Cheshire and Warrington Economic Evidence Base

Consolidated pack

September 2022

Metro —— Dynamics

Contents

Introduction

Metro Dynamics has been commissioned by Cheshire and Warrington LEP to update and extend the sub-regional economic evidence base. This pack incorporates updated analysis, new insights – most notably captured in two "deep dives" on economic complexity and the Real Living Wage – and summaries of other evidence on the skills base, based upon work carried out separately by the LEP.

This Report has six sections covering the Cheshire and Warrington economy, four priorities in the Cheshire and Warrington vision: sustainable, inclusive, healthy and growing, and a section on the economy at time of drafting in 2022. There is also an annex which includes further detail on LQ analysis.

Much of the analysis has been developed over February and March 2022 and will therefore reflect the most recent data that was available at time of development. Post Covid-19 data is limited, so this evidence base presents pre-pandemic data to understand the long-term trends in the sub-regional economy, and supplements this with the real-time and more recent data available to understand the impact of the Covid-19 pandemic.

The analysis has considered the whole sub-region, but also variation between the three local authority areas and at the most local level available (i.e. ward, parliamentary constituency, MSOA or LSOA). This involves identifying patterns at the small area level to draw out spatial inequalities and variation, data permitting. We have carried out local level analysis for rural areas and seven towns: Crewe, Chester, Ellesmere Port, Macclesfield, Warrington, Northwich and Winsford.

Comparators have been used to provide context for Cheshire and Warrington's performance, data permitting. This includes the Enterprise M3 LEP area (Hampshire and Surrey), Greater Manchester, the North West as a regional comparator and either the United Kingdom (UK), Great Britain (GB) or England as a national comparator. Where possible, temporal data and change over time has been used to contextualise current performance, show trends, and to highlight what has changed and what hasn't.

Some of the main findings include:

Economy – productivity is below 2008 levels

Cheshire and Warrington continues to be a strong economy, worth £32bn, with high productivity of £36.00 per hour (in 2019, compared to an England average of £35.50) and GVA growth of 9% in the past five years relative to the England average of 6.6%. With 513,000 jobs in the sub-region (2020), there has been higher than average job growth of 3.9% compared to 2.9% nationally (2015-20).

The sectors and strategic opportunities which were the focus of the LIS still appear to be the sub-region's strengths. The analysis confirms that these sectors are still significant in terms of their number of jobs, GVA contribution and specialisms. In total, there are 162,770 jobs in these sectors or almost one third of total jobs, with jobs growth of 2% between 2015 and 2020. Given the relatively high GVA, number of jobs and increasing productivity in the information and communication sector, this could potentially be an emerging opportunity for the sub-region.

However, this output growth has been achieved in the absence of productivity growth. GVA per hour has fluctuated around 2008 levels across the whole period, and in 2019 (the latest year for which we have data) was actually slightly down on 2008 levels. The sector productivity analysis shows the same concern as in the LIS analysis – there is a highly productive manufacturing sector, which is still over twice as productive as the GB average, but most other sectors are underperforming compared to national averages.

Introduction (2)

Sustainable – areas with high industrial energy consumption

Cheshire and Warrington has a high industrial carbon footprint, with CO_2 emission per km^2 of more than double that of the England and North West averages at 1.2kg per kilometre. Emissions have remained constant across Cheshire and Warrington over the past four years.

Often the focus on industrial decarbonisation is focused on Ellesmere Port and rightly so – it is a large industrial cluster with significant opportunities for leading the transition to net zero. But analysis of industrial electricity and gas consumption at the local level shows that there are other areas with high levels of consumption, particularly in Crewe and Warrington.

Inclusive – falling Real Living Wage and getting under the skin of educational attainment gaps

Since 2017, the proportion of jobs earning below the Real Living Wage has fallen in Cheshire and Warrington from being around the UK average to below it, and in the case of Cheshire West and Chester from having lower coverage than average to the highest in the sub-region. However, the Real Living Wage has increased by £1 an hour, so businesses may need extra support to pay these wages.

Analysis of the educational attainment gap at Key Stage 2 between pupils eligible for Free School Meals and their peers at the school level shows that some of the biggest gaps are in more affluent towns in the sub-region, whereas in the more deprived areas, pupils on Free School Meals perform better. However, at KS3 and KS4 this pattern reverses, with a large gap in the performance of FSM pupils in more affluent and less affluent areas. These are larger than national equivalents and remain persistent.

Skills analysis reveals there is a gap in NVQ level 3 skills that is forecast to grow in future as technical skills grow in importance. Providing people with these skills – and responding to clear labour market demand for professions like nurses,

programmers, and accountants – will help to meet the labour force challenge and grow output. Digital skills are ever more in demand – particularly for Microsoft and SQL. On the supply side of the labour market many employees are looking to work part-time, remotely, or hybrid – given very low unemployment, employers are likely to have to respond to these demands.

Healthy – stark health inequalities

Cheshire and Warrington has overall good health outcomes, performing at or above the national average. However at the local level, there are stark inequalities between the 47 neighbourhoods in the most 10% most deprived for health outcomes and the 25 in the 10% least deprived. Healthy life expectancy varies by almost 16 years across the sub-region between the lowest and highest performing places, and some residents live for over 20 years in poor health. Supporting people to age well is important given the challenges around an ageing population and workforce.

Growing – innovation, complexity and exports

Business investment in R&D remains higher than average but has fallen in recent years, alongside a fall in economic complexity. There has been a fall in the trade of goods in recent years and links to global supply chains could create vulnerabilities given continuing supply chain disruption. Whilst the sub-region continues to be one of the country's success stories there are signs that this may not be as resilient as once thought.

While a comprehensive measure of resilience cannot be provided – the causes of economic shocks are often unpredictable, as both of the last two economic shocks have been – the evidence from the previous two economic crises suggests C&W is somewhat more resilient than the UK average. However, an expected recession will hit many businesses and workers hard, and business resilience needs to be assessed now.

Metro —— Dynamics

Process

Evidence review

Review of Cheshire and Warrington's existing evidence, for example (full list contained overleaf):
Socio economic: Building a Better Future Together Recovery Plan, Covid-19 response report.
Sustainable: Energy & Clean Growth Strategy, Natural Capital Audit, Low carbon job/skills report.
Inclusive: Interim Marmot Report, Skills Report, Skills/Education Plan, Sustainable & Inclusive Growth Commission
Healthy: Northern Health Science Alliance Report, Building Back Fairer Cheshire report.
Growing: Strategic Economic Plan, Local Industrial Strategy, Science & Innovation Strategy, Skills report, Quality of Place Strategy, Transport Strategy, Building a Better Future Together Recovery Plan, Destination Management Plan

Quantitative analysis

Updating socio-economic indicators from the Local Industrial Strategy: to benchmark the sub-region against comparator areas and determine what has changed.
Production of a Technical Annex: including data visuals and headline insights of **new analysis** across the four priority areas in the vision including sustainable (e.g. carbon emission/green infrastructure), inclusive (e.g. child poverty and food insecurity), healthy (e.g. healthy life expectancy inequalities/deprivation), and growing (e.g. commercial property use, public transport and innovation).

Deep dives

Deep dives covering:
- Exploration of the changes to economic complexity in Cheshire & Warrington
- Analysis of the change in Real Living Wage coverage in the subregion and consideration as to what may happen once the new rate is announced in September 2022

Final report

- **Production of the full evidence pack**
- Developing an insights pack, drawing together the existing and new analysis into a compelling and visual narrative, with a set of emerging policy implications.

Review of existing evidence

Overarching

- Strategic Economic Plan
- Local Industrial Strategy
- Building a Better Future Together: Cheshire and Warrington.
- Covid-19 Response report – Mickledore
- Town Investment Plans – Crewe and Warrington
- Northern/Powerhouse/NP11/Convention of the North level documents
- Warrington Local Plan
- Cheshire East Local Plan
- Cheshire West and Chester Local Plan

Sustainable

- Sustainable & Inclusive Growth Commission
- Energy & Clean Growth Strategy
- Invest Net Zero Cheshire

- Natural Capital Audit
- A sustainable Cheshire and Warrington paper
- Cheshire West and Chester Climate Emergency Response Plan
- Energy Systems Catapult Report - Whole System Modelling
- Local Energy North West Hub 2040 Scenarios
- NZNW Cluster Plan

Inclusive

- Sustainable & Inclusive Growth Commission
- Skills & Education Plan
- Cheshire and Warrington Skills Report
- Levelling Up - An inclusive Cheshire and Warrington paper

Healthy

- Sustainable & Inclusive Growth Commission
- Building Back Fairer in Cheshire and Merseyside

- Northern Health Science Alliance Report.
- A healthy Cheshire and Warrington paper

Growing

- Science & Innovation Strategy
- Destination Management Plan
- Transport Strategy
- HS2 Plans
- Housing Strategy & Delivery Plan
- Quality of Place Strategy
- Mersey Dee Alliance
- A growing Cheshire and Warrington paper
- Life Sciences Mapping & Gapping
- Cheshire East – National Bus Strategy / Local authority Bus Service Improvement Plans

1. The Cheshire & Warrington economy
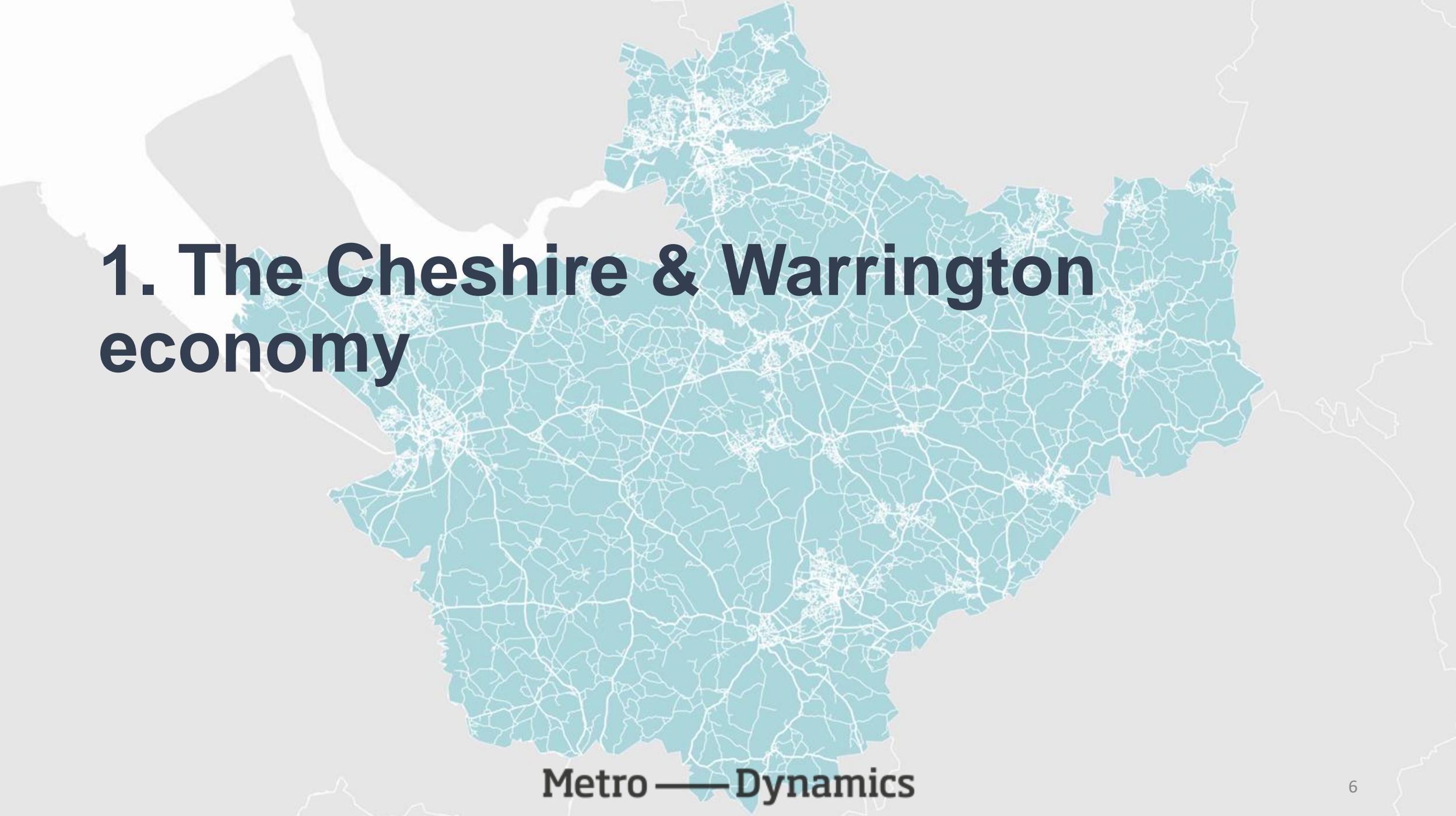
Metro —— Dynamics

The Cheshire & Warrington economy

This section provides an overview of the sub-regional economy and draws on the update of the analysis carried out as part of the Local Industrial Strategy (LIS) evidence base. It includes:

- A profile of the sub-region, drawing on economic, productivity, business and people indicators, benchmarking the sub-region against comparators, looking at variation between the local authority areas, and change over time.

- Analysis of recovery since the 2008 recession.

- An assessment of sector specialisms compared to the analysis from the LIS evidence base to understand whether sectoral strengths have changed.

- Analysis of sectoral productivity, as a major finding of the LIS was that Cheshire and Warrington underperformed comparative to the national average for many of its sectors.

- An overview of jobs, GVA contribution and specialism for the three strategic opportunities identified in the LIS: Energy, Life Sciences and Manufacturing, and two further sectors, Logistics and Distribution and Finance and Business Services.

- A summary of jobs and employment change in the foundational economy, including retail and hospitality, and health and social care.

- Analysis of how Cheshire and Warrington and its local authorities perform against the Levelling Up Metrics, including local level analysis where possible.

- A summary of levelling up challenges and performance across the four priority areas at the local level for six towns and rural areas.

Cheshire & Warrington profile

The tables on slides 9 and 10 show a set of socio-economic indicators for Cheshire and Warrington, its local authorities and wider national/regional comparators. Each indicator includes the most recently available data and change over time.

Cheshire and Warrington is a growing £32.4bn economy with a 9% increase in Gross Value Added (GVA) since 2015, relative to the England average of 6.6%. With 513,000 jobs in the sub-region, there has been higher than average job growth of 3.9% compared to 2.9% nationally.

On first glance GVA per hour growth looks good: it has grown by 4.0%, compared to the England average of 0.6% in the past five years. However this is in part recovering from a dip in 2014/15 and in 2019 was slightly down on 2008 levels. England and Cheshire and Warrington figures are not dissimilar at £35.50 and £36.00, respectfully. This outperforms the North West (£31.20) and Greater Manchester (£31.10) averages.

There are 42,655 businesses in Cheshire and Warrington. There has been lower business growth of 5.9% compared to the England average of 8.9% and a lower business birth rate of 10.7% compared to 12.1%. Business dynamism across the sub-region has varied, with Warrington experiencing considerable business growth in the past five years of 17.7%; though as covered in the Warrington industrial strategy, this is likely to be an anomaly resulting from companies working with two large outsourcing businesses based in Warrington, who list their address as the same, despite being based elsewhere.

The sub-region has a population of 939,900 with 2.4% growth rate over the past five years, which is slightly lower than the national average. There is an older population with 21.7% aged over 65 compared to the regional (18.8%) and national averages (18.5%). This age group has grown by 5.9% in the past five years relative to the England average of 4.5%.

The proportion of the population with no or low skills attainment is declining in line with national trends, however Warrington appears to have observed a slight increase in those with no qualifications. The proportion with NVQ+4 is comparable to the England average at 42.9% of the working age population, however the rate of growth over the past five years has been less than half that of the England average. Slower growth in skills attainment may present constraints to employers in accessing relevant skills and talent, a challenge already highlighted in the wider skills evidence.

Cheshire and Warrington has a strong labour market, with a high proportion of the working age population that are economically active (79.9%) and this rate has grown faster than both regional and national comparators in the past five years. In Cheshire East, economic participation of the working age population has fallen, potentially as a result of its older population and a greater number of its residents leaving the labour market for early retirement.

The unemployment rate is 3.5% of the working age population which has stayed at a similar level to 2016 (3.6%). This is opposite to the national trend where unemployment has risen from 4.6% to 5%. In tandem with this fall, the proportion of jobs earning below the Real Living Wage has fallen by 15.6% (15,000 jobs) between 2017 and 2020; 18.6% of jobs earn below this threshold in the sub-region, compared to 20.4% nationally. Gross Domestic Household Income of £23,303 is above the regional (£18,601) and national averages (£21,978).

Across the sub-region, 11.5% of households are fuel poor, which is below the national average of 13.4%. This has increased by 15% in the past five years compared to the national decline of 20%. The rise in the cost of living will likely increase the number of households in fuel poverty.

Metro ——— Dynamics

Economic, productivity and business indicators

Indicator	Cheshire East	Cheshire West and Chester	Warrington	Cheshire and Warrington	GM	EM3	North West	England
GVA (£m) (2019)	14,496	10,338	7,602	32,436	68,268	57,131	184,315	1,666,194
Growth rate (2015-19), %	*10.4*	*8.9*	*6.5*	*9.0*	*10.7*	*5.0*	*5.9*	*6.6*
GVA per head (£) (2019)	37,735.1	30,133.7	36,197.6	34,608	24,074.6	37,265.8	25,106.9	29,601.8
Growth rate (2015-19), %	*8.0*	*6.0*	*5.3*	*6.7*	*7.5*	*2.9*	*3.5*	*3.8*
GVA per hour (£) (2019)				36.0	31.1	43.1	31.2	35.5
Growth rate (2015-19) , %				*4.0*	*-2.2*	*4.2*	*-2.0*	*0.6*
Gross Domestic Household Income (£) (2019)	25,486	22,301	20,946	23,303	17,767	28,891	18,601	21,978
Growth rate (2015-19) , %	*12.2*	*10.8*	*8.3*	*10.9*	*9.6*	*9.4*	*9.1*	*10.0*
Jobs (2020)	200,000	170,000	143,000	513,000	1,245,000	752,000	3,411,000	26,671,000
Growth rate (2015-20), %	*2.6*	*-2.3*	*14.4*	*3.9*	*7.6*	*-1.4*	*4.5*	*2.9*
Businesses (2021)	19,510	14,010	9,135	42,655	106,695	80,815	270,945	2,405,965
Growth rate (2016-21), %	*3.1*	*2.9*	*17.7*	*5.9*	*16.5*	*4.0*	*10.5*	*8.7*
Business birth rate (2020)	10.8	11.0	10.0	10.7	14.1	9.8	12.9	12.1
Business death rate (2020)	10.0	10.6	11.3	10.5	11.0	10.1	10.6	10.7
Micro businesses (%) (2021)	89.9	89.3	90.0	89.7	88.9	90.2	88.8	89.7
Business R&D per job (£) (2018)				1,772.3	321.3		669.2	970.1
Growth rate (2014-18), %				*-31.4*	*26.4*		*-4.5*	*5.9*
Goods exports (£m) (2020)	3,732	2,076	858	6,666	6,200		24,297	212,441
Growth rate (2016-20), %	*-17.0*	*-13.8*	*7.4*	*-13.5*	*-2.7*		*-12.6*	*-3.2*

Growth rates refer to the % change between two percentage rates.

Source: ONS Regional GVA/GDHI, ONS BRES, ONS Business demography, ONS IDBR Business counts and ONS/HMRC Regional trade in goods. Grey indicates data not available.

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Metro——Dynamics

People indicators

Indicator	Cheshire East	Cheshire West and Chester	Warrington	Cheshire and Warrington	GM	EM3	North West	England
Population (2020)	386,667	343,823	209,397	939,900	2,848,300	1,540,200	7,367,456	56,550,138
Growth rate (2015-20), %	*2.9*	*3.0*	*0.8*	*2.4*	*3.4*	*2.2*	*2.7*	*3.2*
16-34 population (%) (2020)	18.5	20.9	21.4	20.0	26.4	20.6	24.1	23.9
Growth rate (2015-20), %	*-5.7*	*-4.9*	*-6.3*	*-5.7*	*-1.9*	*-3.7*	*-2.8*	*-4.4*
65+ population (%) (2020)	23.1	21.8	19.1	21.7	15.9	20.4	18.8	18.5
Growth rate (2015-20), %	*5.3*	*5.6*	*7.8*	*5.9*	*1.3*	*5.7*	*3.9*	*4.5*
No qualifications or NVQ1 (%) (2020)	13.4	16.5	15.2	14.4	18.9		18.3	16.1
Growth rate (2015-20), %	*-32.6*	*-10.5*	*0.5*	*-18.6*	*-11.3*		*-14.5*	*-19.5*
NVQ4+ (%) (2020)	42.2	48.2	43.1	42.9	39.2		38.6	42.8
Growth rate (2015-20), %	*6.3*	*18.1*	*-1.0*	*8.1*	*16.3*		*18.4*	*16.6*
Top managers & professionals (%) (2020)	37.9	36.6	32.1	36.7	32.7		32.1	34.3
Growth rate (2015-20), %	*6.5*	*15.8*	*-2.7*	*7.6*	*15.1*		*10.7*	*10.3*
Elementary workers (%) (2020)	8.9	7.4	11	8.7	9.9		10.3	9.3
Growth rate (2015-20), %	*7.2*	*-42.2*	*-3.5*	*-17.9*	*-7.5*		*-6.4*	*-13.1*
Economic activity rate (%) (2021)	76.0	81.9	81.9	79.5	76.1	83.3	76.9	78.8
Growth rate (2016-21) , %	*-1.7*	*5.1*	*2.25*	*1.8*	*0.5*	*0.8*	*0.9*	*0.6*
Unemployment rate (%) (2021)	4.9	2.5	3.2	3.5	5.2	3.2	4.8	5.0
Growth rate (2016-21) , %	*96.0*	*-53.7*	*6.7*	*-2.8*	*-6.6*	*18.5*	*0.0*	*8.7*
Jobs below Real Living Wage (%) (2020)	21.9	14.6	18.8	18.6	22.3	15.5	21.4	20.4
Growth rate (2017-20) , %	*-4.4*	*-37.9*	*-8.7*	*-15.6*	*1.6*	*1.6*	*-10.5*	*-8.1*
Fuel poor households (%) (2019)	10.9	12.0	11.6	11.5	14.9	6.1	14.5	13.4
Growth rate (2015-19), %	*8.8*	*18.0*	*17.7*	*14.8*	*25.6*	*-22.8*	*-11.9*	*-19.5*

Source: ONS Population Estimates, Annual Population Survey, Annual Survey of Hours and Earnings, BEIS sub-regional fuel poverty. Grey indicates data not available.

Metro——Dynamics

Productivity has remained fairly static, with big differences within the area

GVA per hour worked (in 2019 money value)

Cheshire East — Cheshire West and Chester — Warrington — Cheshire and Warrington — UK
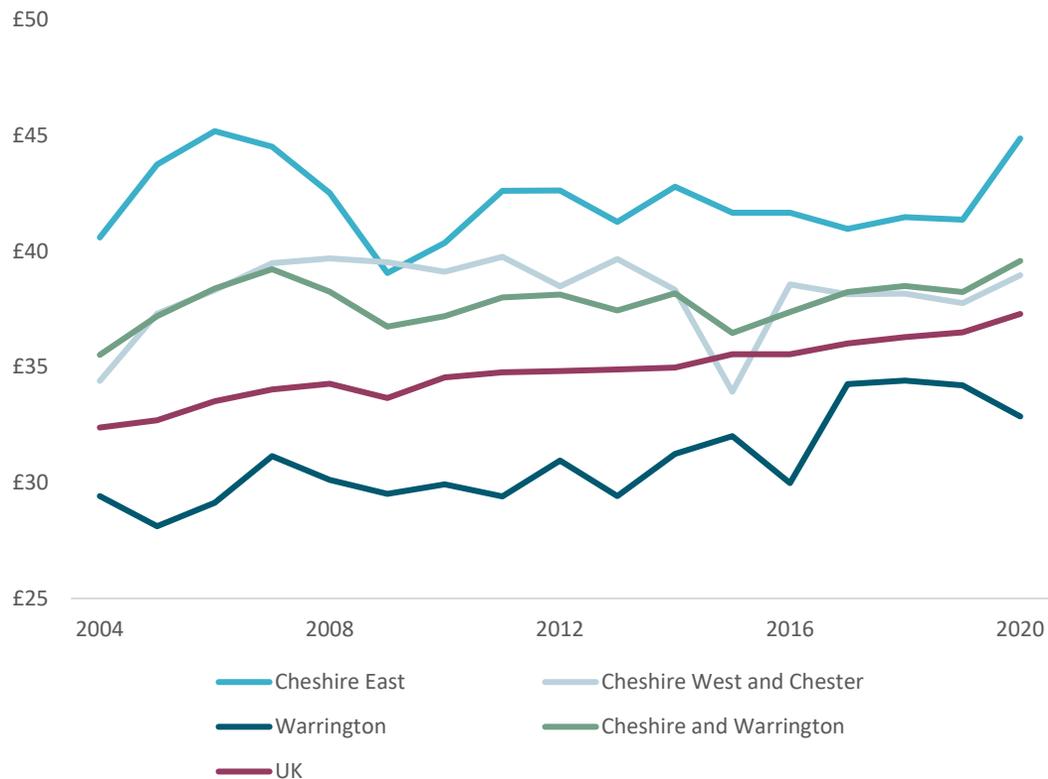
Since the financial crisis, productivity in Cheshire and Warrington (as measured by the purest approach, GVA per hour worked) has remained above the national average, but with a generally narrowing gap. In real-terms, productivity remained below 2007 levels, until in 2020 when it improved – although this data point needs to be treated with some caution due to the unusual nature of the labour market during 2020.

There remain considerable differences in productivity across the area, where GVA per hour worked is £12 higher in Cheshire East than in Warrington. The area as a whole has broadly followed the national trend, with the exception of a dip in 2015, but the three local authority areas have followed different trends.

Source: ONS Regional Accounts

Recovery since 2008 recession

We want to understand more about the resilience of the sub-regional economy. Resilience, while a familiar word, can cover a broad range of outcomes. It can mean the extent of the negative impact of a shock – with a place that feels little effect in the first place being resilient (robustness). Or it can mean the speed at which a place recovers from the impact of the shock (responsiveness). Finally, it might denote a place that changes appropriately in response to a shock, for instance by learning new approaches to overcome obstacles (adaptability).

To understand the shape that Cheshire and Warrington's recovery from the Covid pandemic is likely to take, it is informative to review the area's recovery from the financial crisis. The charts on the next page show, for every year from 2009 to 2019, how output (as measured by GVA) and hours worked (the purest measure of employment, which is best for understanding productivity) compare to 2008 (where each series starts at 0,0). This data has then been presented against the UK as a whole. The dashed line on the chart shows the points where output and hours have grown by the same amount – and therefore productivity has remained the same as 2008.

