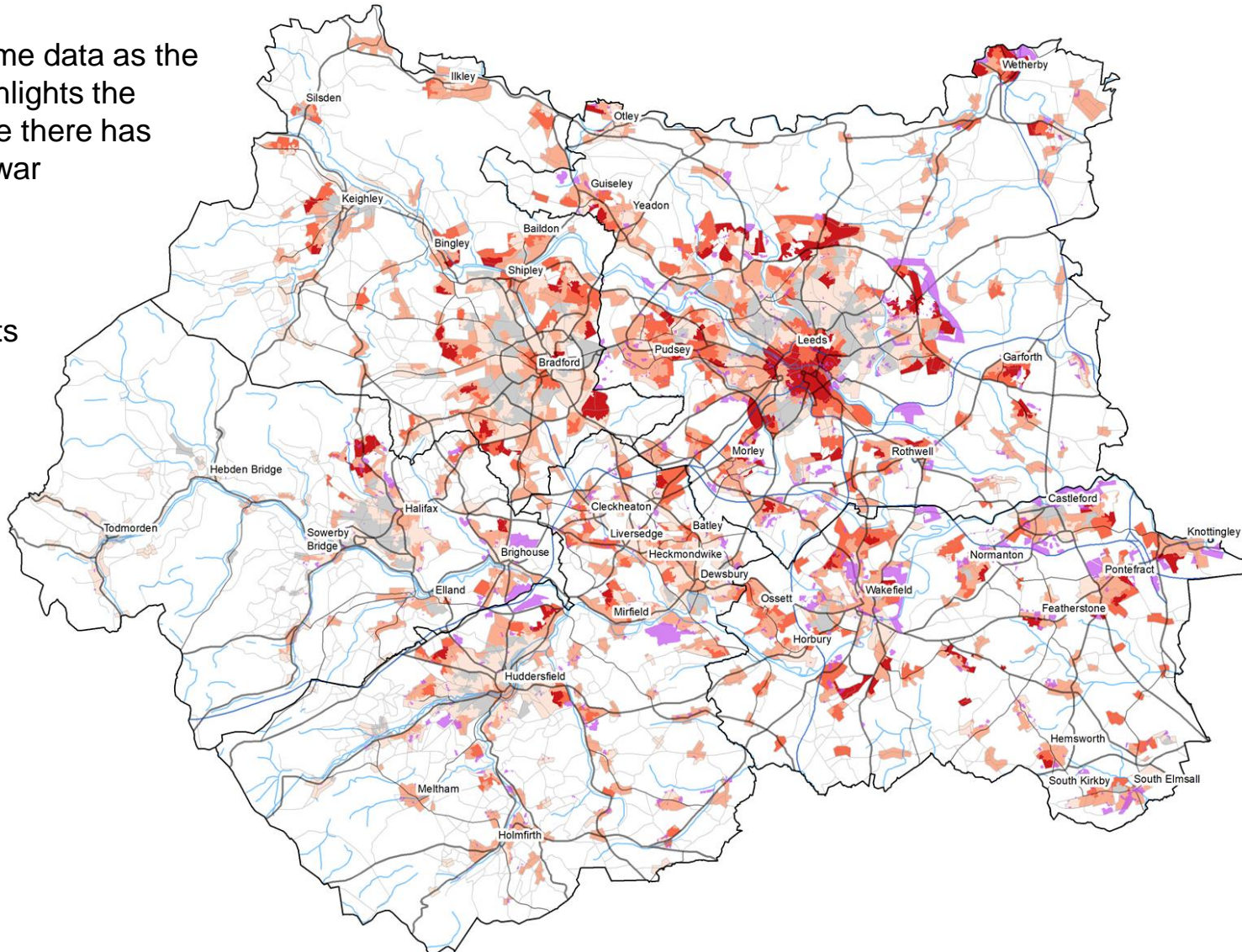
Locations of proposed future housing developments (from Local Plans) is also shown.



Dwelling Age – Post War Growth

This map uses the same data as the previous map, but highlights the neighbourhoods where there has been significant post-war development.

The data reveals that post-war developments are greatest in the suburbs of towns and cities, as well as the centre of Leeds.



Housing Quality

The Leeds City Region has a higher percentage of private sector dwellings containing fall hazards, disrepair, fuel poor households and low income households compared to England¹.

Energy efficiency of the private housing stock is, better than the England average, helping to reduce excess cold hazards for the region to below the national average¹.

17% of private sector stock is estimated to have a category 1 hazard¹, e.g. falling, excess cold, fire damp, crowding and domestic hygiene.

11% of private sector stock, and 15% in the private rented sector is estimated to have a falls hazard. The highest proportions for all private stock are in Calderdale (15%)¹.

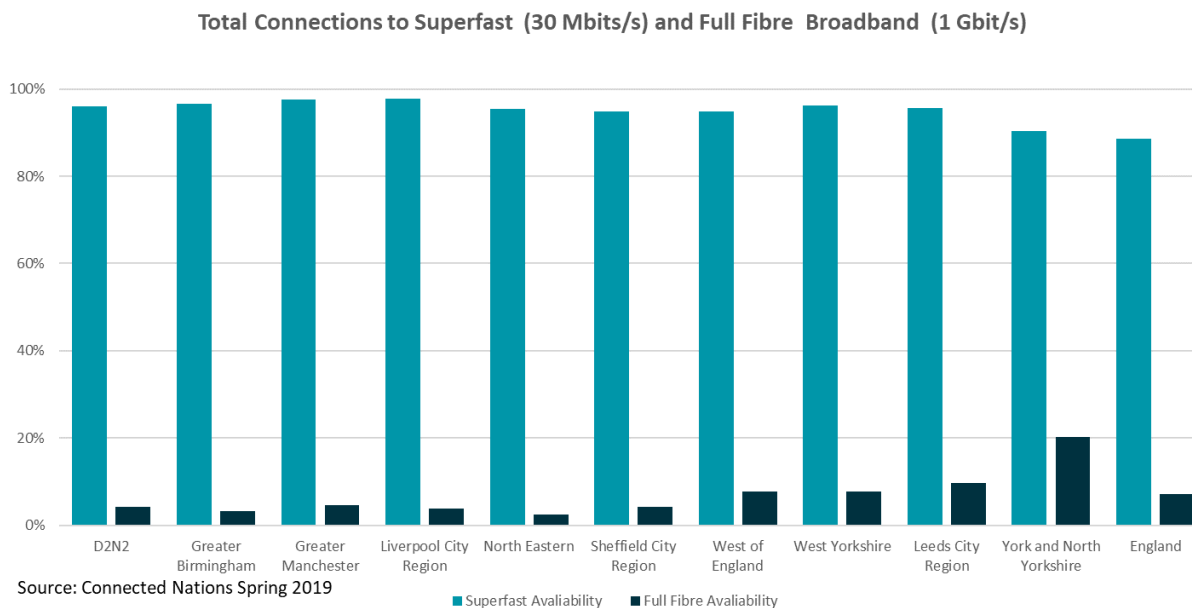
Just over a quarter of the LCR private sector stock is estimated to be occupied by low income households, with the highest proportion in Bradford. However, for the private rented sector, the highest rates are in Calderdale (51%).

Digital Connectivity in West Yorkshire

96% of properties in West Yorkshire are able to connect to Superfast Broadband (SFBB), slightly above the national average, and 8% have access to Full Fibre Broadband (FFBB).

There is little variation in access to SFBB by deprivation decile (IMD 2019), however there is some variation in access to FFBB; 10% of West Yorkshire properties in neighbourhoods in the most deprived quintile nationally have access to FFBB, whereas this increases to 18% in the least deprived quintile.