Cheshire and Warrington recovered strongly from the financial crisis. In 2009 output fell by 2%, which compared to 4% nationwide, and the number of hours saw a very small level of growth. In 2010 output levels were already above 2008 levels, a year ahead of the UK economy. Since then, total output

has grown by 21.7%, significantly more than the UK (15.6%) or the closest local comparator – Greater Manchester (19.1%)

However, this output growth has been achieved in the absence of productivity growth. GVA per hour has fluctuated around 2008 levels across the whole period, and in 2019 was actually slightly down on 2008 levels.

This is not a sustainable growth model – as the number of hours worked in the economy cannot grow indefinitely without continued growth of the working age population, through demographic trends or migration. However, migration has generally fallen following the Brexit vote, and the population of the UK is ageing as a whole. Cheshire and Warrington is already predicting a lack of replacement demand and is seeing high levels of vacancies. Without improving productivity, output will not be able to grow into the longer term.

Nonetheless, overall productivity in 2019 was still higher than other comparators – though the gap with some places has lessened over the period.

Metro —— Dynamics

Comparing recovery since 2008 recession

Source: ONS Regional Accounts

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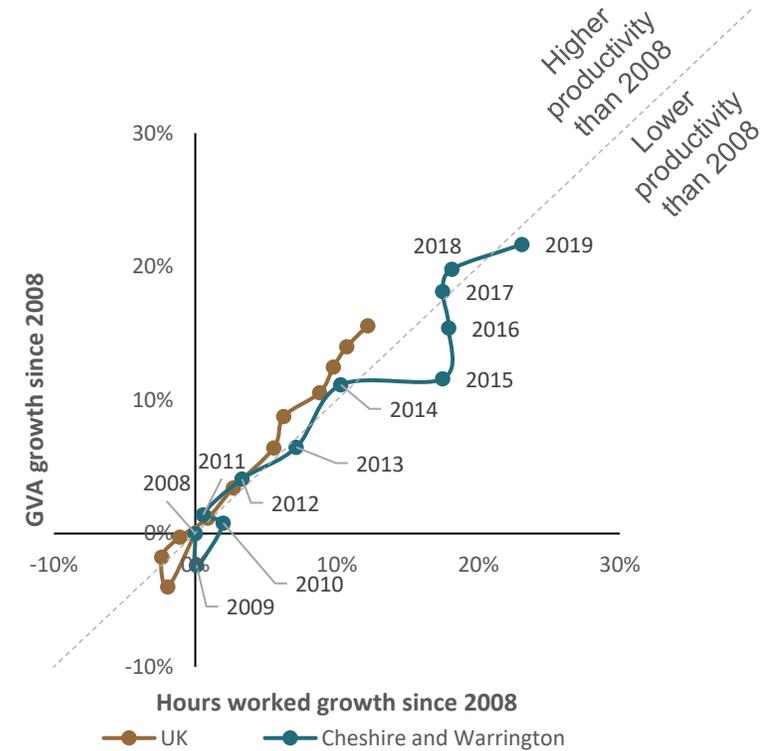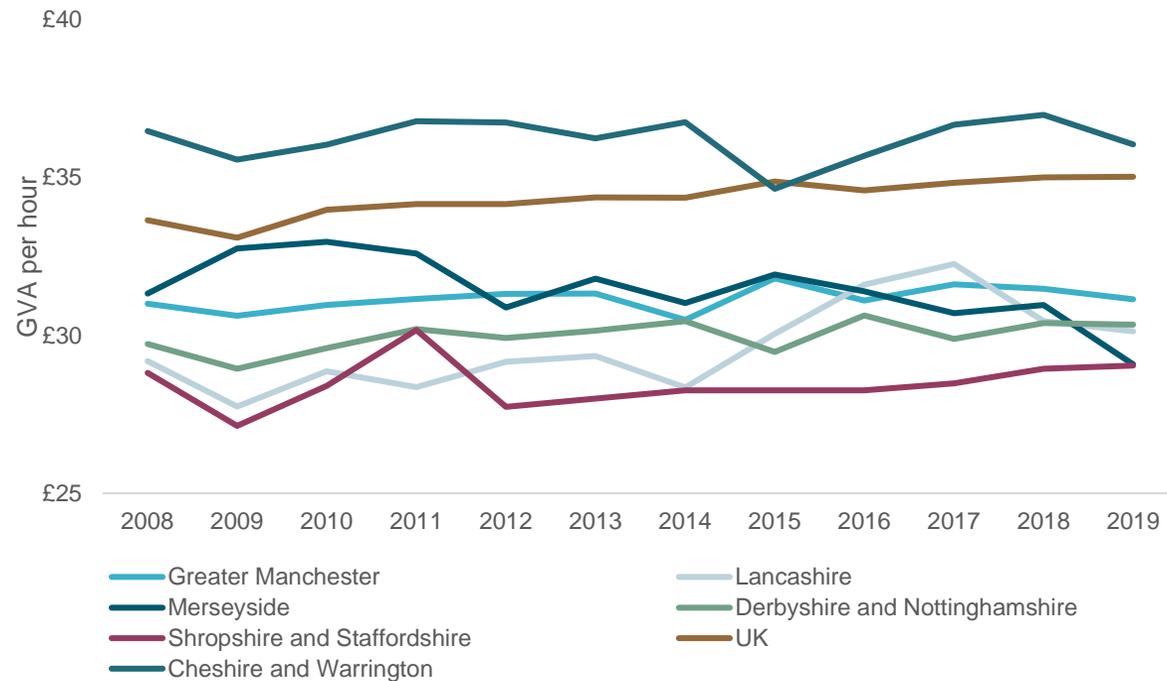
Estimating where the CWLEP economy is now using sector shares

% of total GVA
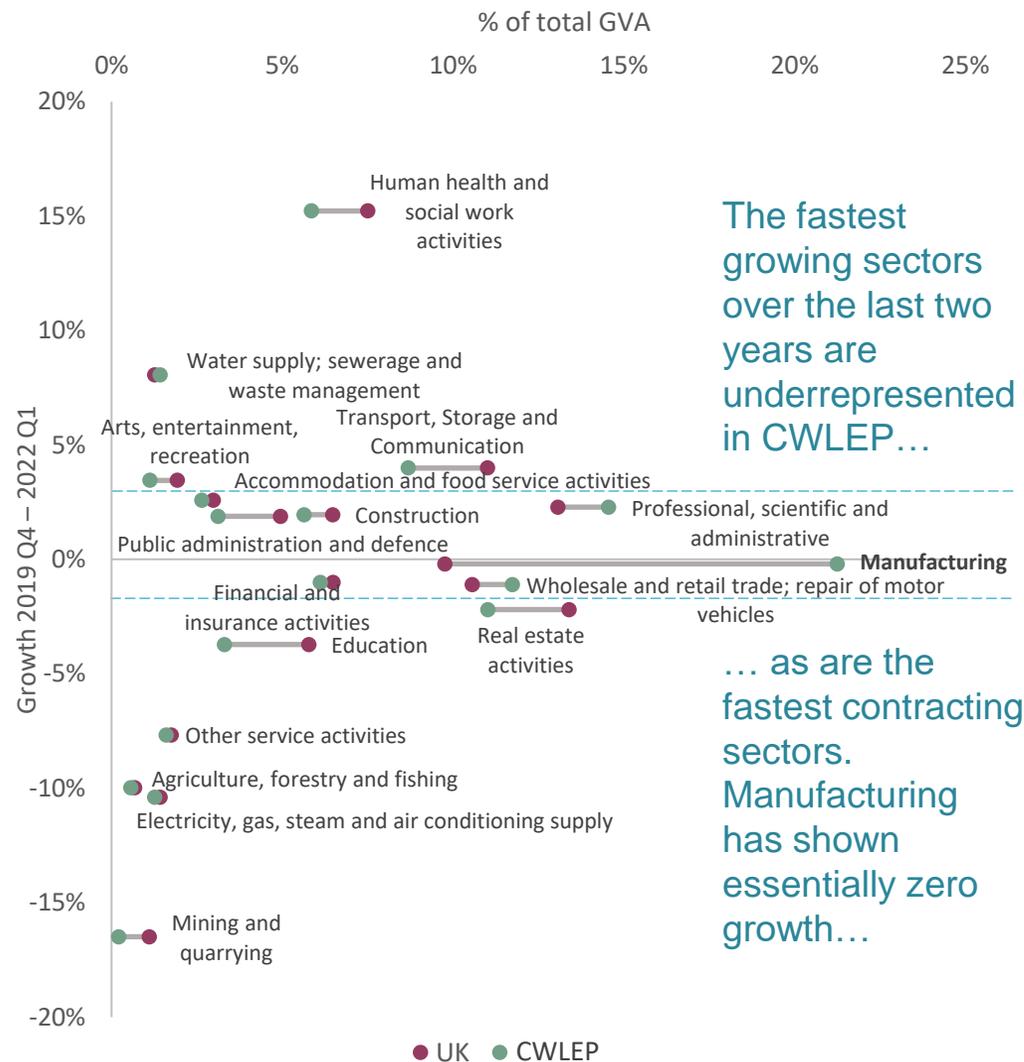
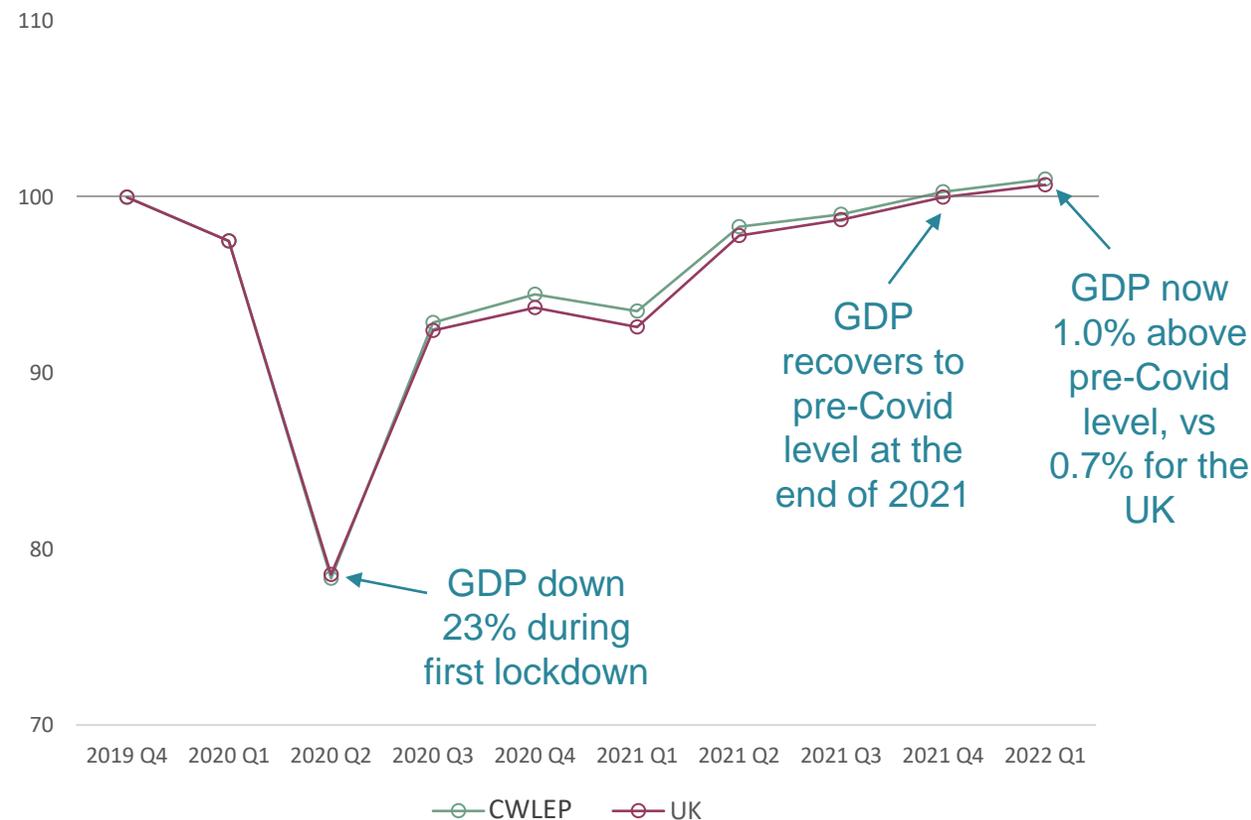The fastest growing sectors over the last two years are underrepresented in CWLEP…

… as are the fastest contracting sectors. Manufacturing has shown essentially zero growth…

… meaning overall growth is very close, and ever so slightly ahead, of the UK level

GDP estimate – 2019 Q4 = 100

GDP down 23% during first lockdown

GDP recovers to pre-Covid level at the end of 2021

GDP now 1.0% above pre-Covid level, vs 0.7% for the UK

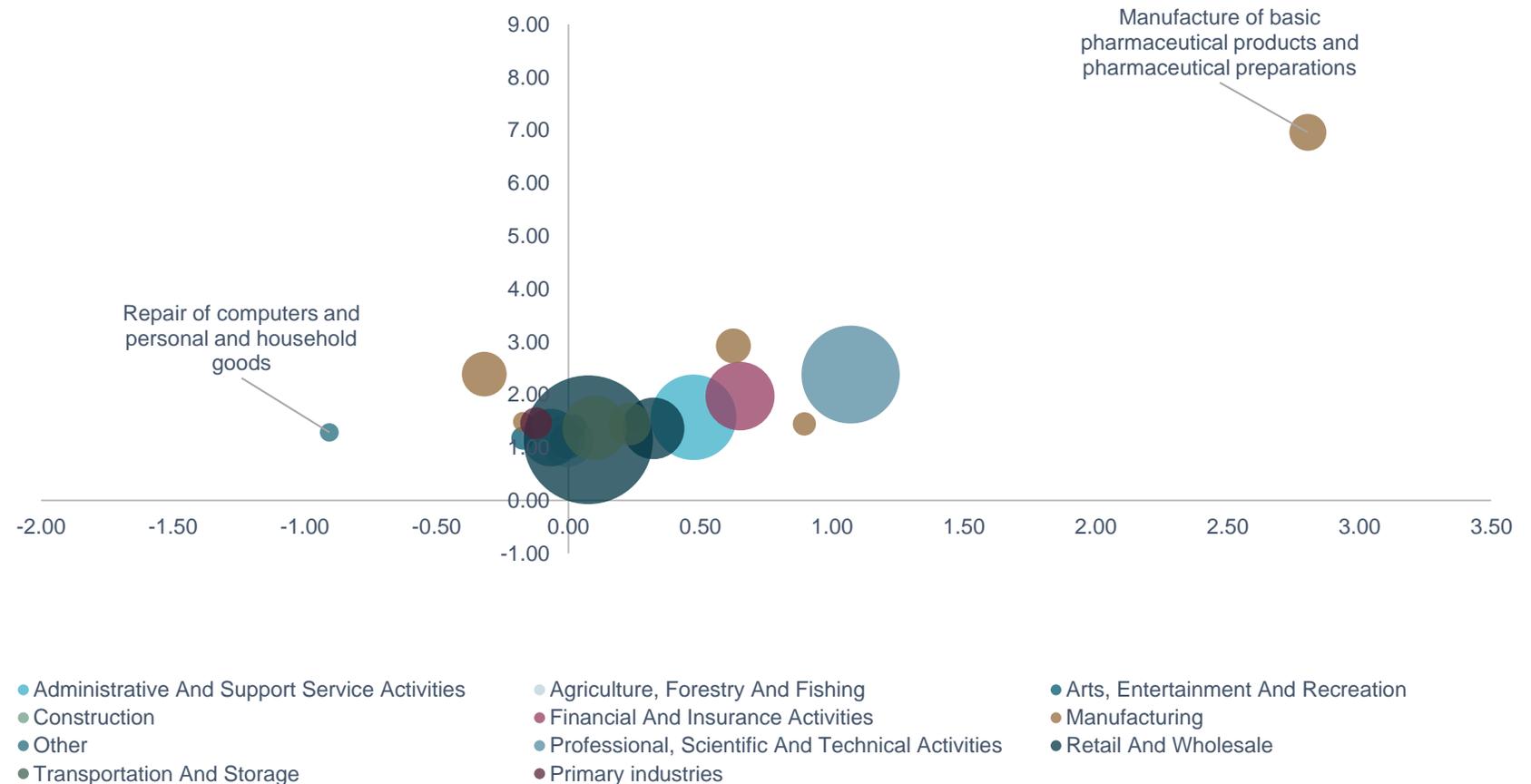*Source: ONS regional accounts, Metro Dynamics modelling*

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Specialisation analysis

To understand specialisation patterns in terms of concentration and de-concentration for the different activities taking place in Cheshire and Warrington, we carried out a Location Quotients (LQ) analysis.
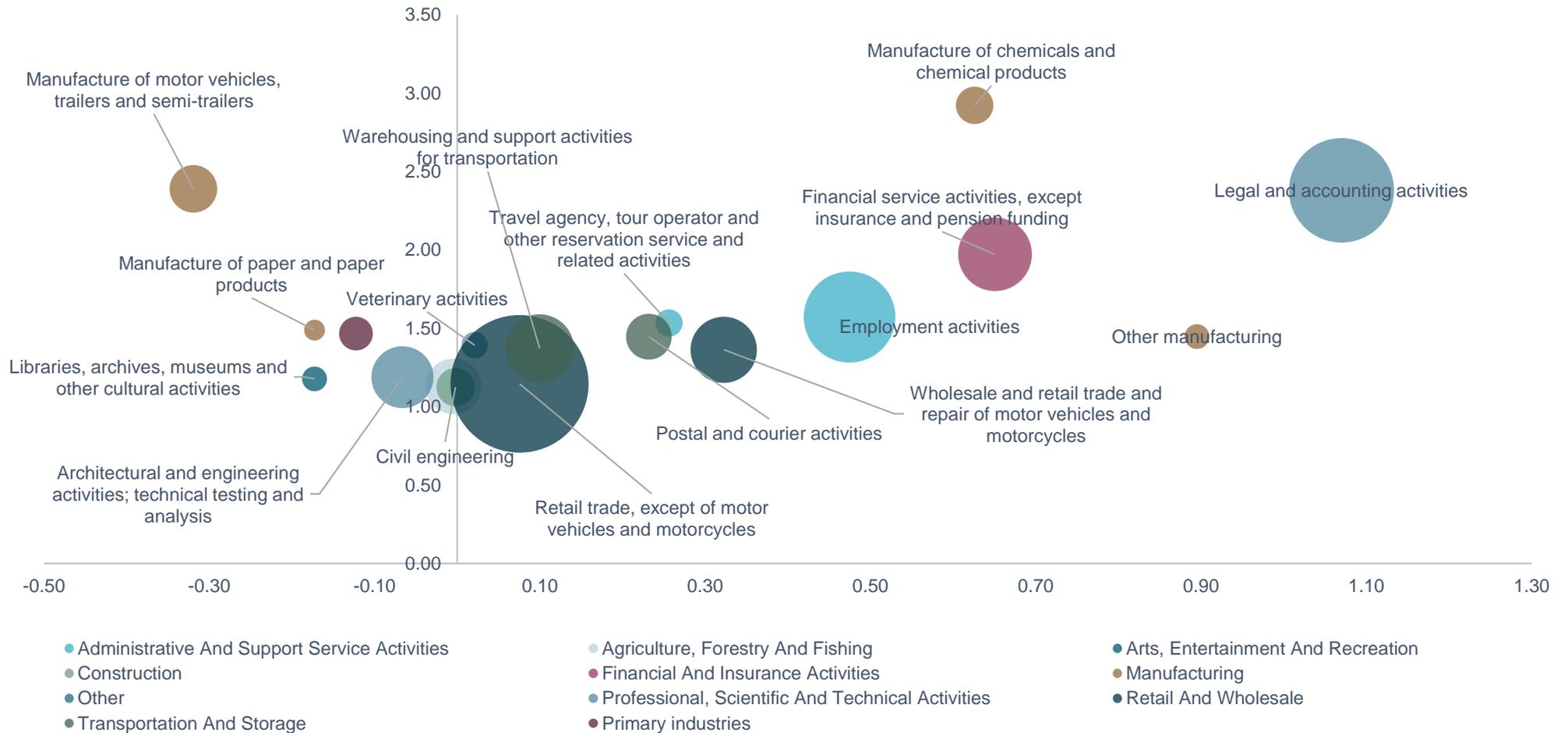
LQs are ratios for each sector between the local share of employment and share of employment in GB. Higher LQs correspond to higher levels of specialisation, with an LQ above 1 indicating that the area is more specialised in that sector than GB as a whole. This is a key piece of analysis since building on existing sectoral strengths is likely to increase the chances of economic success.

The bubble charts on the following pages illustrate results of the LQ analysis for SIC 2 and SIC 5 sub-sectors. On the y-axis are the LQs for 2020 with a higher value indicting a higher degree of specialisation. The right quadrant denotes gains in concentration and the left quadrant represents de-concentration, relative to the average for GB over the period 2015-2020. The size of the bubbles indicates total employment in the industrial subgroup. Zoom ins are provided for both SIC2 and SIC 5.

- Administrative And Support Service Activities
- Agriculture, Forestry And Fishing
- Arts, Entertainment And Recreation
- Construction
- Financial And Insurance Activities
- Manufacturing
- Other
- Professional, Scientific And Technical Activities
- Retail And Wholesale
- Transportation And Storage
- Primary industries

Metro ——— Dynamics

SIC 2 – LQ analysis zoom

The chart shows the Top 20 LQs in SIC 2 sub sectors in Cheshire and Warrington zoomed in.

Legend:
- Administrative And Support Service Activities
- Agriculture, Forestry And Fishing
- Arts, Entertainment And Recreation
- Construction
- Financial And Insurance Activities
- Manufacturing
- Other
- Professional, Scientific And Technical Activities
- Retail And Wholesale
- Transportation And Storage
- Primary industries

Source: ONS BRES (2020)

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Sector strengths and specialisms

In the LIS, one of the key pieces of analysis used to identify sector strengths was by understanding specialisation patterns. We have here repeated the Location Quotient (LQ) analysis at the sub-sectoral level using the latest available data (2020) and have compared this to the analysis carried out for the LIS. The table on the left-hand side shows the Top 20 most specialised (LQ over 1) SIC 2 sub-sectors, with high employment (over 1,000 jobs) in Cheshire and Warrington. The table on the right hand side shows SIC2 sub sectors that have fallen out of the top 20 since the LIS.

Overall 16 out of the top 20 SIC 2 sub-sectors by specialisation in the LIS have remained in the highest ranking. The manufacture of pharmaceutical products has become the most specialised sub-sector, and is 7 times more concentrated than GB with jobs growth of 89.5% between 2015 and 2020. Previously Manufacture of coke & refined petroleum products was ranked 1st. Legal and accounting, and financial services, have experienced some of the highest jobs growth in the past five years and have increased in specialism (over 2 times as specialised relative to GB).

There are a few sub-sectors that have significantly advanced up the rankings. Retail has become more concentrated, with wholesale moving up 30 places and experiencing an increase of almost a third in jobs. Retail trade has also moved into the top 20 ranking. It should be recognised that this data is for 2020 and may not reflect recent Covid-19 related

trends in the sector.

Other manufacturing, which includes jewellery, musical instruments, sports equipment, medical and dental instruments, is another sub-sector that has advanced into the Top 20 (10th), after a doubling of the workforce in the past five years.

Some sectors have declined in specialism since 2015. Manufacture of motor vehicles maintains its rank as the third highest specialised sector; it is 2.4 times more specialised than GB, but has had a fall in LQ. The repair of computers and personal households has seen the LQ fall by 0.9, as well as a 44% fall in the workforce. Accommodation has fallen out of the top 20. This data is from 2020, therefore this figure may see further change due to the impact of Covid-19 restrictions.

The manufacture of coke and refined petroleum products has fallen to the second most specialised sector, and has had a 10% decrease in employment. It is also important to note that this sub-sector is less likely to be a growth sector in the future as we continue to transition to net zero and pivot to alternative energy sources.

Metro ——— Dynamics

Top 20 most specialised SIC 2 sub-sectors in 2020

| SIC 2 name	Change from LIS	LQ change (2015-20)	LQ (2020)	Jobs (2020)	Jobs growth (2015-20)
Manufacture of basic pharmaceutical products & pharmaceutical preparations	↑ by 1 place	2.8	7.0	4,500	89.5%
Manufacture of chemicals & chemical products	↑ by 2 place	0.6	2.9	4,000	14.3%
Manufacture of motor vehicles, trailers & semi-trailers	Same ranking	-0.3	2.4	6,500	-7.1%
Legal and accounting activities	↑ by 1 place	1.1	2.4	31,500	110.0%
Financial service activities, except insurance & pension funding	↑ by 1 place	0.7	2.0	15,500	40.9%
Employment activities	↑ by 8 places	0.5	1.6	24,000	41.2%
Travel agency, tour operator & other reservation service & related activities	↑ by 5 places	0.3	1.5	2,125	6.3%
Manufacture of paper & paper products	↑ by 2 place	-0.2	1.5	1,250	-16.7%
Waste collection, treatment & disposal activities; materials recovery	↓ by 2 places	-0.1	1.5	3,250	0.0%
Other manufacturing	New entrant	0.9	1.5	1,750	133.3%
Postal & courier activities	↑ by 2 places	0.2	1.5	6,000	20.0%
Veterinary activities	↓ by 4 places	0.02	1.4	2,000	45.5%
Warehousing & support activities for transportation	↓ by 4 places	0.1	1.4	13,500	35.0%
Wholesale & retail trade & repair of motor vehicles & motorcycles	↑ by 30 places	0.3	1.4	12,500	31.6%
Repair of computers & personal & household goods	↑ by 2 places	-0.9	1.3	1,125	-43.8%
Architectural & engineering activities; technical testing & analysis	↓ by 5 places	-0.1	1.2	11,000	0.0%
Libraries, archives, museums & other cultural activities	↓ by 2 places	-0.2	1.2	1,750	-17.6%
Retail trade, except of motor vehicles & motorcycles	↑ by 4 places	0.1	1.1	54,500	4.8%
Crop & animal production, hunting & related service activities	↑ by 42 places	0	1.1	9,000	5.9%
Civil engineering	↓ by 2 places	0	1.1	4,250	21.4%

SIC 2 sub-sector specialisms that have fallen out of the top 20

SIC 2 name	Previous rank	LQ change (2015 – 20)	LQ (2020)	Jobs	Job change
Manufacture of coke & refined petroleum products	1	-1.2	6.0	900	-10%
Activities of head offices; management consultancy activities	18	0.1	1.0	13,000	18%
Accommodation	19	-0.1	1.0	7,000	-13%
Manufacture of food products	20	-0.2	0.8	4,750	-14%

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Source: ONS Business Register and Employment Survey (BRES) (2020)

Metro —— Dynamics

Sub-sectors with highest LQ

The chart shows the change in LQ between 2015-20 on the x-axis and the LQ in 2020. The chart includes the sub-sectors with the highest LQ scores in 2020, with labels for the sub-sectors with the top 10 LQ scores. The sub-sector which has had the greatest change in LQ score is manufacture of basic pharmaceutical products and pharmaceutical preparations, which is also the sub-sector with the highest LQ score in Cheshire and Warrington.

Source: ONS BRES (2020)

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Metro —— Dynamics
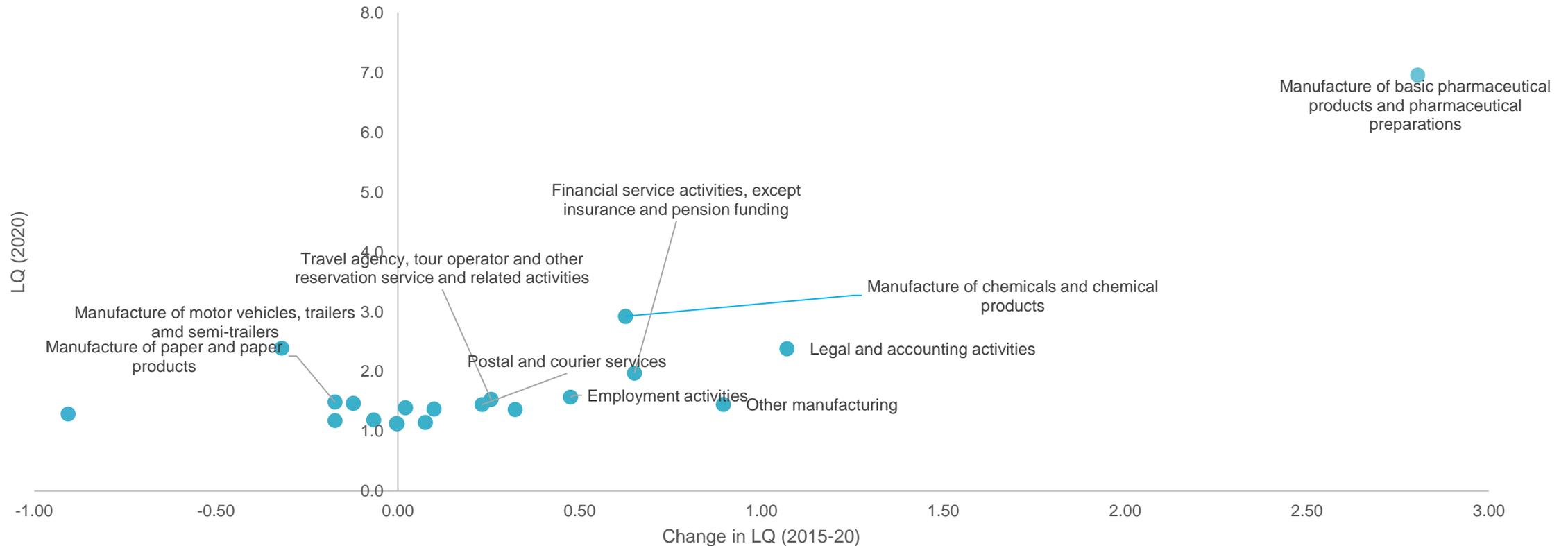
Sectoral productivity

Sectoral productivity, identified as a barrier to continued prosperity and growth in the Local Industrial Strategy, continues to be a challenge for the Cheshire and Warrington economy. As flagged on slide 11, productivity has fluctuated around the 2008 level since the financial crisis and in 2019 was slightly below 2008 levels.

The table shows GVA per job for broad sector groups in Cheshire and Warrington and GB. Colour coding indicates whether the sector in the sub-region is more (green), similar to (yellow) or less (red) productive than GB.

Manufacturing is one of three sectors in the sub-region more productive than GB. It is remains over twice as productive with GVA per job of £156,736 and has the largest GVA of £6.8bn. However, productivity has fallen by 6% over the last five years.

Information and communication, and retail and hospitality, which have similar levels of productivity to the national average, have become more productive over time. Both sectors support high numbers of jobs – 9.2% of the total job numbers overall. This rise in productivity in this large amount of the workforce may offset the decline in manufacturing productivity.

Real estate, the highest productivity sector, has a GVA per job of £443,625, due to its relatively high economic output (£3.6bn) and low number of jobs (542,500)

Finance and insurance, construction, agriculture and energy, logistics, and professional, scientific and technical activities have lower than average levels of productivity. There have also been relatively large falls in productivity in some of these sectors.

Broad sector group	C&W GVA (£m) (2019)	C&W GVA per job (2019)	GB GVA per job (2019)	C&W GVA per job growth (2015-19)	C&W jobs (2019)
Real estate activities	£3,549	£443,625	£424,473	-12%	8,000
Manufacturing	£6,818	£156,736	£75,762	-6%	43,500
Information and communication	£1,508	£100,533	£101,896	56%	15,000
Finance and insurance	£2,036	£90,489	£117,372	-10%	22,500
Construction	£1,793	£73,184	£78,157	0%	24,500
Agriculture, mining, electricity, gas, water and waste	£1,100	£69,841	£75,598	3%	15,750
Transportation and storage	£1,190	£42,500	£50,987	-9%	28,000
Administrative and support service activities	£2,032	£41,897	£37,756	16%	48,500
Professional, scientific and technical activities	£2,569	£38,924	£54,024	-22%	66,000
Public sector	£3,906	£37,739	£43,247	-1%	103,500
Retail and hospitality	£4,552	£37,465	£36,378	19%	121,500

Metro —— Dynamics

Sectors of focus

The LIS identified three strategic opportunities: Energy, Life Sciences and Manufacturing, due to their high productivity, GVA and jobs. There were two further sectors, Logistics & Distribution and Finance & Business Services, which have high GVA and jobs, but are less productive. The analysis confirms that these sectors are still significant in terms of their number of jobs, GVA contribution and specialisms. In total, there are 162,770 jobs in these sectors or almost one third of total jobs, with jobs growth of 2% between 2015 and 2020. The table below sets out some key facts for each. Given the relatively high GVA, number of jobs and increasing productivity in the information and communication sector (see the previous slide), this could potentially be an emerging opportunity for the sub-region.

Sector	Overview
Energy	A total of 24,180 jobs, with a 5% decline 2015-20. Cheshire East represents the largest portion of jobs at 42.4%, which is similar to its share of population. Engineering related scientific & technical consulting services is 1.5x more specialised than GB.
Life Sciences	A total of 7,260 jobs, with 15% growth 2015-20. 80% of total jobs are found in Cheshire East, which is high considering its population share of 41.1%. The manufacture of pharmaceutical preparations is around 9 times more specialised than GB (rising from 4x as specialised in 2015).
Manufacturing	A total of 32,545 jobs, with a 1% fall in jobs 2015-20. The manufacture of coke and refined petroleum is the most specialised sector but is becoming less specialised and has seen a 10% job fall in 5 years. 50% of total jobs are found in Cheshire East.
Logistics and Distribution	A total of 27,610 jobs, with 20% growth 2015-20. Warrington represents the largest portion of jobs at 42%, which is high considering its population share of 22.3%. Postal/courier activities (1.5x) and Warehousing (1.4x) are the most specialised sectors and have increased in past five years.
Finance and Business Services	A total of 71,775 jobs, with low overall growth 2015-20, with a decline in some sub-sectors. Financial services, which is 2x more specialised than average, has experienced high job growth of 41%. Jobs are evenly split across the three districts.

Source: ONS BRES (2020). Note, manufacturing excludes jobs in pharmaceutical manufacture.

Metro——Dynamics

The foundational economy

The foundational economy have a large proportion of jobs and tend to be a similar proportion of the economy everywhere. In Cheshire and Warrington, there are 177,000 jobs in retail, hospitality, health and social care or 34.5% of total employment, compared to the 35.1% English average. In Cheshire and Warrington this is 20.1% of GVA, compared to the national average of 21.1%. These tend to be lower productivity sectors, although retail and hospitality has become 19% more productive over the past five years.

There are 119,000 jobs in retail and hospitality in Cheshire and Warrington. This has fallen by 0.8% since 2015, in line with the national average. This varies across the sub-region with a decline of 10% in Warrington, no growth in Cheshire West and Chester, and a slight increase in Cheshire East. However in retail specifically, there has been an increase in jobs and specialisation.

Health and social care has 58,000 jobs across Cheshire and Warrington, increasing by 3.6% since 2015. This is below the regional (5.9%) and national (6.25%) growth rates. Job growth in Warrington has been over 30%, whereas there has been a fall in jobs in Cheshire East (-4.2%) and no growth in Cheshire West and Chester.

Area	Retail and hospitality jobs (2020)	Employment change (2015-20)	Health and social care jobs (2020)	Employment change (2015-20)
Cheshire East	46,000	2.2%	23,000	-4.2%
Cheshire West and Chester	45,000	0.0%	19,000	0.0%
Warrington	27,000	-10.0%	17,000	30.8%
Cheshire and Warrington	119,000	-0.8%	58,000	3.6%
Greater Manchester	306,000	5.5%	171,000	3.6%
Enterprise M3	171,000	-5.5%	90,000	5.9%
North West	800,000	2.9%	481,000	3.9%
England	5,874,000	-0.8%	3,438,000	6.2%

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Source: ONS BRES (2020)

Levelling Up Mission metrics

The Levelling Up White Paper sets out 12 Missions which it aims to impact through its levelling up agenda in local places by 2030. The table overleaf shows a set of indicators that measures performance against the Levelling Up Missions. Generally, Cheshire and Warrington performs well against the metrics, but there are some challenges that are identified. The table is RAG rated by performance, where green is performance above both the England/regional average, yellow is above one of the comparators and red is below both.

For **Mission 1**, to improve pay, employment and productivity, Cheshire and Warrington performs higher against national and regional averages, except for workplace earnings. This is due to lower workplace earnings in Cheshire East, where 21.9% earned below the Real Living Wage (RLW), compared with 14.6% in Cheshire West and Chester, 18.8% in Warrington and the national average of 20.4%. At the local level, over 30% of jobs in Congleton earn below the RLW, and there are a high proportion of low wage jobs in Crewe and Nantwich.

Cheshire and Warrington performs well against national and regional averages for **Mission 2**, increasing public R&D expenditure, it is the 2nd highest recipient in the country (out of 40 NUTS2 areas) of public R&D expenditure in 2018. Cheshire and Warrington underperforms for **Mission 3**, improving public transport connectivity, with a higher proportion travelling to work by car than against the national and regional averages.

Against **Mission 4**, improving gigabit capable broadband and 4G coverage, a lower proportion of households have access to superfast broadband in Cheshire and Warrington (77.7%) compared to the England average. There is wide variation across sub-region, with good broadband connectivity in Warrington, whilst Cheshire East and Cheshire West and Chester are below the regional and national averages. There are several cold spots in the sub-region, where rural areas around Crewe, Macclesfield, Congleton and Knutsford have no gigabit access. 4G coverage is generally poorer across the sub-region than the regional and national average, except for Cheshire East which has coverage across 83.4% of premises.

Mission 5 and 6 focus on improving performance in school education outcomes and adult training. Cheshire and Warrington performs well in the former with a high proportion of KS2 students reaching the expected standard (67.7%), although there is poor attainment in Cheshire West and Chester. Later in the lifecycle, learning participation in adults are below average, where the share of adults aged 19+ completing Further Education or skills training is lower than the regional and national averages, with exception of Warrington. This may indicate a higher skilled population with a higher proportion of graduates.

Cheshire and Warrington performs well for **Mission 7**, improving health outcomes. Healthy life expectancy (HLE) is higher or equivalent to the national and regional level in all local authority areas. But at the local level, health performance is worse in many urban areas, such as Northwich, Crewe, Warrington and South Macclesfield where HLE is below 60 years (vs England average of 63.5). For **Mission 8**, which is closely related to mission 7, Cheshire and Warrington has an overall higher score for life satisfaction than regional and national averages, although outcomes are poorer in Warrington.

Mission 9 measures pride of place and satisfaction with local culture and community. We use a proxy metric of expenditure on arts development and support, which shows that expenditure per 1,000 population in the sub-region is below that of the national and regional averages. In Warrington, expenditure per head spend is 5 times lower than the England average.

Cheshire and Warrington performs similar to the national average for **Mission 10** around housing affordability and better for **Mission 11** (crime) and **Mission 12** (voter turnout).

Source: Annual Survey of Hours and Earnings, Ofcom, Department for Education, ONS, Arts Council England

Metro —— Dynamics

Mission	Indicator	Cheshire East	Cheshire West and Chester	Warrington	Cheshire and Warrington	GM	EM3	North West	England
1	GVA per hour (2019)				£36.0	£31.1	£43.1	£31.2	£35.5
1	Annual resident earnings (2021)	£32,103	£32,921	£31,517	£32,345	£28,980	£37,310	£29,655	£31,490
1	Annual workplace earnings (2021)	£30,269	£32,027	£31,767	£30,937	£28,833	£34,634	£29,529	£31,480
1	Employment rate (Oct 2020 – Sep 2021)	72.3%	79.9%	79.2%	76.6%	71.9%	80.6%	73.3%	74.9%
2	Business expenditure in R&D per job (2018)				£1,772.3	£321.3		£669.2	£970.1
2	Gross expenditure in R&D per job (2016)				£224.6	£21.5		£56.4	£75.0
3	Proportion travelling to work by car by region of workplace (2020)				81.0%	72.0%	76.0%	75.0%	67.0%
4	Proportion of premises with superfast broadband (i.e. >=30mbs) (2020)	76.6%	76.1%	82.7%	77.7%	81.5%	81.3%	79.6%	78.2%
4	Proportion of premises with 4G coverage (2020)	83.4%	69.4%	74.8%	76.4%	88.1%	80.2%	82.1%	81.4%
5	Proportion of students who reach the expected level in reading, writing and maths at KS2 (2019)	66.0%	64.0%	73.0%	67.7%	65.0%		65.0%	65.0%
6	Proportion of adults who complete 19+ Further Education and skills training achievement (aged 19-64) (2019)	36.5%	41.2%	50.4%	41.4%	46.7%	33.3%	51.4%	44.9%
7	Health life expectancy female (2018-20)	67.4	67.9	64.8	66.7	60.9		62.4	63.9
7	Health life expectancy male (2018-20)	67.4	63.1	64.6	65.0	61.4		61.5	63.1
8	Personal wellbeing – life satisfaction score (2020/21)	7.6	7.4	7.2	7.4	7.3	7.5	7.4	7.38
9	Expenditure in arts and development per 1,000 population (2020/21)	£936.2	£1,247.7	£286.5	£905.4	£1,850.6	£1,210.9	£1,668.3	£1,436.6
10	House price to earnings ratio (2020)	7.8	7.3	6.3	7.1	6.5	11.6	5.8	7.8
11	Total recorded crime (excluding fraud) per 1,000 (2020)	57	79	83	81.6	113.2	59.3	97.3	82.0
12	Average election turnout rate (2015-19)				69.8%	62.7%	71.4%	65.9%	67.5%

Spotlight on the towns

All places have a range of strengths and opportunities, and the sub-region has some towns with strong economies and low levels of deprivation. This table highlights some of the levelling up challenges, drawing on the local level analysis in the rest of the pack, for the five towns looked at in the LIS – Crewe, Chester, Ellesmere Port, Macclesfield and Warrington – with the additions of Northwich and Winsford.

- **Ellesmere Port** – the neighbourhood around the two oil refineries has the lowest healthy life expectancy in Cheshire and Warrington at 55 years and most neighbourhoods have at least 16 years difference between healthy life expectancy (HLE) and life expectancy (LE). There are three wards where 25% of year 6's are classed as obese (vs 20.4% England average). Public transport connectivity is also a challenge with poor connections to Liverpool.

- **Chester** – There is relatively high public transport access to jobs, with 70% of neighbourhoods having a higher number of accessible jobs via 60 min public transport for every job in a 5-mile radius. But Covid-19 has impacted the way people work with a negative outflow of workers due to increased remote working (based on the 'Zoomshock' analysis). There are challenges around health – a quarter of neighbourhoods have over a 16 year difference between HLE and LE. Just over half of neighbourhoods have a carbon footprint above the England average (8,330kg).

- **Northwich** – there are large healthy inequalities with a difference in HLE of 13 years between two adjacent neighbourhoods. Health deprivation is highest in the town centre (in 20% most deprived in the country) and Witton (in 10% most deprived in the country). There are four schools where pupils on Free School Meals perform 30% points worse at Key Stage 2 than other pupils. Northwich has observed the second highest increase out of 6 towns in universal credit claims per head of population between June 2018-22 at 218.8% (GB average of 478%)

- **Winsford** – 75% of neighbourhoods are in the lowest health deprivation decile. One of the neighbourhoods in the town has the largest difference between HLE and LE in the sub-region (21 years), and all neighbourhoods have HLE below 60 years. There is poor public transport access to jobs with a lower number of jobs via 60 min public transport for every job in a 5 mile radius, and a high risk of digital exclusion around Clive, The Grange and the Dean. Winsford has observed considerable growth in universal credit claims from June 2018-22 at just over 200%, rising to 98 per 1,000 population.

- **Warrington** – 30% of neighbourhoods are in the lowest two deciles for health deprivation in England, with poorer health outcomes in the centre of the town. There are seven neighbourhoods with HLE below 60 years. In the town centre, there is a low carbon footprint but this is high in the south (5th highest in the sub-region found in Appleton). Warrington has observed the lowest relative increase in universal credit claims between June 2018 – 22 at 117%.

- **Crewe** – there is high health deprivation in the centre and north of the town, and in the ward St Barnabas, there is the highest year 6 obesity rates in the sub-region at 35.3%. Almost 22% of jobs earn below the Real Living Wage, which is above the sub-regional and national average. Neighbourhoods in the south of the town have a high carbon footprint of over 14,000 kg per capita (vs England av. 8,330kg).

- **Macclesfield** – the south of the town has a HLE below 60 years. Suburbs of Tytherington, Whirley Grove, and Bollington have a carbon footprint of over 13,000kg per capita. Ivy Meade has some of the highest risk of digital exclusion in the region. But public transport access to jobs is good – four times as many jobs are accessible via 60 minutes on public transport than exist within a five mile radius – vs. the GB average of 1.8.

Source: University of Sheffield, Ministry of Housing, Communities and Local Government, Public Health England, Onward UK, CREDS and ONS.

Metro —— Dynamics

Spotlight on the rural economy

This highlights the findings of the local level analysis across the four priorities in rural areas.

Sustainable

70% of rural neighbourhoods have a higher carbon footprint relative to the England average of 8,330kg per capita.

Rural areas in between Knutsford & Macclesfield and west of Nantwich have the highest median electricity consumption in the sub-region of over 5000kWh per household reading meter, which is almost double the national average of 2,982.

Low density of electric vehicle charging points, with only 37 devices (20% of total) found in rural areas.

Healthy

Healthy life expectancy is higher in rural areas compared to the main centres, where 12 neighbourhoods have HLE of over 71 years. This is high compared to the national average of 63.5 years.

Rural residents live fewer years in poor health, where less than 2% of neighbourhoods have a gap of over 16 years between HLE and LE are rural. The gap is around 17.8 years in England.

There are no rural areas that fall in the worst decile for health deprivation.

Inclusive

High risk of digital exclusion in rural areas including west of Wilmslow, Northwich, Macclesfield and the area between Sandbach and Alsager.

9% of rural primary schools have over a 30% performance gap between FSM and non FSM pupils, vs the sub-regional average of 30%.

Growing

Jobs growth in rural areas of 2% between 2015-20, compared to sub-regional average (3.9%) and national average (2.9%).

Potential for remote working to lead to an inflow of workers into rural areas, such as Rode Heath, Bradwall Green, Lower Withington and Little Sutton, but challenging if connectivity is poor.

Poor transport quality, with most rural areas having a lower number of jobs accessible via 60 min of public transport than within a 5 mile radius, compared to the national average.

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2. A sustainable Cheshire & Warrington

Metro——Dynamics

A sustainable Cheshire & Warrington

Sustainable is one of the four priority areas in the vision. We carried out a range of new analysis, including looking at carbon emissions by sector and locally, energy usage, housing energy efficiency, access to electric vehicle charging points, fuel poverty, green jobs and changes in climate.

Some of the interesting findings in this section include:

- Cheshire and Warrington has higher than average carbon emissions, including for both domestic and industrial.

- There is high demand for energy, including both gas and electricity, in Ellesmere Port, but also other industrial areas, such as Crewe and Warrington.

- In recent years, there have been improvements in energy efficiency and the availability of electric vehicle charging points, but there is still a high proportion of energy inefficient properties, which risks households falling into fuel poverty in the context of the rising cost of living, and there are fewer than average charging points.

- The combination of energy and manufacturing sectors in the local economy bring opportunities for the creation of new green jobs.

Overview of carbon emissions and energy consumption

This table shows different indicators to measure carbon emissions and consumption. Across the measures there is a consistent message that Cheshire and Warrington is a high energy user and has a high carbon footprint.

The first measure shows total emissions, from BEIS estimates. This covers carbon dioxide produced from various sources: domestic, industrial, commercial, road transport and land use changes. This is the standard dataset used to provide a nationally consistent evidence base for sub-national greenhouse gas emissions. **Cheshire West and Chester has the fifth highest total emissions for any authority in the country**.

The second measure is from the same dataset, but shown relative to land area. This similarly highlights that Cheshire and Warrington and all its local authorities have a higher kiloton of CO_2 per km^2) relative to the national average. Using this metric, Warrington has the highest CO_2 density per kilometre.

The third measure comes from CREDS and is considered a more holistic approach to measuring carbon footprint, covering a range of datasets to factor for individual behaviours and consumption patterns. This includes food consumption, commuting, housing efficiency, flying and public transport usage. However, these estimates are modelled and draw from a range of data that have different methodologies across their data collection. In this dataset, it shows that all local authorities across Cheshire and Warrington have a higher carbon footprint relative to the national average, and Warrington has the lowest emissions per capita.

Indicator	CE	CW&C	W	C&W	National
Total greenhouse gas emissions KT of CO_2 equivalent	2,515.5	3,856.8	1,351.4	7,723.7	-
Carbon dioxide emissions (KT of CO_2 per km^2), 2019	2.2	4.1	7.4	2.2	1.4
Carbon footprint per capita* (KG of CO_2 per capita), 2020	9,290	8,760	8,340	8,797	8,330

* Capita refers to head of total resident population

Metro —— Dynamics

High domestic carbon footprint

Total domestic kg of CO2 per capita (2020)
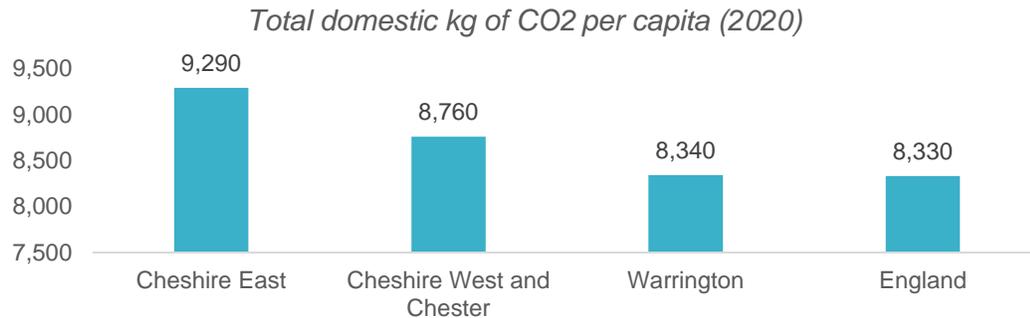
The chart above shows domestic carbon footprint per capita* at the local authority level in Cheshire and Warrington. All three are above average with the highest carbon footprint per capita in Cheshire East (9,290 kg) – this is the 92nd highest out of 328 local authorities.

Many neighbourhoods across the sub-region, including rural and urban, are high emitters, with 58% of neighbourhoods having a higher CO2 per capita than the England average (8,300 kg). The area to the east of Wilmslow and north of Macclesfield covering Adlington, Bollington and Tytherington have particularly high carbon footprints at 12,500 kg of C02 per capita. In some of the more rural parts there is a higher carbon footprint. This is most pronounced on the outskirts of towns, such as Warrington, Neston and Chester. These areas also have low public transport connectivity and are more reliant on cars.