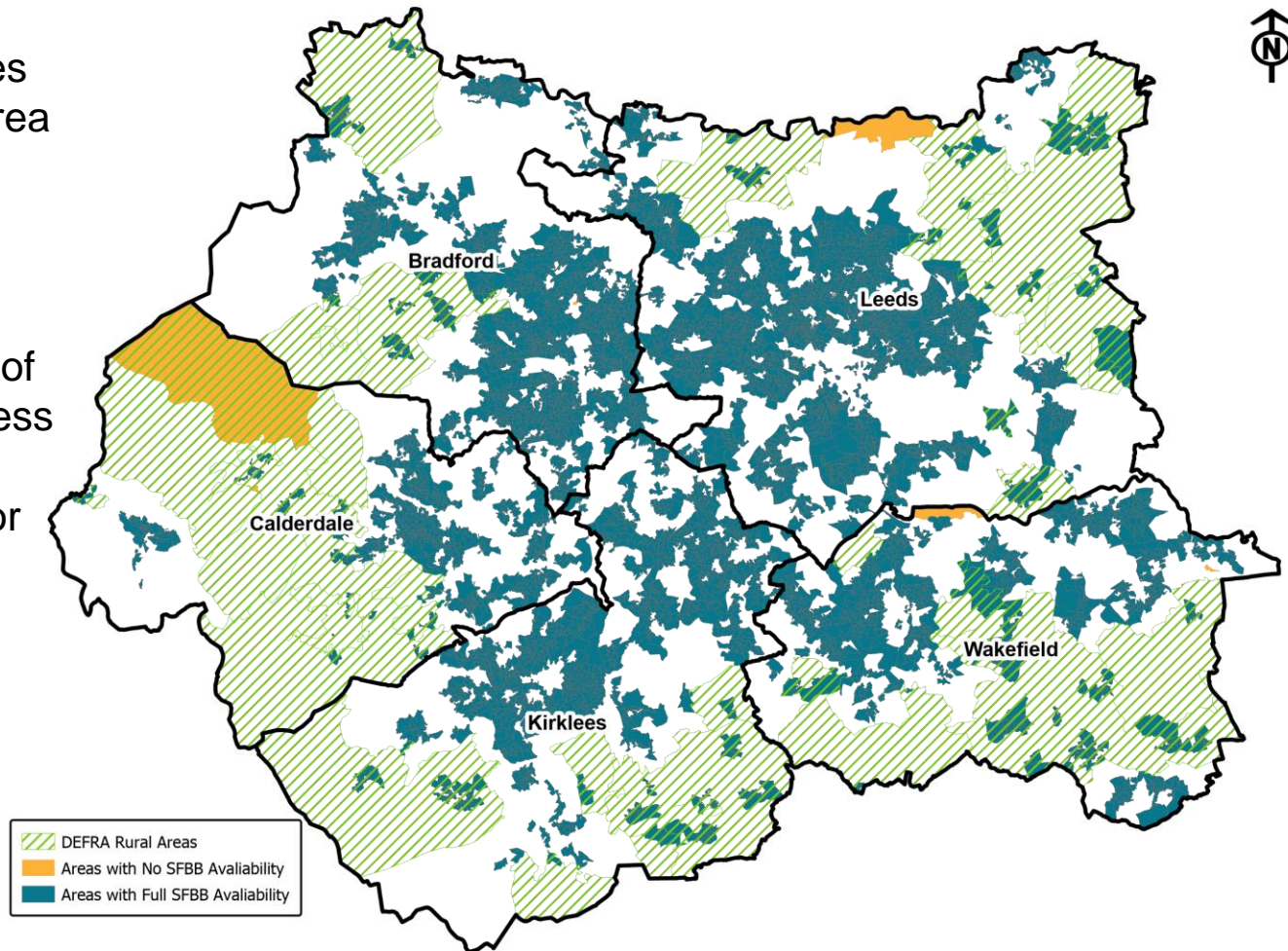
Yorkshire and The Humber is a leader in FFBB availability with 15% of properties connected. In West Yorkshire 8% of properties are connected and Leeds ranks 6th in England for FFBB with 12% of properties connected.