Carbon consumption is low within the urban centres of Cheshire and Warrington, in particular, Chester, Ellesmere Port, Northwich, with under 6,000 kg of CO2 per capita.
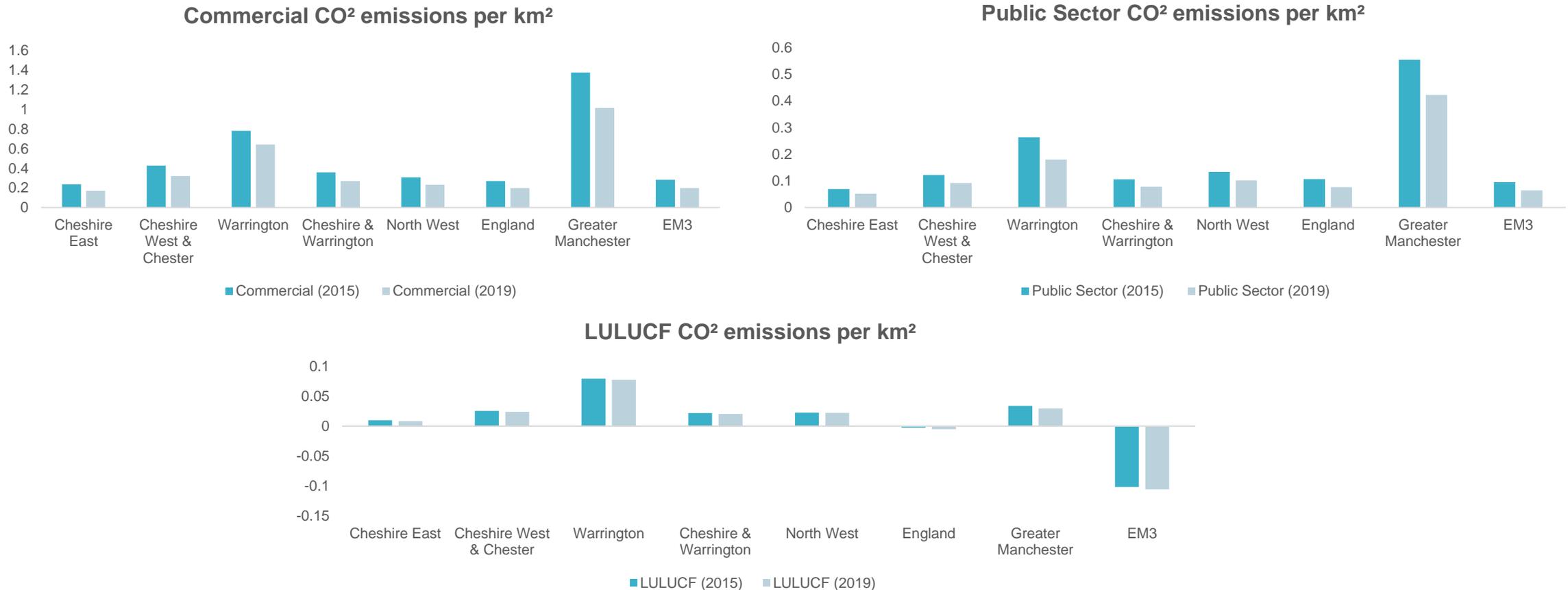
* Capita refers to head of total resident population

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Metro ——— Dynamics
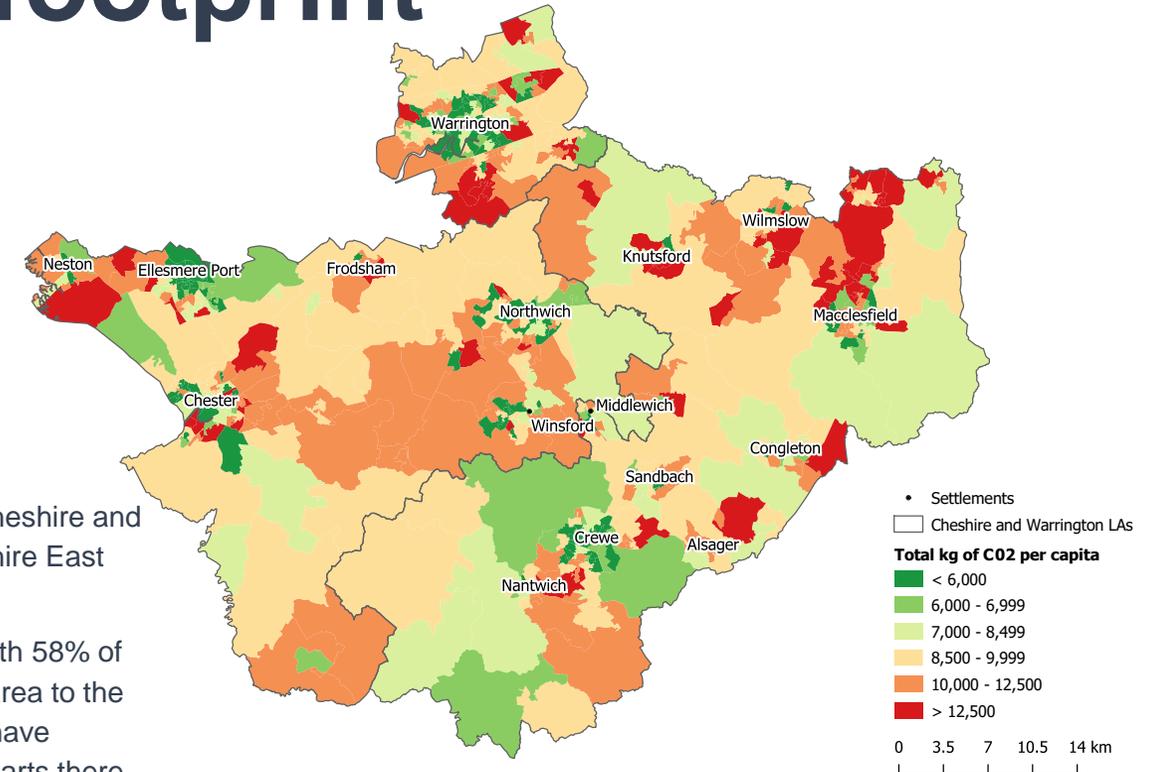
Carbon dioxide emissions

The chart below shows total carbon dioxide emissions per km² in Cheshire and Warrington and comparators. Total CO2 emission per km² are higher than regional/national averages but less than half the Greater Manchester average.
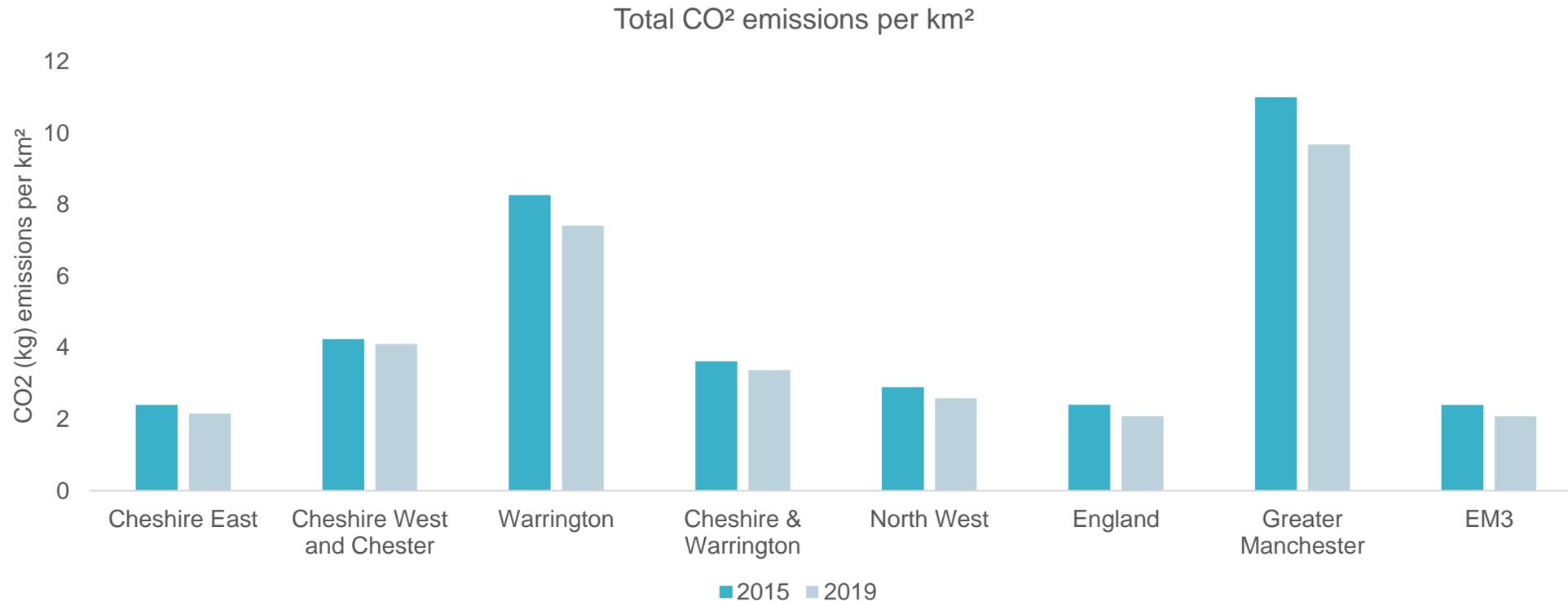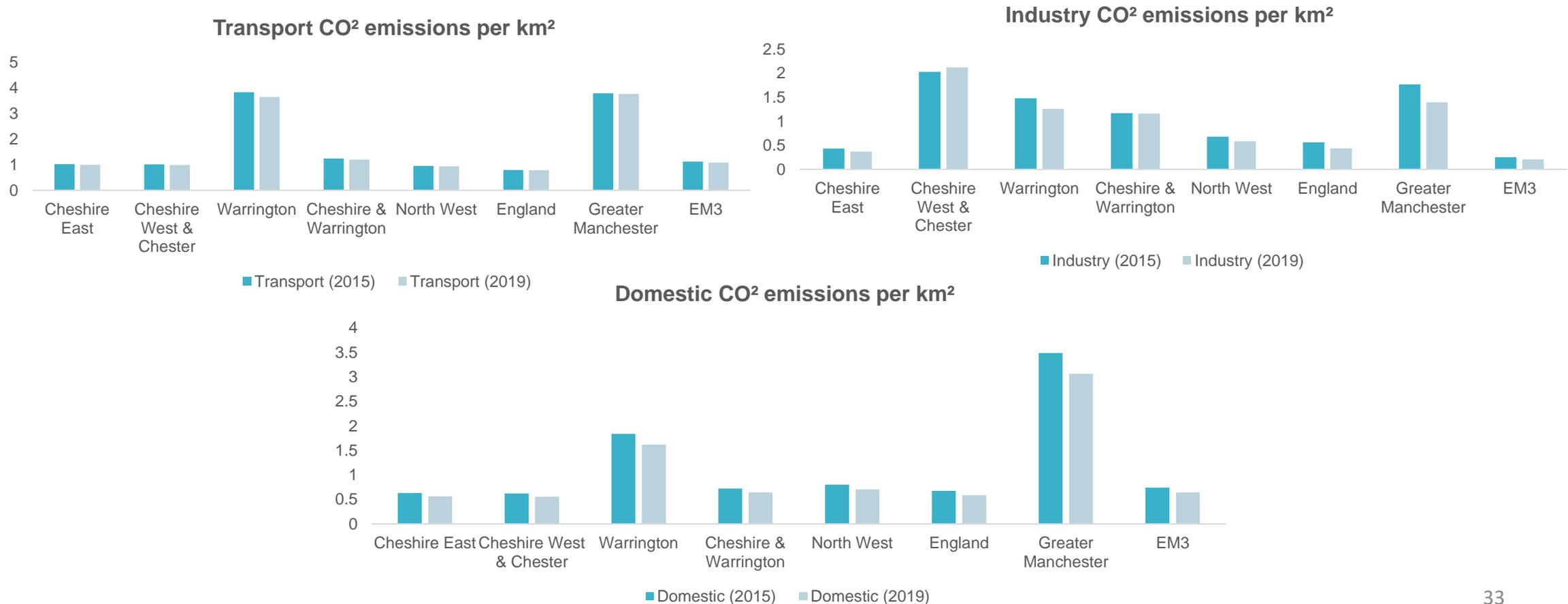
Total CO² emissions per km²

Source: Department for Business, Energy and Industrial Strategy (2015-19)

Metro —— Dynamics

Carbon dioxide emissions

The charts below show carbon dioxide emissions per km^2 in Cheshire and Warrington and comparators. Commercial C0^2 emissions (kg) per km^2 are higher than the national and regional averages.

Commercial CO^2 emissions per km^2

■ Commercial (2015)   ■ Commercial (2019)

Public Sector CO^2 emissions per km^2

■ Public Sector (2015)   ■ Public Sector (2019)

LULUCF CO^2 emissions per km^2

■ LULUCF (2015)   ■ LULUCF (2019)

Source: Department for Business, Energy and Industrial Strategy (2015-19). LULUCF stands for Land Use, Land-Use Change & Forestry.

Metro ——— Dynamics

Carbon dioxide emissions

The charts below show carbon dioxide emissions per km² in Cheshire and Warrington and comparators.
Industry C0² emissions are above the national average and have not decreased over the past four years, as the other comparators have.
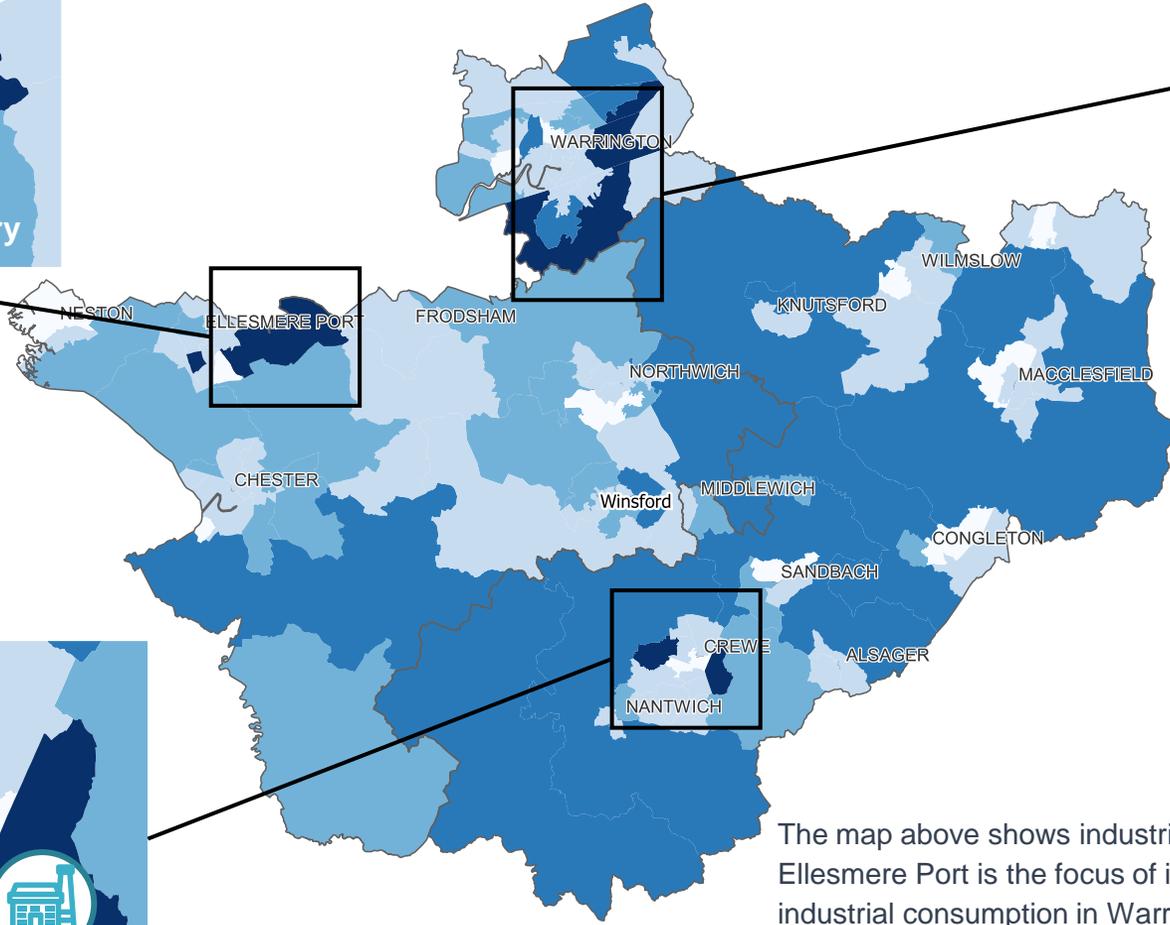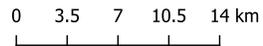

Transport CO² emissions per km²

■ Transport (2015)   ■ Transport (2019)

Industry CO² emissions per km²

■ Industry (2015)   ■ Industry (2019)

Domestic CO² emissions per km²
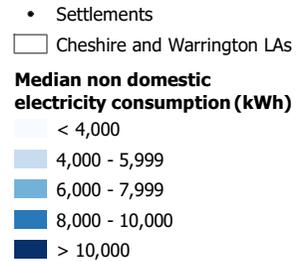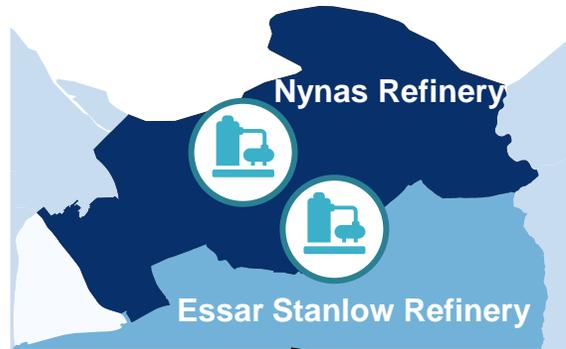
■ Domestic (2015)   ■ Domestic (2019)

33

Source: Department for Business, Energy and Industrial Strategy (2015-19)

Metro —— Dynamics

Sectoral carbon dioxide emissions

The chart shows carbon dioxide emissions per km² by sector for Cheshire and Warrington and comparators. Transport makes up the large proportion of total C02 emissions per km2 in the LEP. This is particularly pronounced in Warrington.
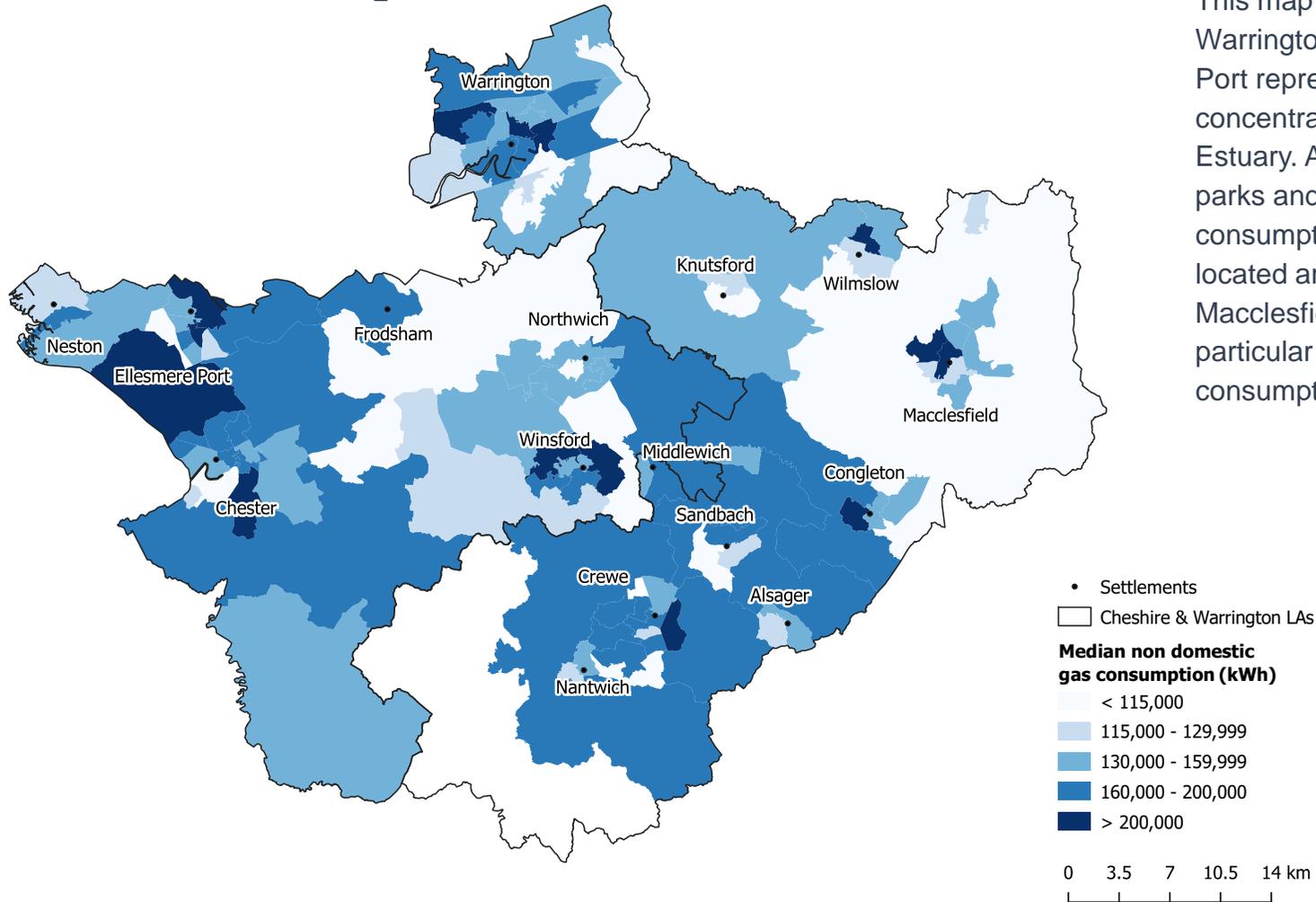
Source: Department for Business, Energy and Industrial Strategy (2019). LULUCF stands for Land Use, Land-Use Change & Forestry.

Metro —— Dynamics

Areas with high industrial electricity consumption

Nynas Refinery

Essar Stanlow Refinery

Grange Industrial Estate

Stretton Trading Estate

Barleycastle Trading Estate

WARRINGTON

WILMSLOW

KNUTSFORD

NESTON   ELLESMERE PORT   FRODSHAM

MACCLESFIELD

NORTHWICH

- Settlements
- Cheshire and Warrington LAs

Median non domestic electricity consumption (kWh)

	< 4,000
	4,000 - 5,999
	6,000 - 7,999
	8,000 - 10,000
	> 10,000

0   3.5   7   10.5   14 km

CHESTER

Winsford   MIDDLEWICH

CONGLETON

SANDBACH

CREWE   ALSAGER

NANTWICH

Bentley Motors

Crewe Business Park

Cheshire and Warrington's industrial carbon footprint is also high, with CO_2 emission per km^2 of more than double that of the England and North West averages at 1.2KT per kilometre (in 2019). Despite Greater Manchester having a higher CO_2 emissions density than the sub-region, this appears to be falling fast in line with national/regional trends, yet CO_2 emissions have remained constant across Cheshire and Warrington over the past four years.

The map above shows industrial electricity consumption in 2020. Often Ellesmere Port is the focus of industrial decarbonisation but there is high industrial consumption in Warrington and Crewe.

35

Source: MSOA nondomestic electricity, BEIS (2020), UK Local authority carbon dioxide emissions national statistics 2005 to 2019
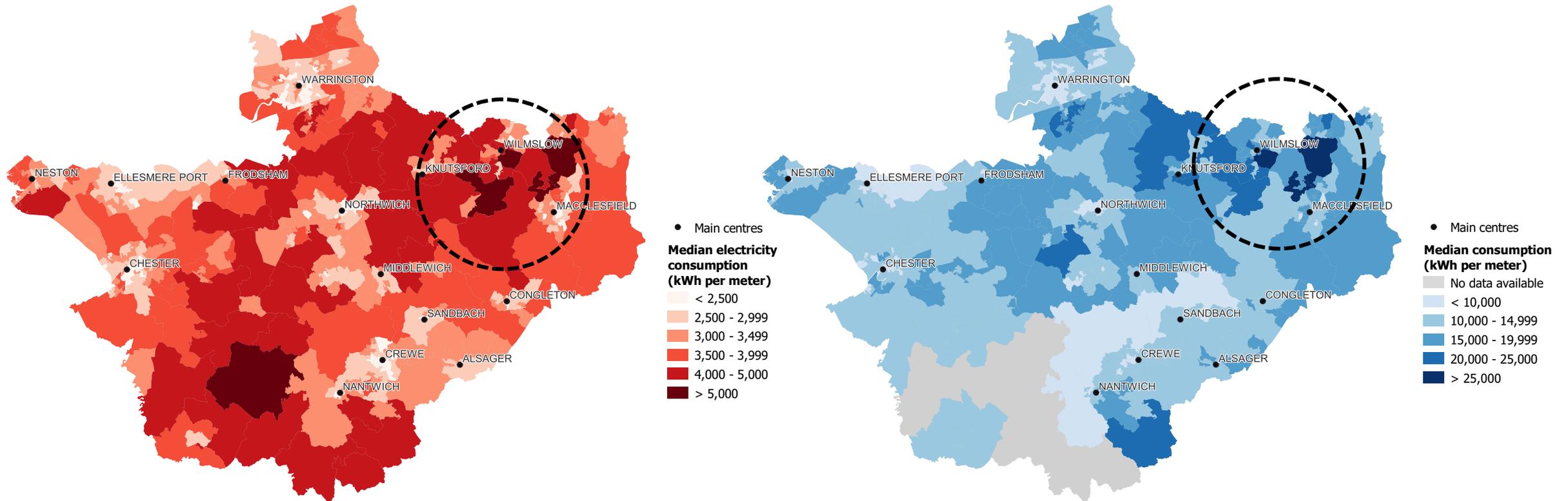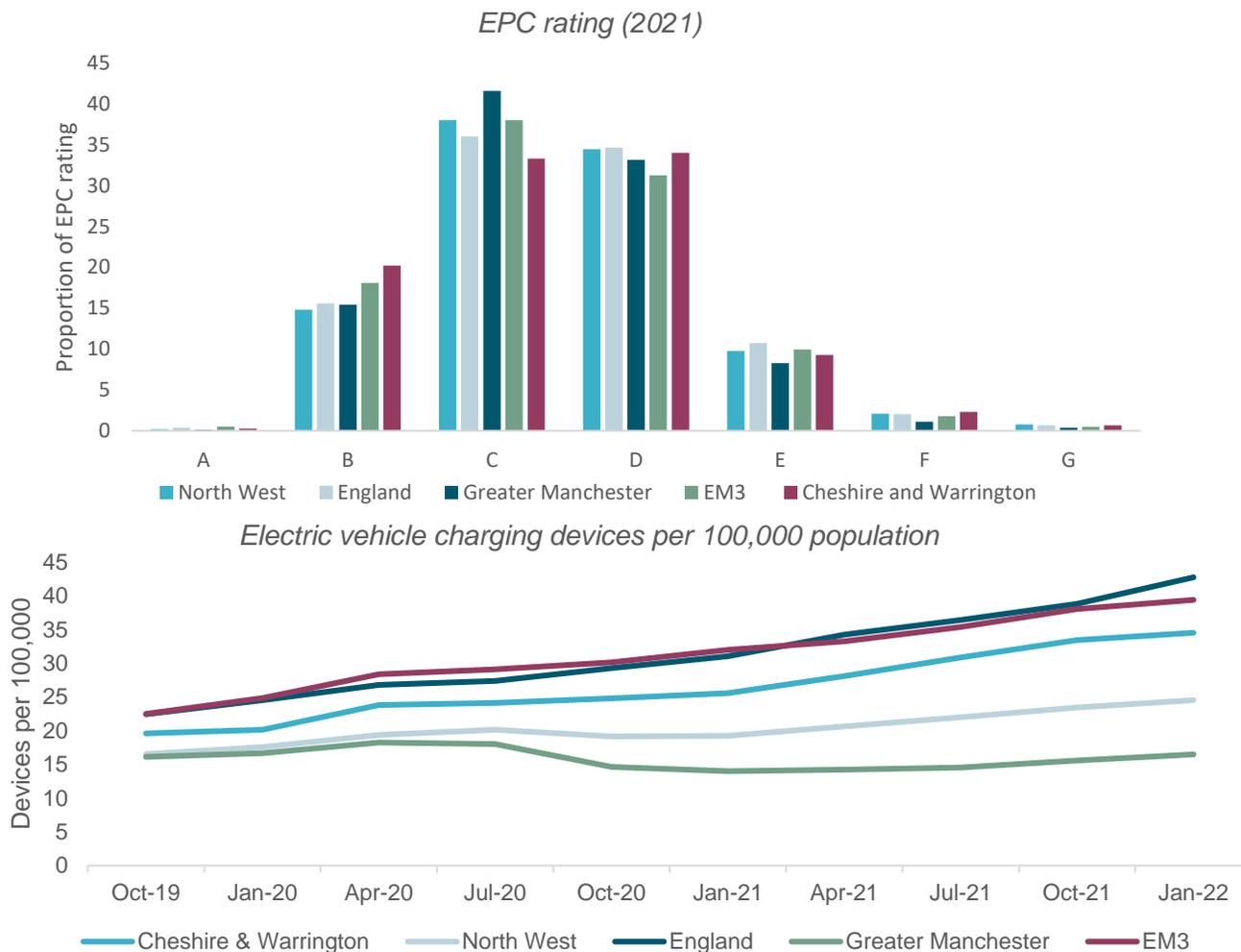
Areas with high industrial gas consumption

This map shows industrial gas consumption in Cheshire and Warrington in 2020. Similar to electricity consumption, Ellesmere Port represents an area of high consumption, although this is most concentrated further south than the industrial area on the Mersey Estuary. Areas around Crewe and Warrington, where business parks and industrial estates are based also have high gas consumption. Other areas of high industrial gas consumption are located around the main centres, including Chester, Winsford, Macclesfield, Wilmslow and Congleton. It was difficult to identify particular sites that could be the main driver of these high levels of consumption.

- Settlements
- ☐ Cheshire & Warrington LAs

Median non domestic gas consumption (kWh)

- < 115,000
- 115,000 - 129,999
- 130,000 - 159,999
- 160,000 - 200,000
- > 200,000

0   3.5   7   10.5   14 km

Source: MSOA nondomestic gas consumption, BEIS (2020)

Domestic energy usage

The maps show domestic electricity and gas consumption across Cheshire and Warrington. Domestic energy consumption is highest in the areas between Knutsford and Wilmslow.

Source: Department for Business, Energy and Industrial Strategy (2020)

Metro ——— Dynamics

Recent improvements in green infrastructure

EPC rating (2021)

Proportion of EPC rating

Legend: North West, England, Greater Manchester, EM3, Cheshire and Warrington

Electric vehicle charging devices per 100,000 population

Devices per 100,000

Legend: Cheshire & Warrington, North West, England, Greater Manchester, EM3

Properties in Cheshire and Warrington have become more energy efficient over time. The area has the highest proportion of residential properties with energy certificate rating A or B (20.5%) across comparator areas, and compared to the national average. The number of houses per EPC rating is included on the next page.
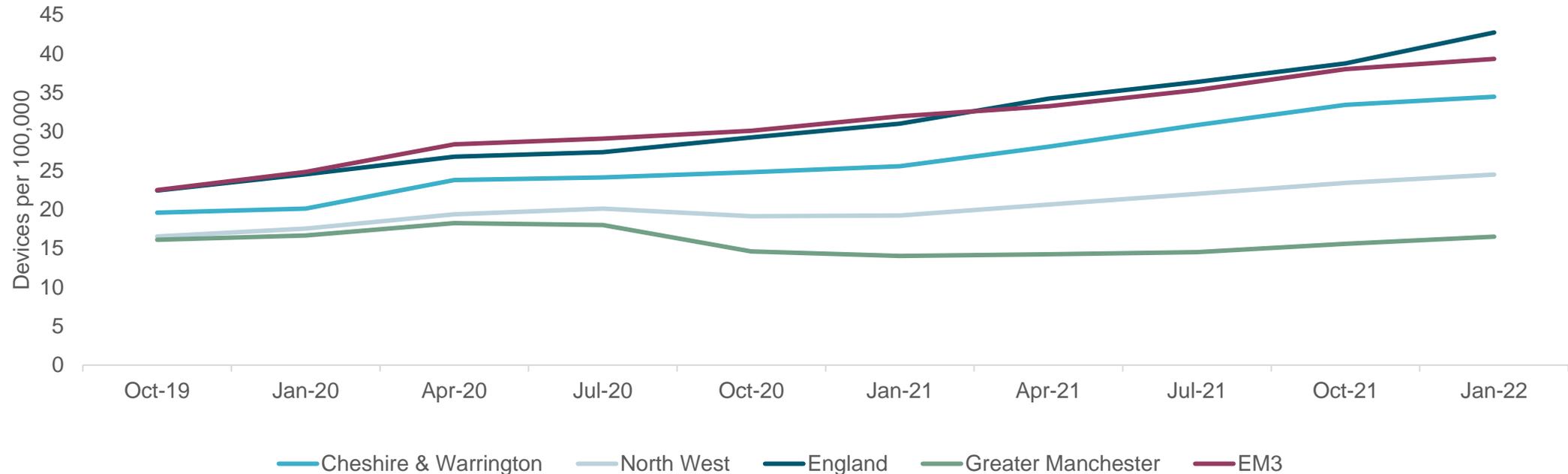
The proportion of energy efficient properties in Cheshire and Warrington has doubled since 2010 (increasing by 11 percentage points). Across England, there has also been a rise in energy efficient buildings but not to this scale of magnitude.

However, a further push for improved energy efficiency is required, with around half of buildings at a D rating or below, for all the local authorities in Cheshire and Warrington.

There have also been improvements in the availability of electric vehicle charging points. The number of devices per 100,000 population is below the England average, but the sub-region leading the way for the north, with a 35% growth in devices per head in just a year, up to 34.5 per 100,000 population. Most charging devices are clustered within the main towns, with a lack of access across rural areas.

Metro —— Dynamics

Electric vehicle charging devices

This chart shows electric vehicle charging devices per 100,000 population. The number of devices in Cheshire and Warrington is below the England average, but the sub-region is leading the way for the north, with a 35% growth in devices per head in just a year, up to 34.5 per 100,000 population.
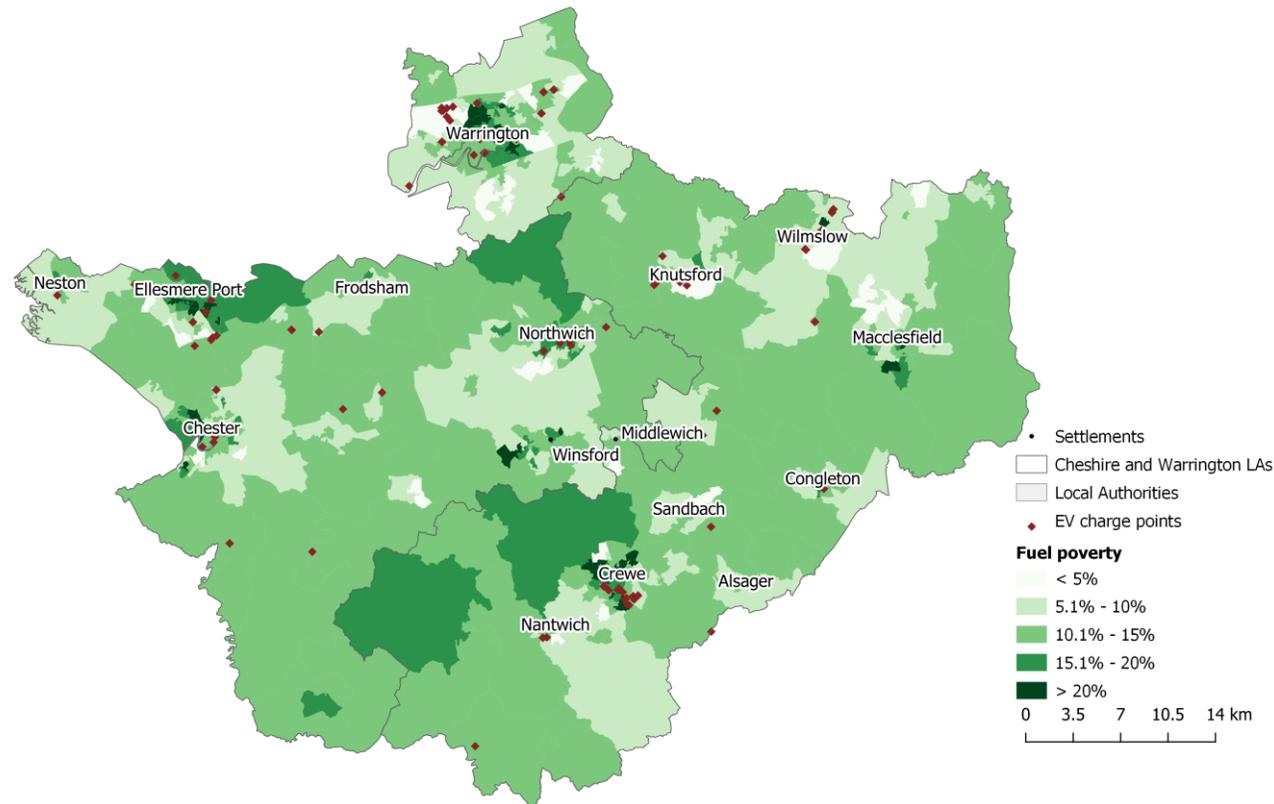

Legend: Cheshire & Warrington — North West — England — Greater Manchester — EM3

Source: Department of Levelling Up, Housing and Communities (2021)

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Metro —— Dynamics

Number of houses per EPC rating

This table shows the number of houses per EPC rating in Cheshire and Warrington and its local authorities.

Rating	Cheshire and Warrington	Cheshire East	Cheshire West and Chester	Warrington
A	69	40	22	7
B	5,421	2,732	1,830	859
C	8,927	4,058	2,911	1,958
D	9,112	4,476	3,054	1,582
E	2,485	1,300	938	247
F	613	348	208	57
G	180	91	70	19
Total	26,807	13,045	9,033	4,729

Source: Department of Levelling Up, Housing and Communities (2021)

Fuel poverty and electric vehicle charging points

This map shows two data sets: the proportion of households in fuel poverty across Cheshire and Warrington and the location of electric vehicle charging points. This shows that there are high levels of fuel poverty in urban areas. Charging points tend to be clustered in towns with fewer available in rural areas.

Source: Department for Business, Energy and Industrial Strategy (2019) and Department for Transport (2020)

Metro —— Dynamics

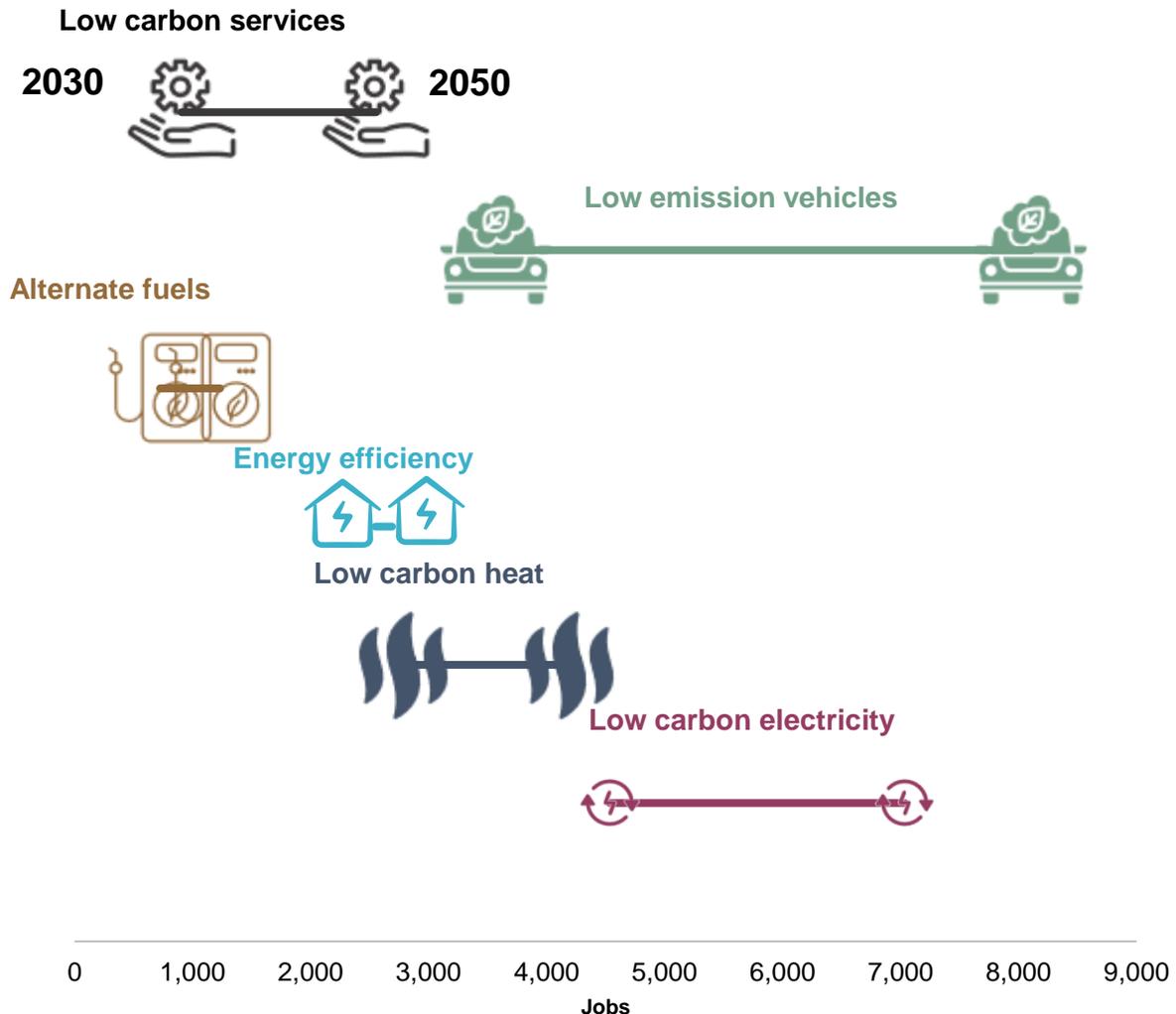# Opportunities for a greener future

The current number of people employed in the Low Carbon and Renewable Energy Economy is estimated to be around 4,000. By 2030, this is set to grow fourfold to 15,000, and by 2050, it is forecasted that there will be 25,815 jobs in this sector, making up 5% of the total current workforce. Cheshire East will contribute to around 50% of these jobs. This is consistent with analysis in the Skills Report.

A large proportion of the jobs will be in low emission vehicles and infrastructure (31.4%), representing almost double the relative contribution to the England average. This sector will also see the largest absolute job increase from 2030 to 2050 with around 4,500 new jobs, reaching a total of 8,100 jobs.

This will build on existing sub-regional strengths, including Bentley, which at the start of 2022 built its first fully electric car at the Crewe Factory, as well as Vauxhall's pledge to invest £100m to build electric cars at Ellesmere Port. There is also a new project in Ellesmere Port called 'Manufacturer Net Zero' that will build onsite electric vehicle charging points. This may contribute to closing the gap in the number of devices per 100,000 relative to the national average.

Alternate fuels including bioenergy and hydrogen production represent a low contribution of 5% (1,233 jobs), which is less than half the relative national contribution. These jobs include construction, manufacture, installation, operation, management and decommissioning.

HyNet is a major opportunity with 6,000 jobs, which are likely not fully captured here. The projection of green jobs could be more significant if the project portfolio by Net Zero North West is delivered, which will deliver change at scale including E port, HyNet, Protos and Project Vanguard (C&W Skills Report). Many of the initial jobs created will be in construction and the greatest skills challenges are in retrofit and heat pumps.

Low carbon services

2030   **2050**

Low emission vehicles

Alternate fuels

Energy efficiency

Low carbon heat

Low carbon electricity

| 0 | 1,000 | 2,000 | 3,000 | 4,000 | 5,000 | 6,000 | 7,000 | 8,000 | 9,000 |

Jobs

Metro —— Dynamics

Forecasted green jobs in 2050

The chart shows the sector composition of green jobs by 2050 in Cheshire and Warrington and comparators. Low emission vehicles represents the largest portion of jobs (31.4%) and alternate fuels the lowest (4.8%).

Source: Local Government Association (2020)
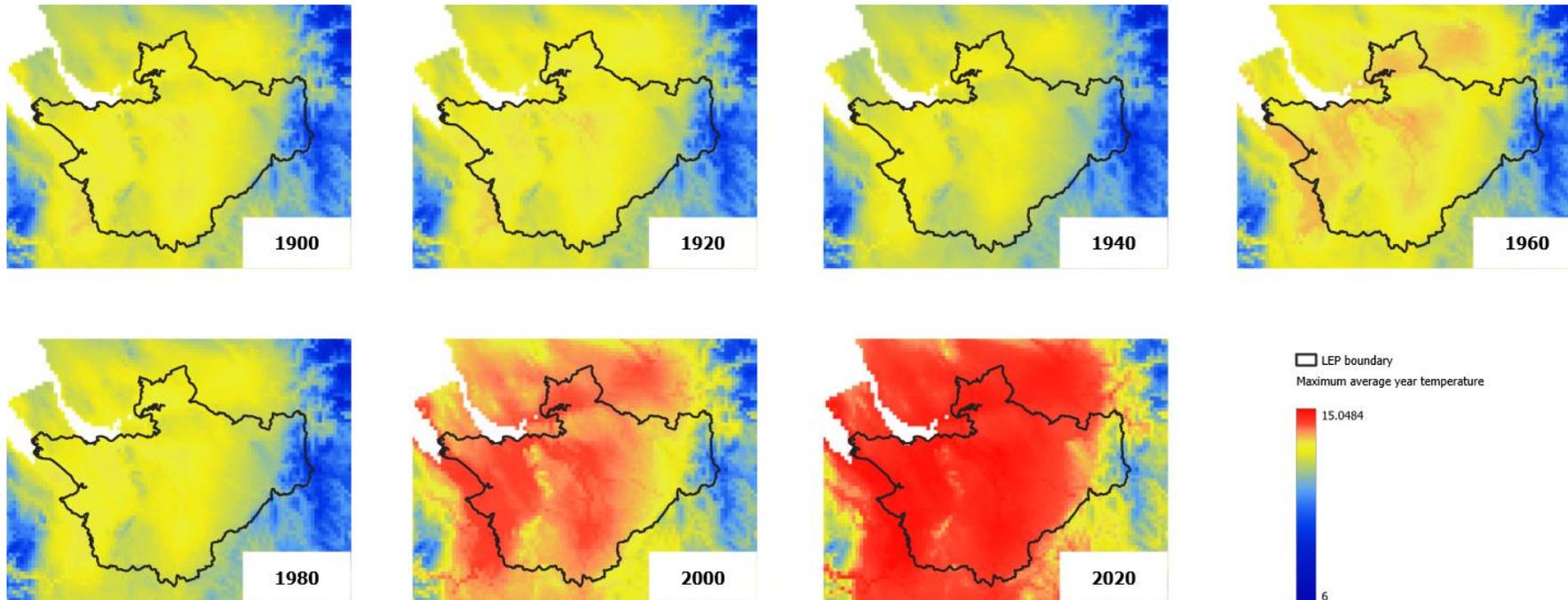
Metro —— Dynamics
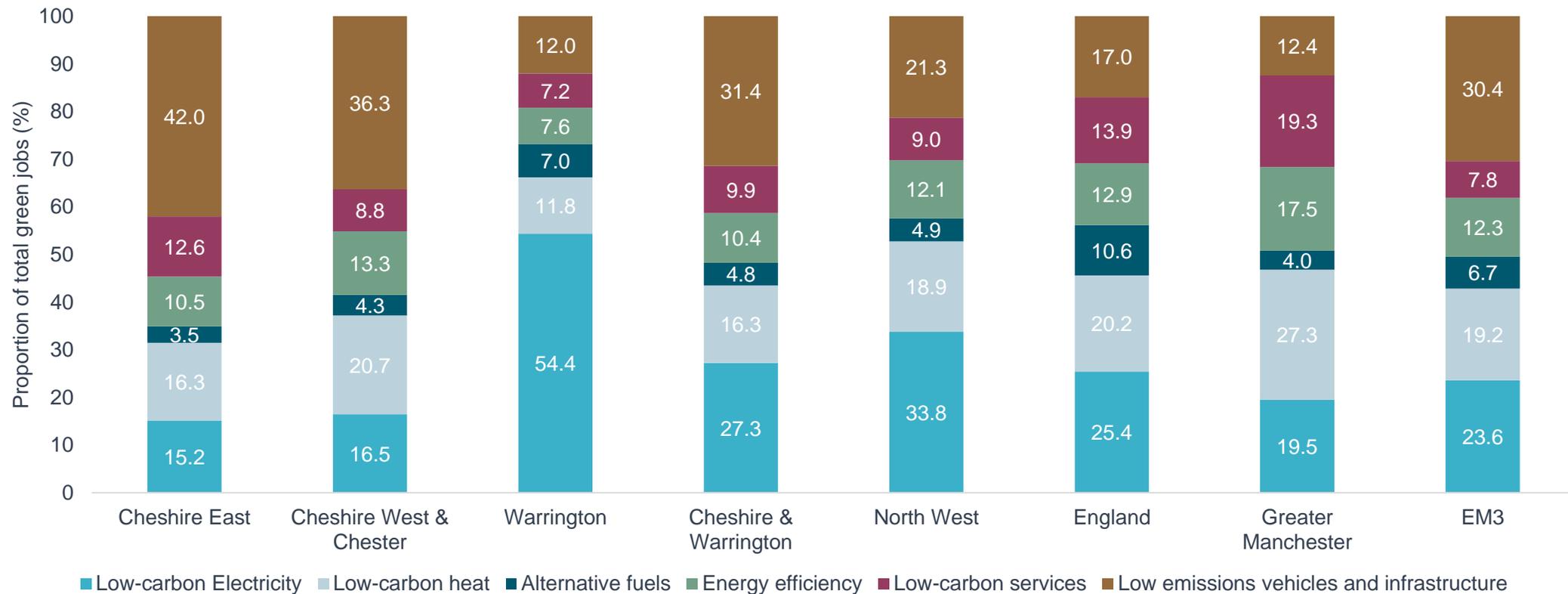
Average rainfall

The map shows average rainfall between 2000 and 2019 across Cheshire and Warrington. The driest years in the past twenty years occurred in 2010, 2011 and 2018.

Source: Centre for Environmental Data Analysis (2000-19)

Metro ——— Dynamics
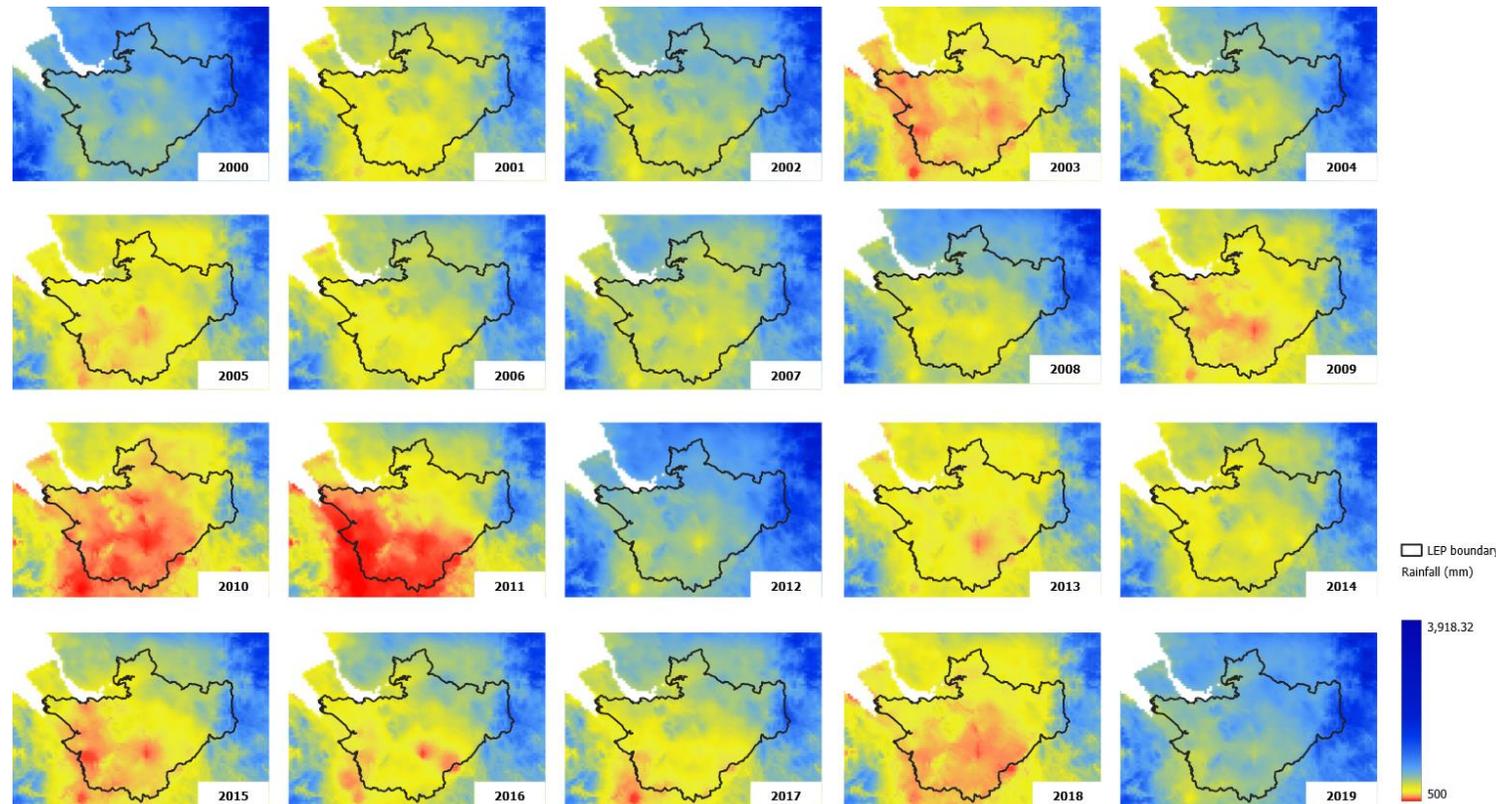
Maximum average day temperature

The map shows maximum average day temperature between 1900 and 2020 in Cheshire and Warrington. The hottest periods since 1900 have been in the two most recent 20 year intervals.

Source: Centre for Environmental Data Analysis (2000-19)

3. An inclusive Cheshire & Warrington

An inclusive Cheshire & Warrington

Inclusive is one of the four priority areas in the vision. We carried out a range of new analysis. This included looking at outcomes across the lifecycle, such as school readiness (defined as having reached a good level of development at the end of the Early Years Foundation Stage), child poverty, educational attainment, and youth unemployment. We looked at the educational attainment gap in more detail at the individual school level. Another area of focus was earnings and employment trends, Universal Credit, economic inactivity, full-time and part-time wages, and changes in the share of jobs earning below the Real Living Wage. Lastly we analysed different types of poverty, including food poverty and digital inclusion.

Some of the interesting findings in this section include:

- Cheshire and Warrington performs well at the sub-regional level for most metrics, including child poverty, but this varies significantly at the local level with higher levels of child poverty in the larger towns.

- Examining gaps in educational attainment at Key Stage 2 between pupils on Free School Meals and other pupils at the individual school level shows that there are gaps of over 40% in towns such as Knutsford and Congleton. In areas with higher deprivation, such as Ellesmere Port and Crewe, pupils on Free School Meals perform better than those on non Free School Meals. But at KS3 and KS4 we see pupils on Free School Meals performing significantly worse in less affluent areas than their peers in more affluent areas. These are larger than national equivalents and remain persistent, requiring further investigation.

- Earnings in the sub-region are high and overall there is a lower than average proportion of jobs earning below the Real Living Wage, with this having fallen over time. But within Cheshire and Warrington there are high levels of variation.

- Economic inactivity had been falling in Cheshire and Warrington since 2009 but has increased since the start of the pandemic. The most common reasons for economic inactivity are early retirement and long-term sickness, both of which have increased.