Digital Connectivity in West Yorkshire

96% of West Yorkshires population live in an area with full Super Fast Broadband (SFBB) coverage.

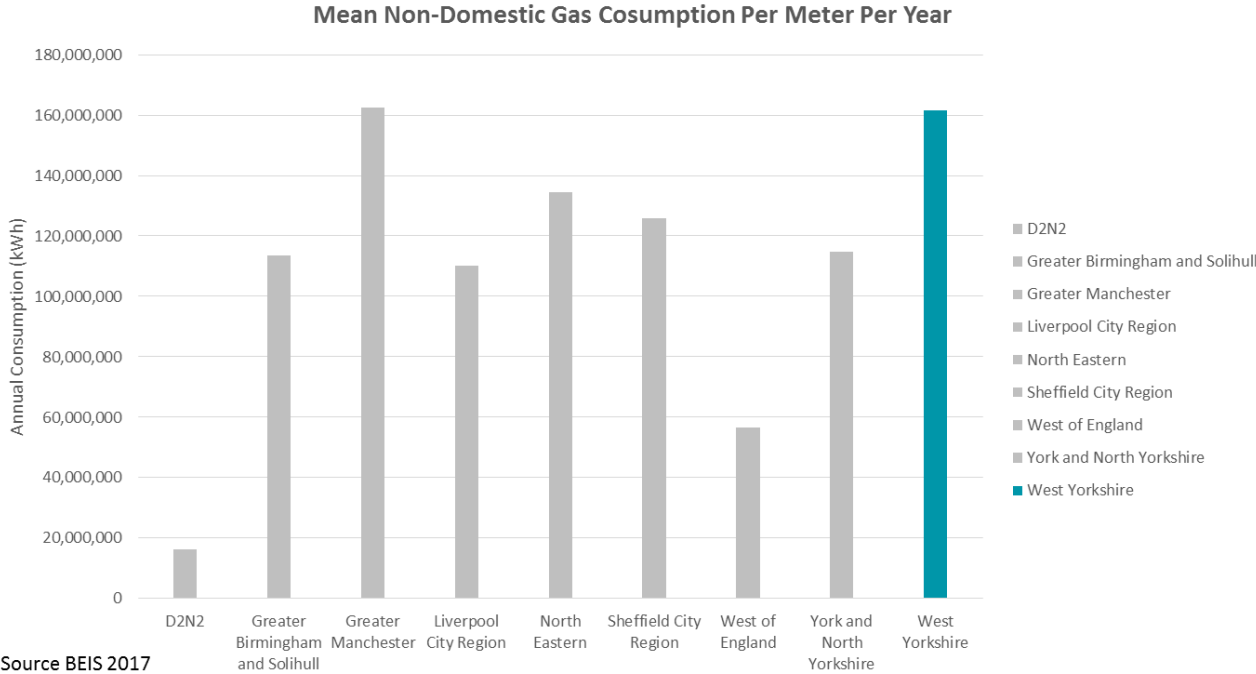
60% of rural and 68% of urban areas have access to SFBB, falling to 3% and 8% respectively for Full Fibre Broadband (FFBB). Rural FFBB access is highest in Kirklees with 8% of properties connected.



Source: ONS Mid Year
Population Estimate 2018,
DEFRA Rural Urban
Classification 2011, Connected
Nations 2019

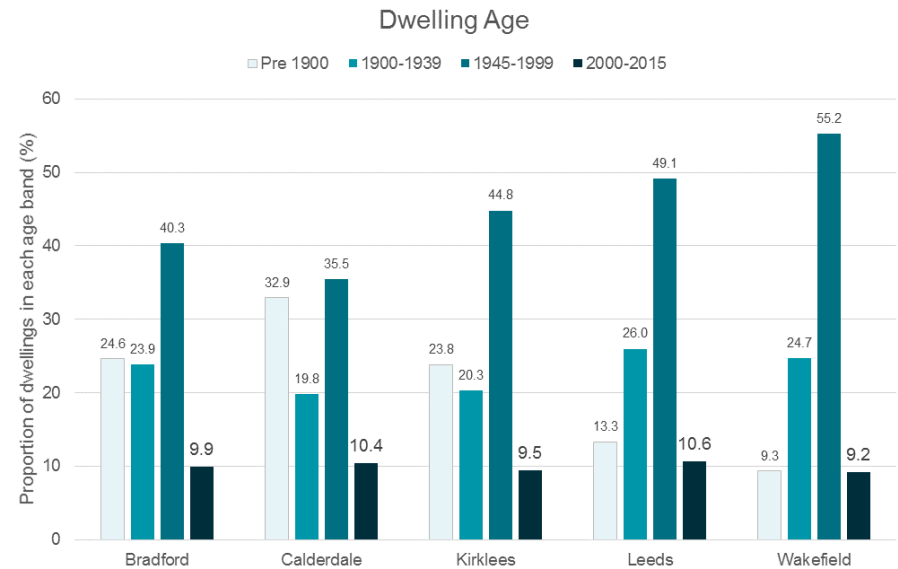
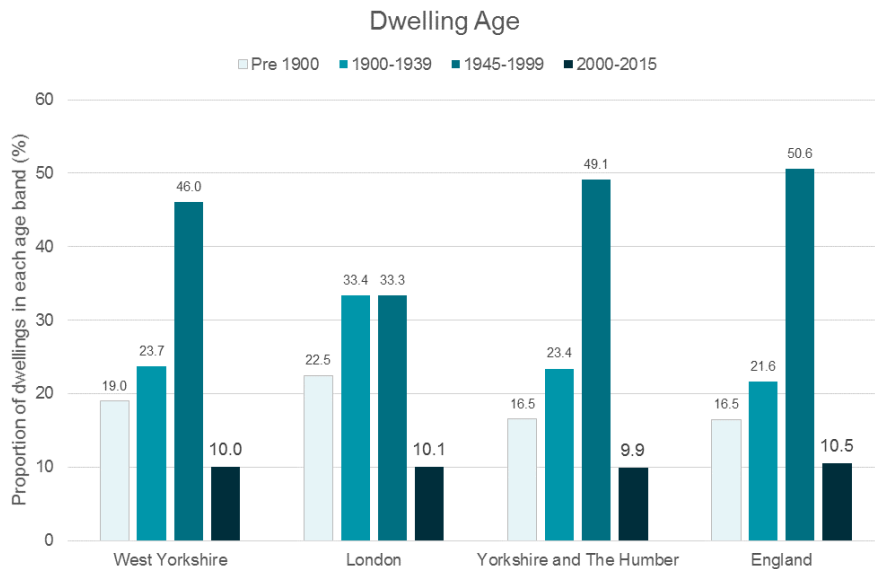
Energy Infrastructure

West Yorkshire is a major consumer of non-domestic gas. Leeds has the second highest annual consumption per meter in England with Bradford, Kirklees and Wakefield all in the top ten. West Yorkshire ranks fourth amongst LEPs for average annual consumption. To a large extent, this reflects the area's industrial structure, with areas with a high count of manufacturing jobs having higher gas consumption.