Levelling up the Lifecycle

The Levelling up the Lifecycle Approach has been used to carry out a high-level diagnostic of the economic and social challenges facing people in Cheshire and Warrington. This looks at outcomes for people in five different stages of life: Early Years, Childhood, Young Adults, Working Years and Older Years. It considers socio-economic indicators across the themes of education, skills, work, housing, deprivation and health.

Data has been compared for local authorities across England to rate the values into five categories from 'red' (worse) to 'dark green' (best). This has involved ranking values for the indicators, and then the overall life stages, based upon a combined score of all the indicators in that life stage.

The infographics on the following slides show the lifecycle for Cheshire East, Cheshire West & Chester, and Warrington.

Source: Metro Dynamics analysis

Cheshire East

Metro ——Dynamics

EARLY YEARS

Education
% achieving good level of development

Deprivation
Child deprivation

Health
Overweight in reception

CHILDHOOD

Education
KS2 (expected attainment)

Deprivation
Child deprivation

Health
Overweight in Year 6

YOUNG ADULTS

Skills
Education and training participation

Work
Universal Credit

Health
Substance misuse

Skills
No or low qualifications

Work
Universal Credit

Deprivation
Real Living Wage

Housing
Fuel poverty

Health
Overweight (18+)

WORKING YEARS

OLDER YEARS

Work
Age 50+ in employment

Deprivation
Low income household

Health
Life expectancy

Source: Metro Dynamics analysis

49

Cheshire West & Chester

EARLY YEARS

Education — % achieving good level of development

Deprivation — Child deprivation

Health — Overweight in reception

CHILDHOOD

Education — KS2 (expected attainment)

Deprivation — Child deprivation

Health — Overweight in Year 6

YOUNG ADULTS

Skills — Education and training participation

Work — Universal Credit

Health — Substance misuse

Skills — No or low qualifications

Work — Universal Credit

Deprivation — Real Living Wage

Housing — Fuel poverty

Health — Overweight (18+)

Work — Age 50+ in employment

Deprivation — Low income household

Health — Life expectancy

WORKING YEARS

OLDER YEARS

Source: Metro Dynamics analysis

50

Warrington

Metro —— Dynamics

EARLY YEARS

Education

% achieving good level of development

Deprivation

Child deprivation

Health

Overweight in reception

CHILDHOOD

Education

KS2 (expected attainment)

Deprivation

Child deprivation

Health

Overweight in Year 6

YOUNG ADULTS

Skills

Education and training participation

Work

Universal Credit

Health

Substance misuse

Skills

No or low qualifications

Work

Universal Credit

Deprivation

Real Living Wage

Housing

Fuel poverty

Health

Overweight (18+)

WORKING YEARS

Work

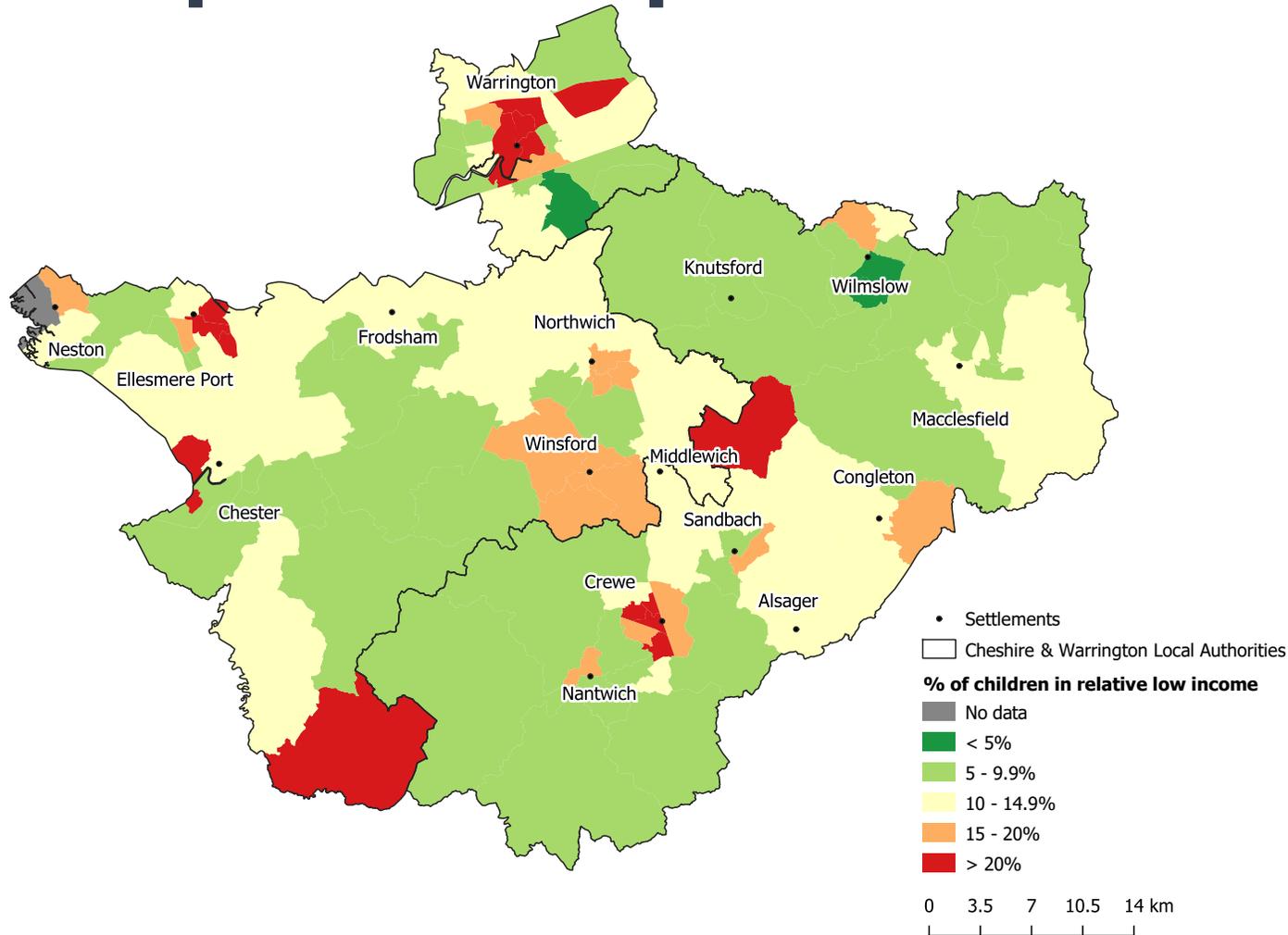Age 50+ in employment

Deprivation

Low income household

Health

Life expectancy

OLDER YEARS

Source: Metro Dynamics analysis

Metro —— Dynamics

Low overall child poverty levels but with spatial inequalities

Approximately 14% of children live in relative low income families in the sub-region (2020), which is below the national average of 19.3% and Greater Manchester average of 25.6%.The percentage has increased in Cheshire and Warrington from 11.7% in 2015, although this is similar for the national and Greater Manchester averages.

The area also has lower levels of food poverty and insecurity. Around 5% of households are food insecure in Cheshire East, which is around half the national average (10.7%), with the highest in Warrington at 6.4% (2021).

This map shows child poverty by ward. Similarly to patterns of deprivation, low overall levels of child poverty mask variation at the local level. Some areas in the north east around Knutsford and Macclesfield, such as Disley, Macclesfield Tytherington and Poynton East and Pott Shrigley, have some of the lowest levels of child poverty (these wards have rates at or below 7%). Grappenhall has the lowest levels at 3.8%.

In other areas, levels of child poverty are above the UK average, such as in Crewe (Crewe St Barnabus: 25%), Malpas (26%), Ellesmere Port (Bewsey and Whitecross: 27.5%) and East of Middlewich (Dane Valley: 29.5%)

Source: Department of Work and Pensions (2020)

Metro —— Dynamics

Child poverty

The chart below shows the proportion of children living in relative low income over time in Cheshire and Warrington and comparators. Cheshire and Warrington has lower levels of child poverty than the UK average and Greater Manchester, but above that of the Enterprise M3 (EM3) area.

Source: Department of Work and Pensions (2015-20)

Metro ——— Dynamics
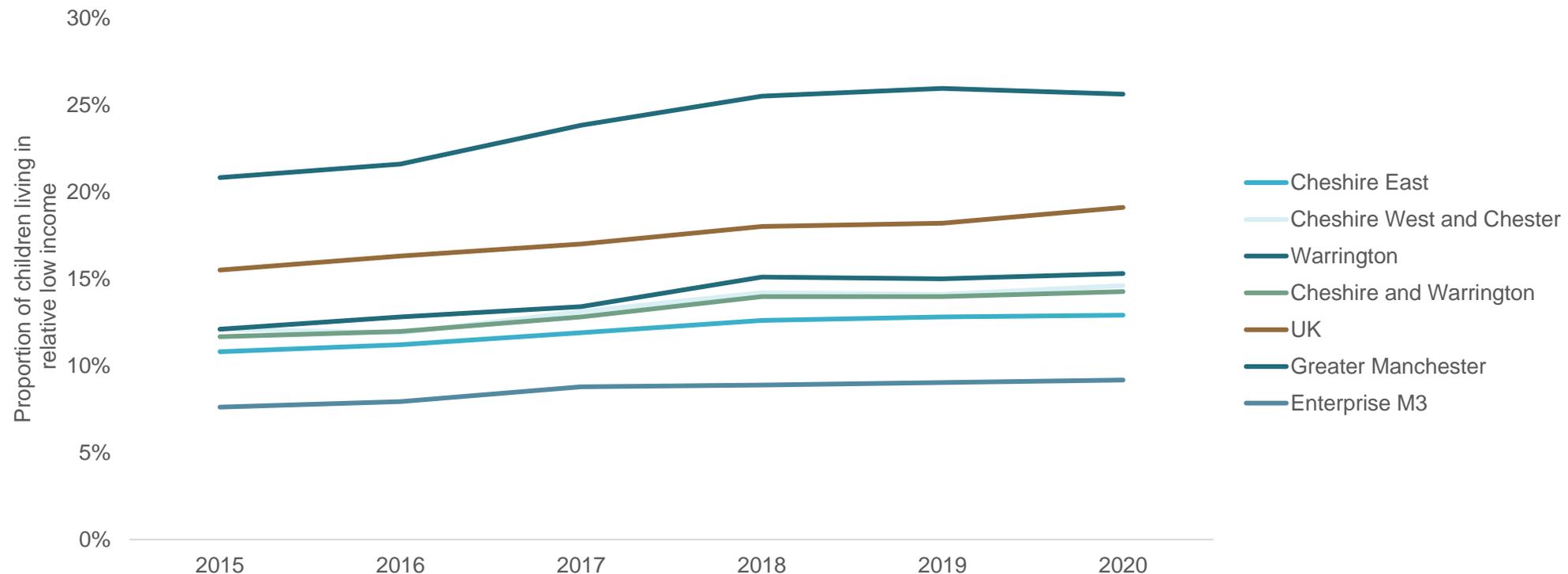
School readiness

The chart shows school readiness (the proportion of children achieving a good level of development at the end of Reception) over time in Cheshire and Warrington and comparators. This shows that overall Cheshire and Warrington performs above the averages for Greater Manchester, the North West and England.

Source: Public Health England (2012/13 – 2018/19)
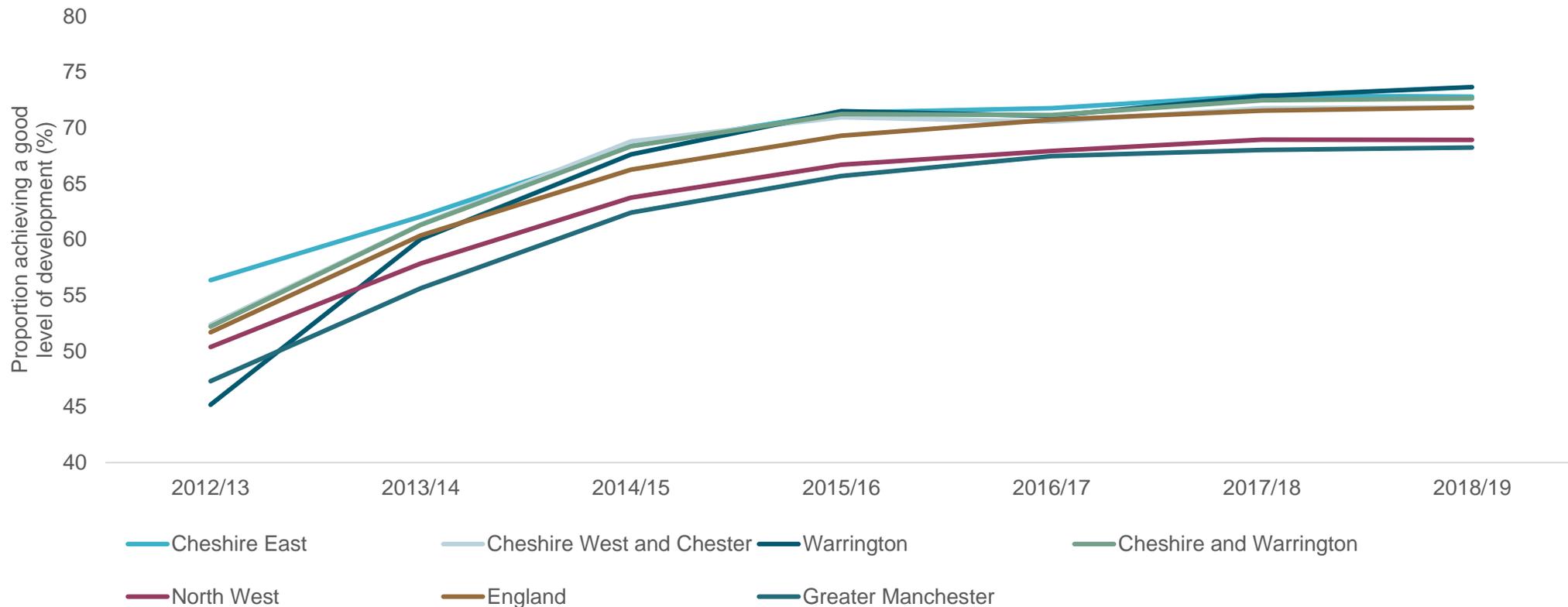
Major challenges facing the labour market

Local partners have been pulling together regular updates and analysis of the Labour Market, using jobs postings data and other sources to monitor the labour market as it evolves. The following slides set out some of the big issues facing the local labour market – which prevent it from creating opportunity for all and supporting people to benefit from higher productivity. These issues include:

1. **Information failures** – facing employers, skills providers, and those seeking training

2. **Impact of Covid and changes in the labour market** with increases in labour market inactivity, long Covid affecting productivity, and changes in working patterns

3. **Strong and increasing demand for Level 3+ skills** with technical skills in areas like finance and software development in high demand

4. **Skills vacancies and shortages causing a bottom-line business impact** with Cheshire a real outlier in terms of demand outpacing supply

5. **Gaps in attainment and progression rates of young people eligible for free school meals** – which are larger than at a regional and national level

6. **Where young people live affects their level of attainment and progression** – though patterns differ at different stages of development

7. **Gender employment gaps** – with some occupations only drawing on the skills of half the population

High school performance but with wide inequalities across income groups

Educational attainment in Cheshire and Warrington is high across every stage of school education. School readiness – defined as having reached a good level of development at the end of the Early Years Foundation Stage – has improved since 2013, increasing by 13 percentage points up to 73% in 2019, which is above the England average.
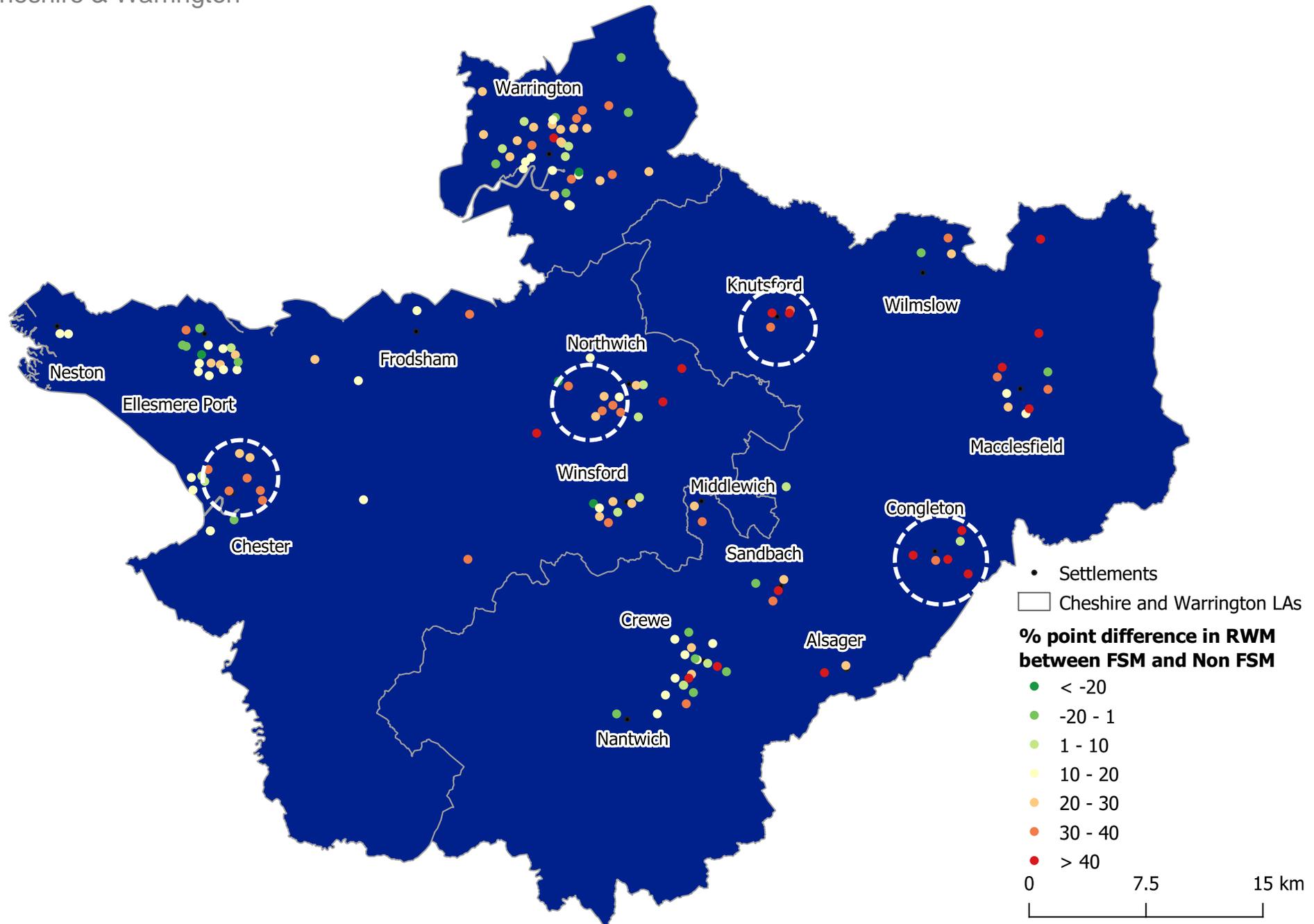
For Key Stage 2 (KS2) attainment, 67.7% of pupils have achieved the expected standard in reading and writing and maths (RWM) which is above the England average of 65%. Similarly, high performance is reflected in Key Stage 4 (KS4) attainment where around 48% of pupils have achieved grades 5 or above relative to the national and regional averages of 43% and 40%.

The quality of schools is higher than the rest of the UK, with 8.3% of schools rated 'requiring improvement' or 'inadequate', relative to Greater Manchester (14.2%) and the England average (13%).

Despite this, there are wide differences in educational outcomes between pupils from disadvantaged and non-disadvantaged backgrounds. There is a 27 percentage points gap for pupils achieving expected standard in KS2 between those eligible for Free School Meals (FSM) and other pupils, which is around 5 percentage points higher than the national average (2019 data). This trend persists throughout KS4, where Cheshire and Warrington has a higher performance gap in average attainment 8 score* at 17.4 percentage points relative to 13.8 percentage difference nationally.
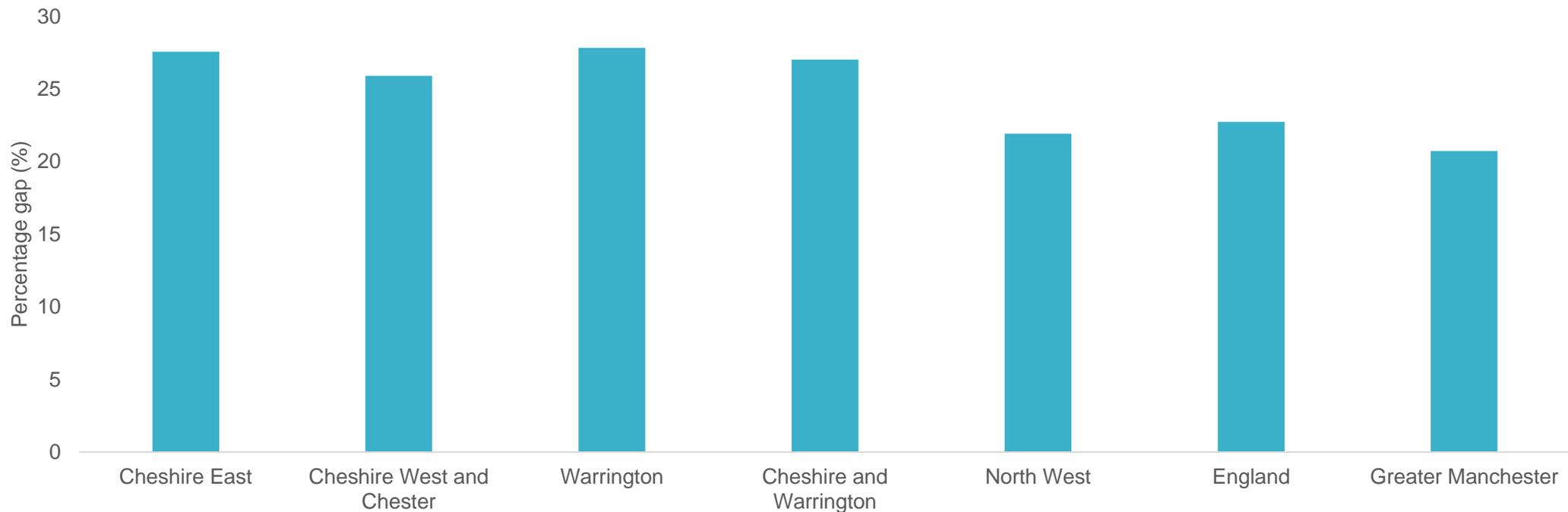
*(the average score obtained by a student for their best eight GCSE grades).

This analysis goes below the sub-regional or local authority level to understand what is happening at the individual school level. The map overleaf examines the differences in educational attainment between income groups across schools at KS2 in Cheshire and Warrington. It shows that in areas, such as Knutsford, Congleton, north of Chester, south Northwich and between Macclesfield and Wilmslow, have some of the biggest gaps of over 40%. In areas with higher deprivation, such as Ellesmere Port and Crewe, the opposite is observed, where pupils on FSM perform better than those on non-FSM. There is no trend between the size of school / number of disadvantaged pupils, and the percentage gap difference.

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Source: Department for Education (2018/19)

Metro——Dynamics

Warrington

Knutsford

Wilmslow

Northwich

Neston

Frodsham

Ellesmere Port

Winsford

Macclesfield

Middlewich

Chester

Sandbach

Congleton

Crewe

Alsager

Nantwich

Settlements

Cheshire and Warrington LAs

% point difference in RWM between FSM and Non FSM

● < -20
● -20 - 1
● 1 - 10
● 10 - 20
● 20 - 30
● 30 - 40
● > 40

0   7.5   15 km

57

Source: Department for Education (2018/19)
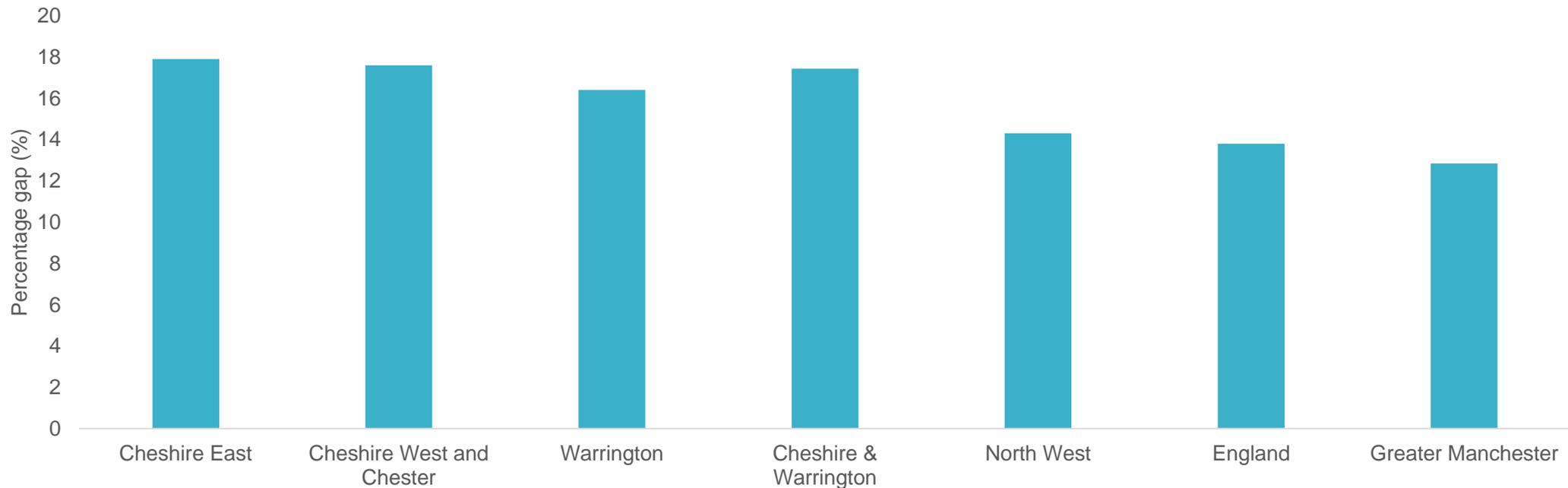
Metro —— Dynamics

Key Stage 2 achievement gap

The chart below shows the Key Stage 2 achievement gap between pupils on Free School Meals and other pupils for the 2018/19 academic year. This looks at the proportion of pupils reaching the expected standard in Reading, Writing and Maths. This shows that there is a higher gap in Cheshire and Warrington.

Source: Metro Dynamics analysis of Department of Education data (2018/19). Data not available for EM3.

Metro —— Dynamics

Key Stage 4 achievement gap

The chart below shows the Key Stage 4 achievement gap between pupils on Free School Meals and other pupils for the 2018/19 academic year. This looks at the average attainment 8 score (the average score obtained by a student for their best eight GCSE grades). Similarly to Key Stage 2, Cheshire and Warrington has a higher gap between these cohorts of pupils.

Source: Metro Dynamics analysis of Department of Education data (2018/19). Data not available for EM3.