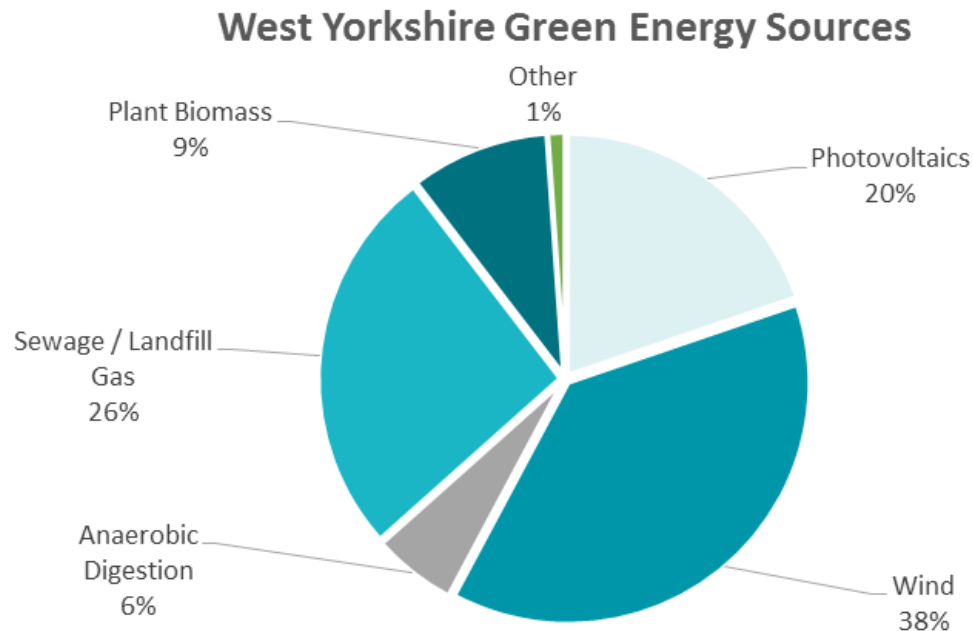
Dwelling Age

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Renewable Energy Generation

More than 53.2 million MWh is produced annually across West Yorkshire with wind power as the single largest contributor. 28% of local green energy production comes from wind sources in Calderdale and the districts ranks 15th nationally for on-shore wind production.



Source: BEIS 2017

Headline SWOT analysis

Strengths

- A polycentric area containing a mix of major cities, towns and rural communities.
- Substantial university strengths, with research strengths in key subjects for Local Industrial Strategies
- Innovation hotspots around the key university centres
- Although gaps to national performance persist, the labour market is strong by historic standards.
- A highly diverse economy that can help to withstand sector-specific shocks and challenges.
- Despite this diversity, some areas of genuine strength and distinction, including the fastest growing digital sector in the country, growth in other professional and technical services and highly specialised manufacturing industries.

Weaknesses

- Productivity is below national levels in all parts of our area, and the gap to national performance is not closing.
- Despite improvements there remains a gap between local and national skill levels, particularly for higher level skills.
- Relatively low levels of business investment in R&D and innovation activity.
- Investment in the transport system has not kept pace with economic and population growth. Congestion and capacity constraints risk hampering future economic growth.
- Some of the highest levels of deprivation in the country, with pockets across the area.
- The lack of an OEM presents challenges around the coherence of supply chains and the productivity benefits such businesses can bring.

Opportunities

- Increasing exposure to key non-EU export markets such as US and China could deliver a productivity dividend.
- Universities provide opportunities to increase business innovation performance through collaboration.
- Manufacturing subsectors offer degrees of employment specialism, though professional services jobs have seen strongest growth.
- A tighter labour market offers potential to upskill existing staff, increase earnings and build a more inclusive economy.
- A unique position in the health system, with strong research capabilities, leading hospitals, national NHS institutions, and a specialised medical manufacturing industry providing an opportunity for a whole system approach to health.

Threats

- Lack of investment, partly due to Brexit uncertainty, risks further weakening of productivity performance.
- Insufficient access to appropriately skilled workers could constrain businesses' ability to grow and this could be compounded by lack of responsiveness in skills system.
- Automation poses a threat to a significant number of jobs in a range of industries, particularly for lower skilled workers.
- The lack of a clear unique sector strength or focal point for economic narrative could reduce the area's distinctiveness.