There is an educational attainment gap between disadvantaged and non disadvantaged young people through to KS4.

By age of 11 there is already an attainment gap between FSM and non-FSM pupils.

This attainment gap carries through to attainment at KS4, where the gap has been higher in all three local authorities than in England in every year for the past three and widened in all three in 2020/21.

This may help to explain, in part, the level 2 and 3 attainment gaps at age 19. The gap in attainment of level 3 for FSM/non FSM pupils has been around 25% between 2004 and 2020, with all three local authorities having a consistently higher gap than England.

In 2020, where examinations were disrupted by the pandemic, the gap increased in Cheshire East and Warrington and narrowed in Cheshire West and Chester.

Level 3 attainment gap at 19 between FSM and non-FSM, C&W LAs and England 2005-2020
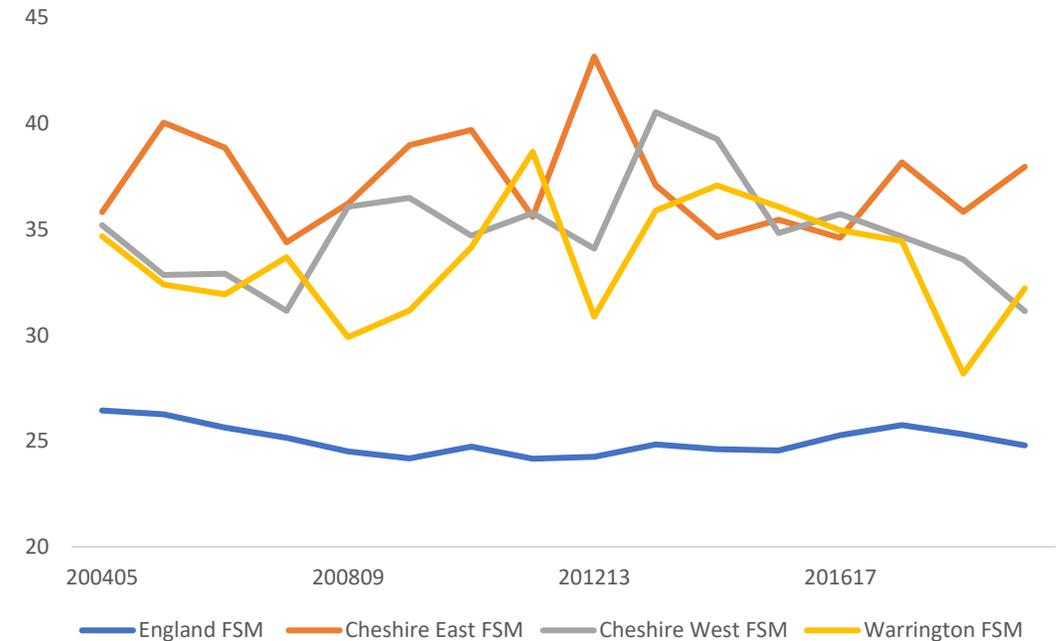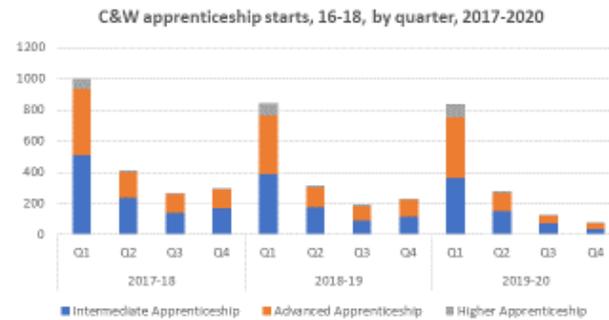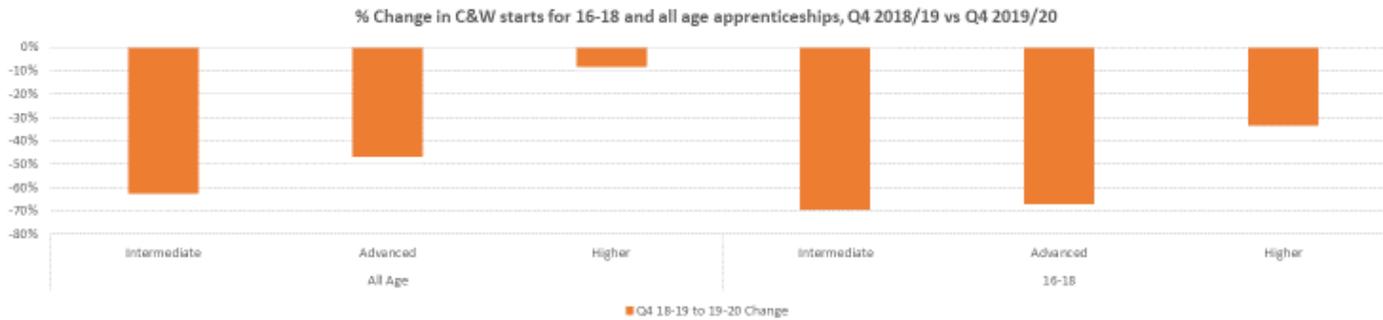
Where young people live, impacts their level of skills attainment and progression

- The highest levels of income deprivation affecting children index occur in Ellesmere Port, areas to the northwest of Chester, parts of Warrington, parts of Winsford and areas of Crewe. Many of these areas are adjacent to areas of employment opportunity but continue to experience high levels of worklessness.

- Indicators used in the IMD's children and young people education sub domain include: *Key Stage 2 attainment; Key Stage 4 attainment; Secondary school absence; Staying on in education post 16; and entry to higher education.* The areas that perform worst on this measure are typically, clustered in the areas of high income deprivation affecting children with additional clusters in Nantwich and Macclesfield.

- There are 6 parliamentary constituencies in Cheshire and Warrington, where in 4 of the constituencies, 100% of students are taught in schools that are either outstanding or good Ofsted rating – Congleton, Eddisbury, Tatton and Warrington North. By contrast only 35.6% of secondary school places in Ellesmere Port and Neston are with good or outstanding providers.

Source: Cheshire and Warrington Skills Report

Overall apprenticeship achievement rate is lower than the England average

C&W all age apprenticeships saw a year on year fall of 45% in Q4 of 2019/20, driven by a Q4 drop of 68% in 16-18 apprenticeships and a Q4 drop of 63% in intermediate apprenticeships

% Change in C&W starts for 16-18 and all age apprenticeships, Q4 2018/19 vs Q4 2019/20

C&W apprenticeship starts, all age, by quarter 2017-2020

C&W apprenticeship starts, 16-18, by quarter, 2017-2020

Source: DfE

The apprenticeship achievement rate for residents of Cheshire and Warrington aged 16-18 in all providers in 2018/19 was 65.3% which was 2.9% lower than the rate for England. However, the 16-18 FE achievement rate for all types of provider at all levels in Cheshire and Warrington was higher than the national average (82.6%) at 85.6%.

All age apprenticeships saw a year on year fall of 45% in Q4 of 2019/20, which was driven by a Q4 drop of 68% in 16-18 apprenticeships and a Q4 drop of 63% in intermediate apprenticeships.

Source: Sustainable and Inclusive Growth Commission

Significant gender disparities in learning delivery

There were significant gender disparities in FE and apprenticeships by learners aged 16-18 in the subjects taken by 2018/19.

58% of A levels in FE were started by females, with this proportion rising in arts, media (67%) and languages/literature/culture (78%).
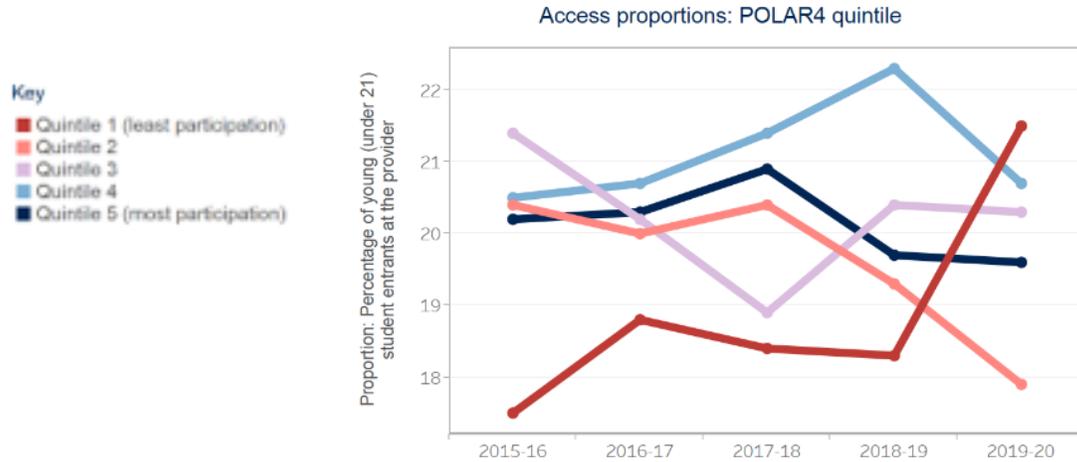
Yet some subjects are male dominated, where 92% of A levels in engineering/manufacturing technologies and 85% in information and communication were started by males.

There are highly gendered occupational areas in adult apprenticeships. Only 14% of adult apprenticeships in health, public services and care were started by males. Only 11% of apprenticeships in engineering and manufacturing technologies were started by Females.

In previous years, there has been an uneven distribution in skills funding across gender, where only 24% of European Structural Fund starts were by females.

*Source: Cheshire and Warrington Skills Report*

Entry into local HE for lower participant areas has improved but an achievement gap remains

% of young student entrants by POLAR4 quantile at University of Chester

Access proportions: POLAR4 quintile

Key
- Quintile 1 (least participation)
- Quintile 2
- Quintile 3
- Quintile 4
- Quintile 5 (most participation)

% of young student entrants that achieve a first or upper second class degree

Attainment rates: POLAR4 quintile

At entrance level, the University of Chester takes an increasingly significant proportion of students from POLAR4 quintile 1. This percentage has steadily increased since 2015-16.
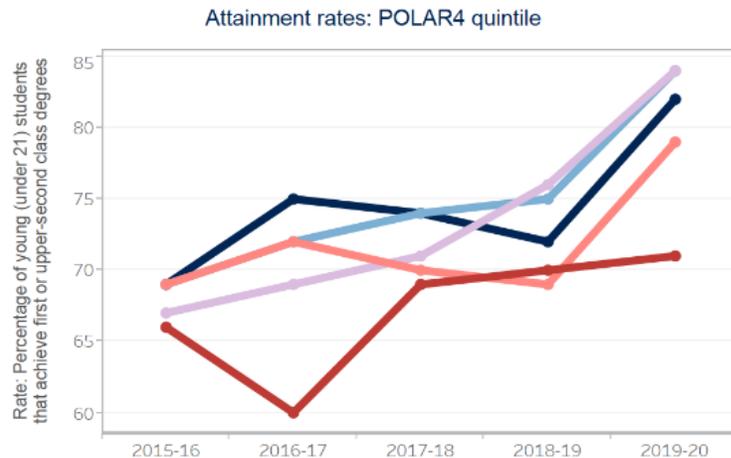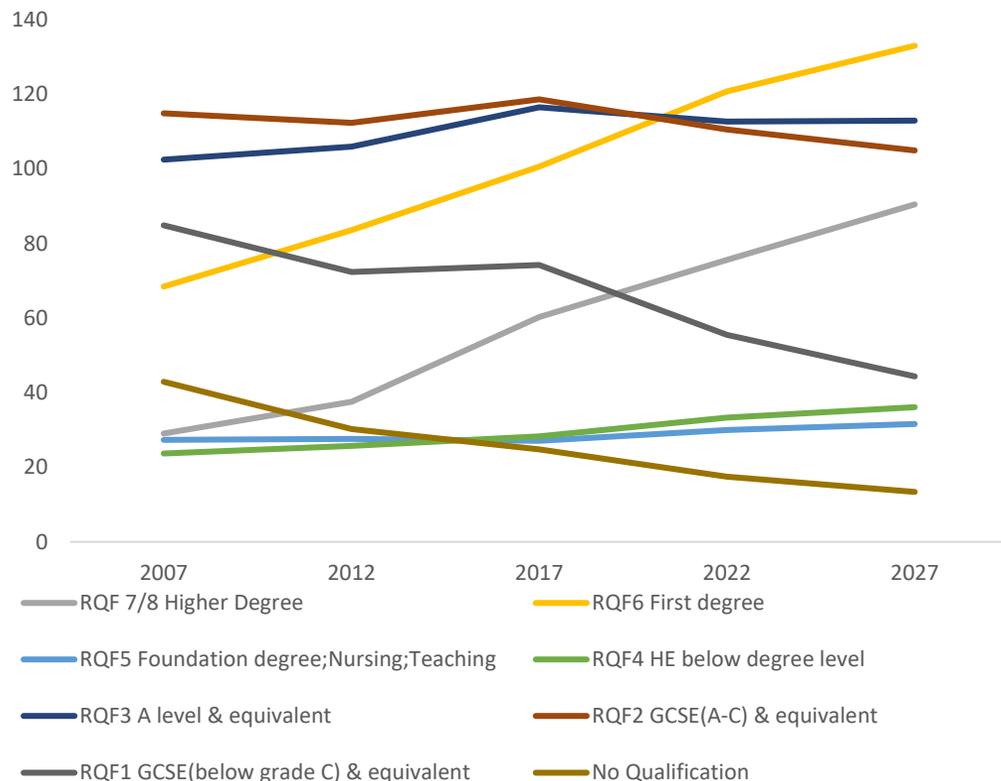
However in 2019/20, there was a significant gap in the proportion of those students from quintile 1 who attained a first class or higher second class degree (71%) and the attainment of those students from quintile 5 (82%).

There was a similar gap between the highest and lowest quintiles in rates of progression into highly skilled employment or further higher education study (Quintile 1, 61% compared to Quantile 5, 70%).

* Quintile 1 represents the bottom 20% of postcodes where the fewest young people participate in higher education.

Source: Sustainable and Inclusive Growth Commission

Skills demand is changing, and set to continue to change

C&W Actual and Forecast Demand for Skill Levels 2007-2027

Legend:
- RQF 7/8 Higher Degree
- RQF6 First degree
- RQF5 Foundation degree;Nursing;Teaching
- RQF4 HE below degree level
- RQF3 A level & equivalent
- RQF2 GCSE(A-C) & equivalent
- RQF1 GCSE(below grade C) & equivalent
- No Qualification

Source: Working Futures (2017-27), Digital Skills in Cheshire and Warrington

Previous analysis exploring how demand for skill levels would change found that Corporate managers and directors and other managers and proprietors and caring personal service occupations will all have replacement demand in excess of 35% between 2017 and 2027.
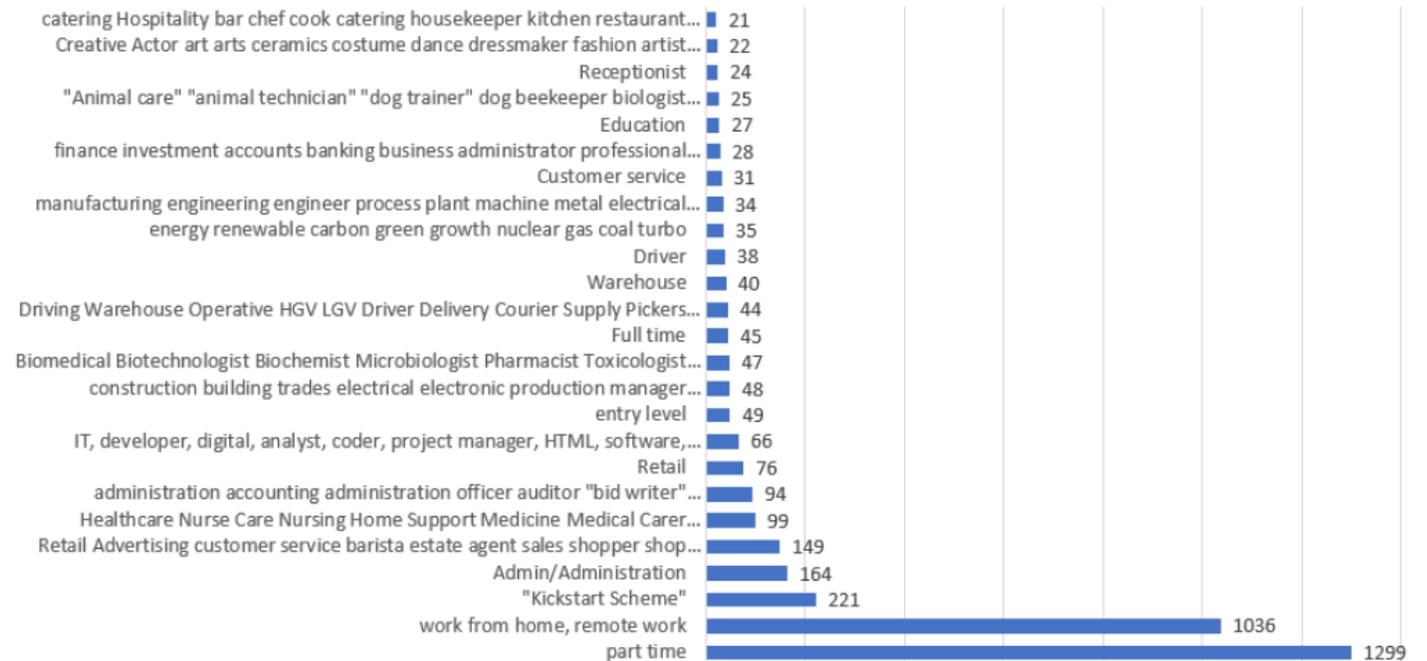
Replacement demand will drive demand of higher skill levels (in particular Level 3+) with forecasted stock increase of 71,000 in between 2017-27. (However, it should be noted that this data is now five years out of date, so its conclusions need to be treated with a degree of caution.)

Digital skills are also a major growth area, where employers pay a significant premium. Demand for skills such as CRM and computer networking and support have increased, and technologies employers are most looking for include Microsoft (Office and Excel) and SQL. However, almost all jobs in digital industries are concentrated in a few key places, including Chester City Centre, Wilmslow, and business parks (including Chester Business Park, Crewe Industrial Estate, and various business parks in Warrington south of the M62 between junctions 8 and 11. Concerningly, levels of enrolment for training in digital skills at L2 and L3 are much lower for females than males.

While the demand for jobs has also shifted post-pandemic

- The demands being made by workers for work will shape the roles employers offer – particularly at a time of such a strong jobs market. Findings from the Cheshire and Warrington Opportunities Portal show that the main two search terms are remote work or work from home, and part-time. Employers are likely to respond to this demand by allowing home working in contracts which may "bake-in" a more spatially dispersed working pattern.

- The other main groups of occupations that those using the portal tended to search for included retail, administration, healthcare, and IT.

Top 25 Searches on the Cheshire and Warrington Opportunities Portal 1st September 2021 to 31st August 2022

Search term	Count
catering Hospitality bar chef cook catering housekeeper kitchen restaurant...	21
Creative Actor art arts ceramics costume dance dressmaker fashion artist...	22
Receptionist	24
"Animal care" "animal technician" "dog trainer" dog beekeeper biologist...	25
Education	27
finance investment accounts banking business administrator professional...	28
Customer service	31
manufacturing engineering engineer process plant machine metal electrical...	34
energy renewable carbon green growth nuclear gas coal turbo	35
Driver	38
Warehouse	40
Driving Warehouse Operative HGV LGV Driver Delivery Courier Supply Pickers...	44
Full time	45
Biomedical Biotechnologist Biochemist Microbiologist Pharmacist Toxicologist...	47
construction building trades electrical electronic production manager...	48
entry level	49
IT, developer, digital, analyst, coder, project manager, HTML, software,...	66
Retail	76
administration accounting administration officer auditor "bid writer"...	94
Healthcare Nurse Care Nursing Home Support Medicine Medical Carer...	99
Retail Advertising customer service barista estate agent sales shopper shop...	149
Admin/Administration	164
"Kickstart Scheme"	221
work from home, remote work	1036
part time	1299

Skills shortage vacancies are more prevalent than in England, constraining economic activity

Employers in Cheshire and Warrington are more likely than the English average to have at least one vacancy (19% vs 17%), and 38% of employers had a hard to fill vacancy because of a skills shortage relative to England average of 32%.

The proportion of vacancies that were attributable to skills shortages were much higher in high skill roles (46% vs 26%), and a higher proportion found it difficult to obtain specialist skills or knowledge required to perform the role.

Analysis of EMSI burning glass job postings found that key specialist skills sought by explorers include customer service and teamwork, and baseline skills of communication and organisational.

On the basis that occupations with high job posting intensity should be a priority for intervention, the primary occupation areas include nurses, care workers, programmers, and accountants.

Occupation	Unique Postings from Apr 2021 - May 2022	Median Annual Wages
Nurses	6,319	£30,828
Care Workers and Home Carers	6,249	£16,224
Sales Related Occupations n.e.c.	5,477	£22,004
Other Administrative Occupations n.e.c.	4,563	£18,220
Customer Service Occupations n.e.c.	4,464	£19,122
Programmers and Software Development Professionals	3,972	£42,865
Book-keepers, Payroll Managers and Wages Clerks	3,186	£22,408
Human Resources and Industrial Relations Officers	2,772	£27,529
Elementary Storage Occupations	2,748	£21,940
Kitchen and Catering Assistants	2,405	£9,350
Chartered and Certified Accountants	2,398	£39,558
Managers and Proprietors in Other Services n.e.c.	2,289	£20,686
Chefs	2,270	£17,865
Teaching Assistants	2,267	£14,478
Marketing and Sales Directors	2,083	£70,919

UK median wage

Source: Cheshire and Warrington Skills Report; Emsi

Metro —— Dynamics

Universal Credit claimants

The chart below shows the proportion of Universal Credit claimants over time in Cheshire and Warrington and comparators. The table shows a snapshot for January 2022. Overall Cheshire and Warrington performs below the regional and national averages.

	Claimant Count Jan 2022	
Area	Count	% of WAP
Cheshire East	6,345	2.8
Cheshire West and Chester	6,540	3.2
Warrington	4,335	3.3
Cheshire and Warrington	17,225	3
North West	219,420	4.8
United Kingdom	1,777,485	4.2
Enterprise M3	22,895	2.4
Greater Manchester	99,955	5.5

68

Source: Labour Force Survey (Jan 2019 – Jan 2022)

Less severe rise in UC claims resulting from the pandemic but with spatial variation

Change in universal credit claims (January 2020 = 100)

— Cheshire East   — Cheshire West and Chester   — Warrington   — Great Britain

- Towns
- No data

Total universal credit claims % change (March 2020 - April 2022)

- -33% - 0%
- 0 - 50%
- 50 - 100%
- 100 - 150%
- 150 - 250%
- > 250%
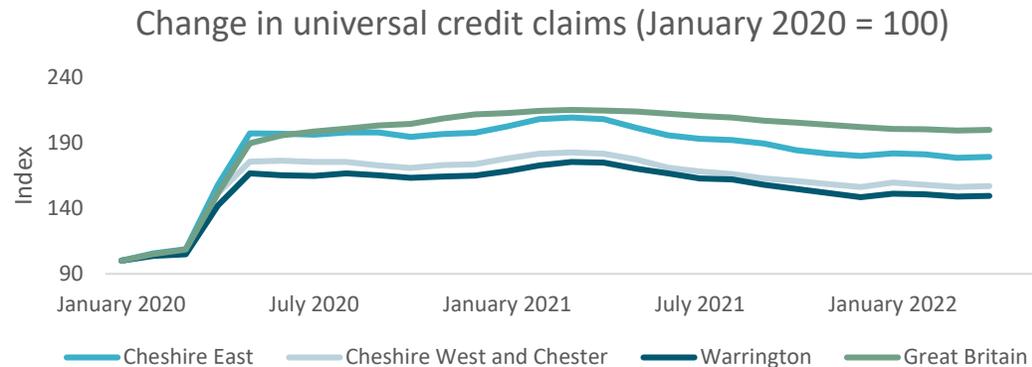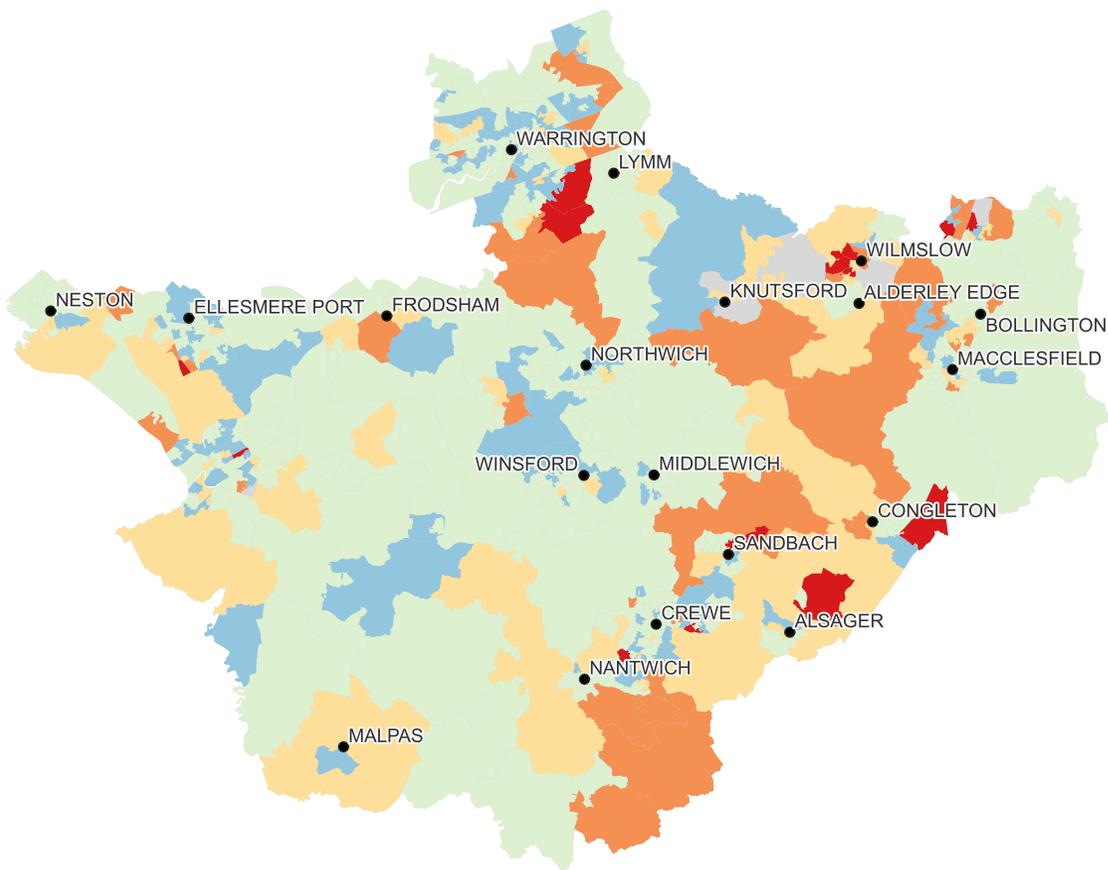
The map and chart shows the change in universal credit claims over the pandemic in Cheshire and Warrington. Generally, C&W authorities have experienced a smaller increase in universal claims and have made a faster recovery from the pandemic relative to the national average. Cheshire East had a similar spike up in claims following the start of the pandemic, but has made a faster recovery.

Spatially, urban areas typically have seen a larger increase in claims from the start of the pandemic, relative to rural areas. A corridor on the east side of Cheshire and Warrington has observed particularly steep increases in claims, where parts of Wilmslow, Alsager, Congleton and Crewe have seen claims increase by over 250%.

Source: ONS DWP (2022)

Sources: ONS DWP

Metro ——— Dynamics

Youth unemployment

The chart below shows youth unemployment (aged 16-24) over time in Cheshire and Warrington and comparators. There is high variability in youth unemployment across all areas. Cheshire and Warrington has historically lower levels of youth unemployment than the regional and national average.

Source: Labour Force Survey (Apr 2005 – Mar 2021)

Metro —— Dynamics
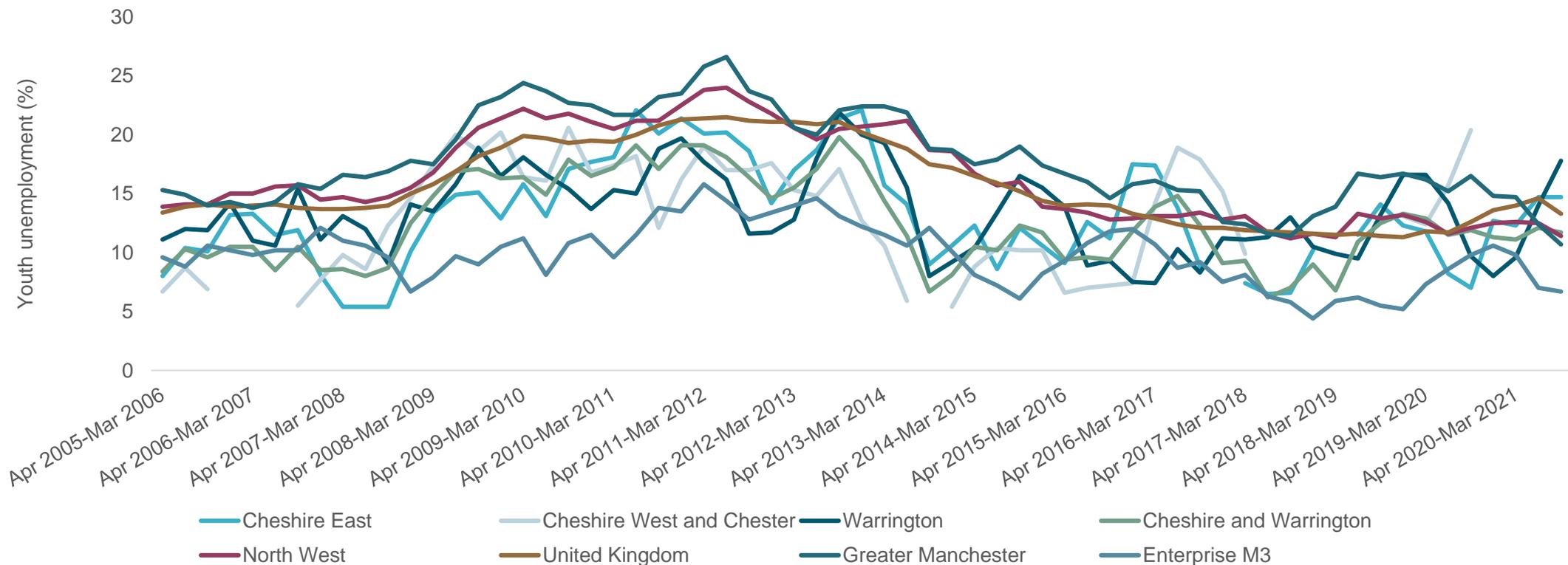
Growing levels of economic inactivity due to early retirement and poor health

The chart to the right shows the rate of economic inactivity between 2009 and 2021 (the most recent year available) for Cheshire and Warrington, its local authorities and comparators. As of 2021, the economic inactivity rate in the sub-region was 22.2%, of the working age population which is above the England average of 21.3% but below the regional average of 23.5%. Cheshire East has the highest levels of economic inactivity of all comparators at 25.6% in 2020.

The rate fluctuated in Cheshire and Warrington between 2009 and 2017, then fell to a low of 17.8% in 2020, before increasing following the start of the Covid-19 pandemic. All comparators experienced an increase in the rate of economic inactivity in 2020.

The table on the following page illustrates the reasons for economic inactivity in Cheshire and Warrington. This shows that the most common reason for economic inactivity is early retirement, which increased from 22.3% in 2016 to 26.9% in 2021, compared to the national average of 13.7%. This is as high as 28.0% in Cheshire East and 30.8% in Cheshire West and Chester.

Another common reason in the sub-region is long-term sickness at 24.2%, which is slightly higher than the national average (23.7%), but below the North West level (27.5%). Warrington has the highest levels in the sub-region (32.2%). This has increased in Cheshire and Warrington as a whole from 20.0% in 2016, but in Warrington there has been a large increase from 21.0% in 2016. This is potentially due to the impact of the pandemic on overall health and long-Covid-19.

Another common reason is being a student, which has risen in the sub-region from 22.0% in 2016 to 24.3% in 2021.

Source: ONS Labour Force Survey (2009-21)

Metro —— Dynamics
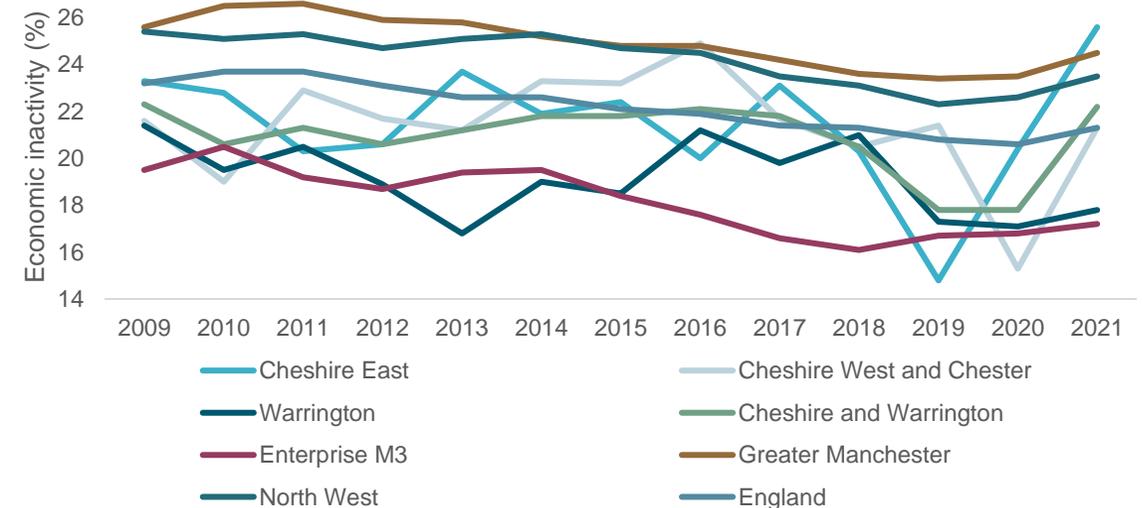
# Reasons for economic inactivity

The table below shows the reasons for economic inactivity for Cheshire and Warrington, its local authorities and comparators. In Cheshire and Warrington the most common reasons for economic inactivity are retirement and long-term sickness, both of which have increased in recent years.

Reason for economic inactivity	Cheshire East	Cheshire West & Chester	Warrington	Cheshire & Warrington	EM3	Greater Manchester	North West	England
Student (2016)	20.3%	24.9%	19.6%	22.0%	21.9%	27.0%	25.1%	26.5%
Student (2021)	28.7%	16.8%	27.2%	24.3%	29.3%	27.3%	25.2%	28.4%
Looking after family/home (2016)	22.8%	21.1%	24.6%	22.6%	29.0%	23.5%	22.5%	25.5%
Looking after family/home (2021)	14.3%	16.8%	13.6%	15.0%	21.6%	20.9%	19.0%	19.7%
Temporary sick (2016)	3.0%		1.6%	1.8%	1.7%	2.9%	2.4%	1.9%
Temporary sick (2021)				1.0%	1.5%	2.9%	2.6%	2.0%
Long-term sick (2016)	19.9%	19.4%	21.0%	20.0%	17.6%	26.4%	26.5%	21.5%
Long-term sick (2021)	21.1%	24%	32.2%	24.2%	18.1%	26.1%	27.5%	23.7%
Discouraged (2016)						0.3%	0.5%	0.3%
Discouraged (2021)						0.2%	0.4%	0.5%
Retired (2016)	19.6%	24.8%	22.1%	22.3%	14.5%	9.7%	13.7%	13.1%
Retired (2021)	28%	30.8%	16.9%	26.9%	15.5%	9.9%	14.5%	13.7%
Other (2016)	14.4%	8.8%	10.5%	11.2%	15.1%	10.1%	9.4%	11.1%
Other (2021)	7.9%	9.1%	6.8%	8.1%	13.5%	12.7%	10.6%	12.2%

Source: Labour Force Survey (2016-21). Note, grey indicates no data available.

Metro —— Dynamics

Monthly employment figures

The chart shows monthly employee figures over the pandemic period for Cheshire and Warrington, Greater Manchester and the UK. Cheshire and Warrington experienced less of a contraction in employment following the pandemic relative to the national average, however has been marginally slower to recover.
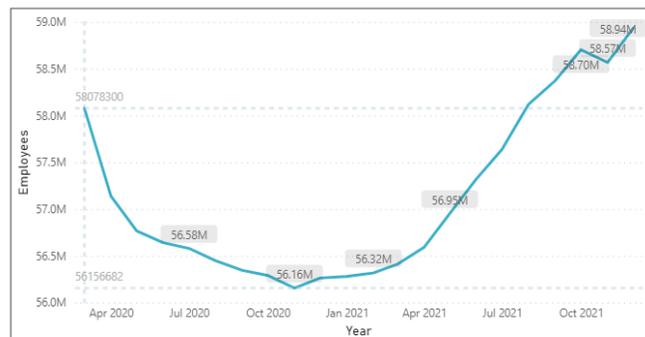
Cheshire and Warrington
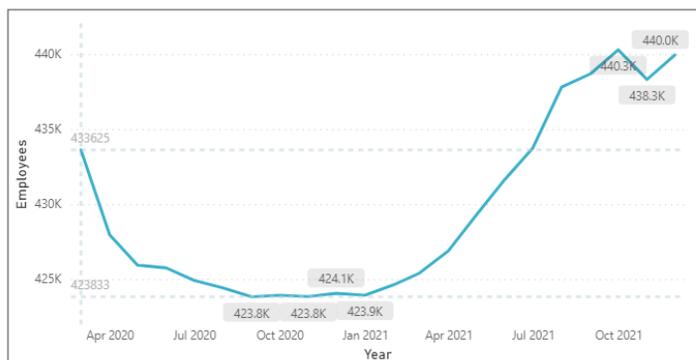
Greater Manchester
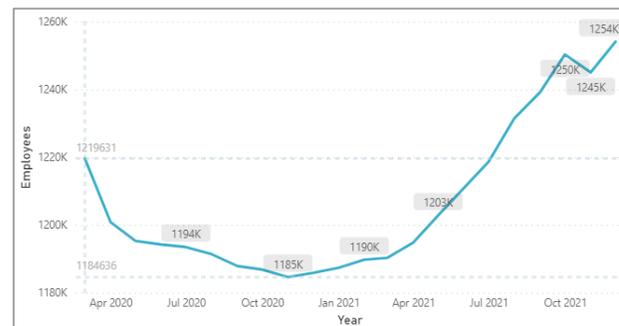
United Kingdom

Covid-19 continues to have adverse impacts on the labour market

The labour market presents a mixed picture emerging out of the pandemic.

Positively..

In October 2021, the volume of UC claimants seeking work for a year or less in Cheshire and Warrington was lower (5,660) compared with February 2020 (8,606).

Even at the height of the pandemic, there were 11 wards that had experienced jobs growth of more than 500, highlighting the economic resilience of particular areas in Cheshire and Warrington.

However..

More widely, there were still signs that the Cheshire and Warrington's labour market was yet to make a full recovery by autumn 2021, with a 55% higher number of UK claimants seeking work relative to pre pandemic levels, and an employment rate that was 3% lower than pre pandemic levels.

Source: Cheshire and Warrington Skills Report

Metro —— Dynamics

Full time/part time wages

The table below shows median hourly wages for full time workers and part time workers in Cheshire and Warrington and comparators in 2021. Cheshire and Warrington has a higher differential than Greater Manchester, and the regional and national level.

Area	Median Hourly Wages		
	Full Time Workers	Part Time Workers	Difference
Cheshire East	£16.2	£10.4	£5.8
Cheshire West and Chester	£15.9	£10.3	£5.6
Warrington	£16.0	£11.4	£4.6
Cheshire and Warrington	£16.0	£10.5	£5.5
North West	£14.8	£10.1	£4.7
United Kingdom	£15.7	£10.6	£5.0
Greater Manchester	£14.4	£10.0	£4.4
Enterprise M3	£18.7	£11.9	£6.8

Source: Annual Survey of Hours and Earnings; Resident Analysis (2021)

Earnings vary across the sub-region
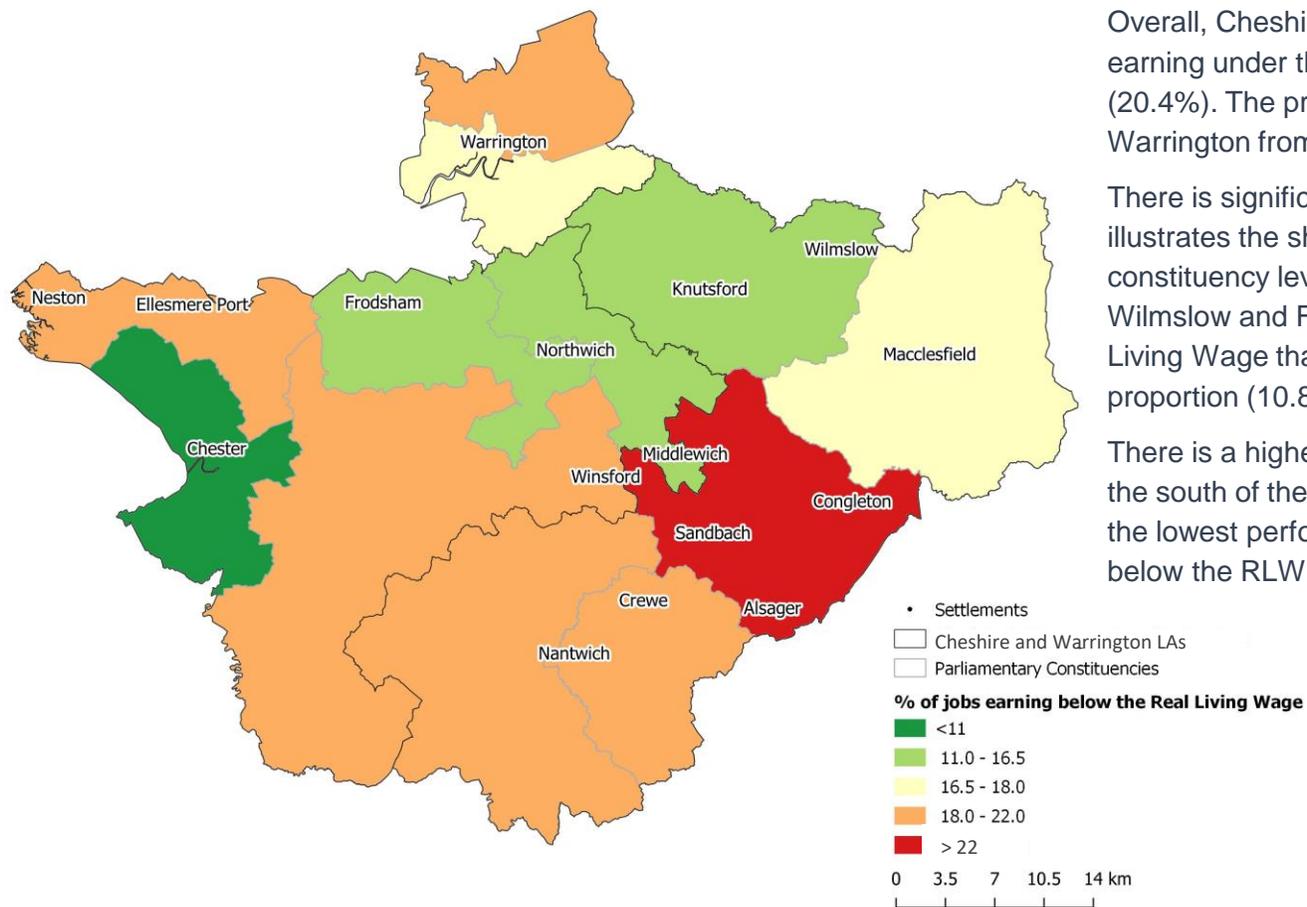
Overall, Cheshire and Warrington has high wages with a lower proportion of jobs earning under the Real Living Wage in 2020 (RLW) (18.6%) than the UK average (20.4%). The proportion of jobs under the RLW has fallen in Cheshire and Warrington from 22.5% in 2017.

There is significant spatial variation, as shown by the map to the left, which illustrates the shared of jobs earning below the Real Living Wage at the constituency level, which is the most local data available. The area between Wilmslow and Frodsham has a lower proportion of jobs earning below the Real Living Wage than the sub-regional average (11-16.5%). Chester has the lowest proportion (10.8%).

There is a higher proportion of jobs earning under the RLW relative to the UK in the south of the sub-region, Ellesmere Port and north Warrington. Congleton is the lowest performing with almost triple the proportion of jobs (30.4%) that are below the RLW relative to Chester.

There is a differential in earnings between those who work and live in the sub-region. Annual earnings are slightly higher for those that live in Cheshire and Warrington (£32,345 vs £30,937). This could reflect commuting patterns and the quality of jobs in the area.

Across job structures, earnings performance also varies. There is a £5.53 gap in median hourly wages between full time and part time workers in Cheshire and Warrington, which is higher than both the regional (£4.66) and national (£5.01) averages.

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Source: ONS Annual Survey of Hours and Earnings (ASHE) - Estimates of the number and proportion of employee jobs with hourly pay below the living wage, by work geography, local authority and parliamentary constituency, UK (2020)

Metro ——— Dynamics

Food insecurity

The map on the left shows the proportion of households that are food insecure in the UK by region. The North West has the highest levels of household food insecurity. The map on the right shows the proportion of adults who have reported hunger due to a lack of food. The darker areas show where this is higher. In Cheshire and Warrington, levels of hunger are lower than in neighbouring areas.

% of households
that are food insecure

- 5-7
- 8-9
- 10-11

% adults experiencing hunger because
they did not have enough to eat, Jan 2021

Hungry

Show All

- > 5.6 – 13.7
- > 4.1 – 5.6
- > 3.3 – 4.1
- > 2.46 – 3.3
- 0 – 2.46

Source: DEFRA (2021) United Kingdom Food Security Report

Source: University of Sheffield (2021) Mapping food insecurity in the UK

Metro ——— Dynamics
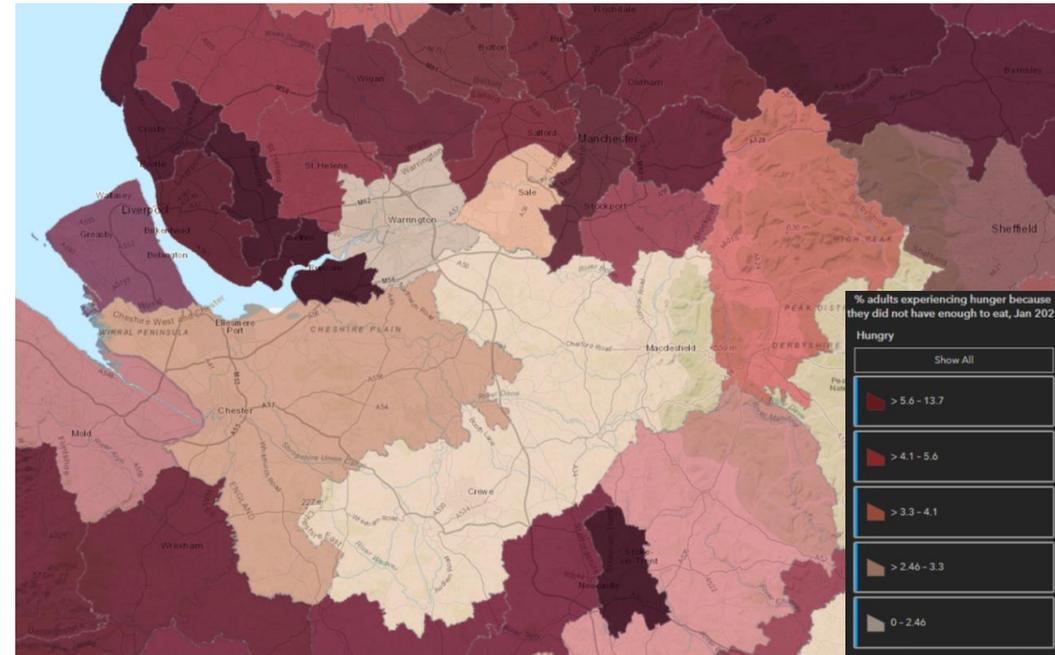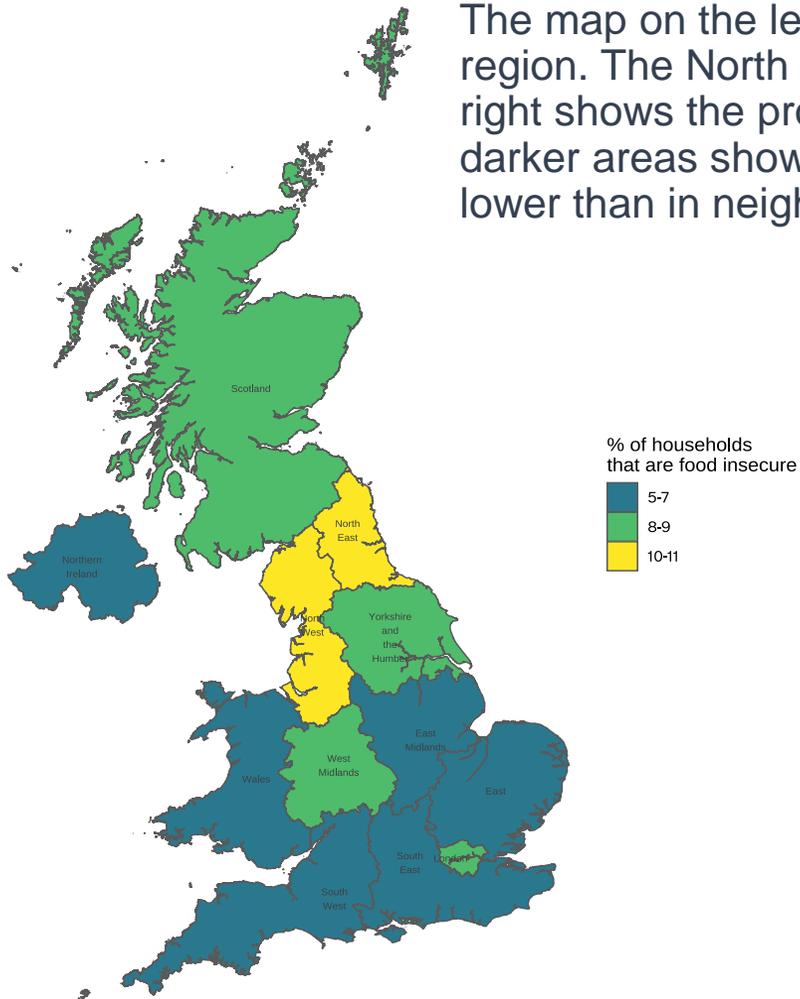
Digital inclusion

The map below shows the digital exclusion risk index across Cheshire and Warrington, where 10 represents high risk of exclusion and 0 low risk. There are areas of higher risk in some urban areas, such as Chester and Warrington, but predominantly in rural areas.

DERI score

0.00 — 10.00

Source: Greater Manchester NHS (2022)
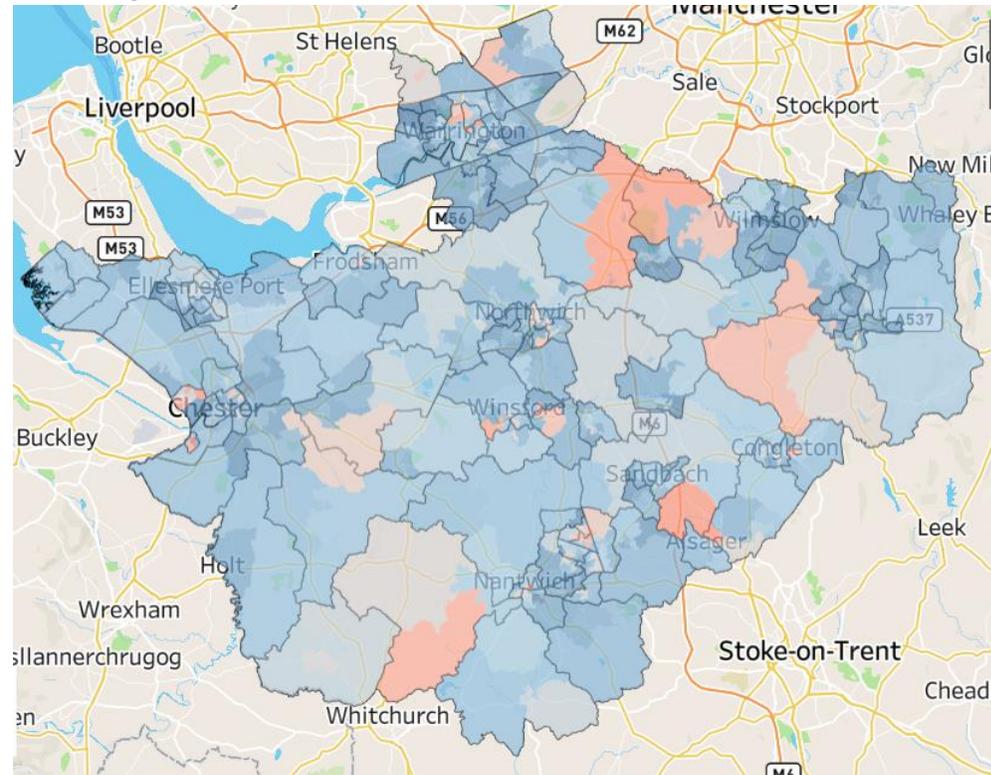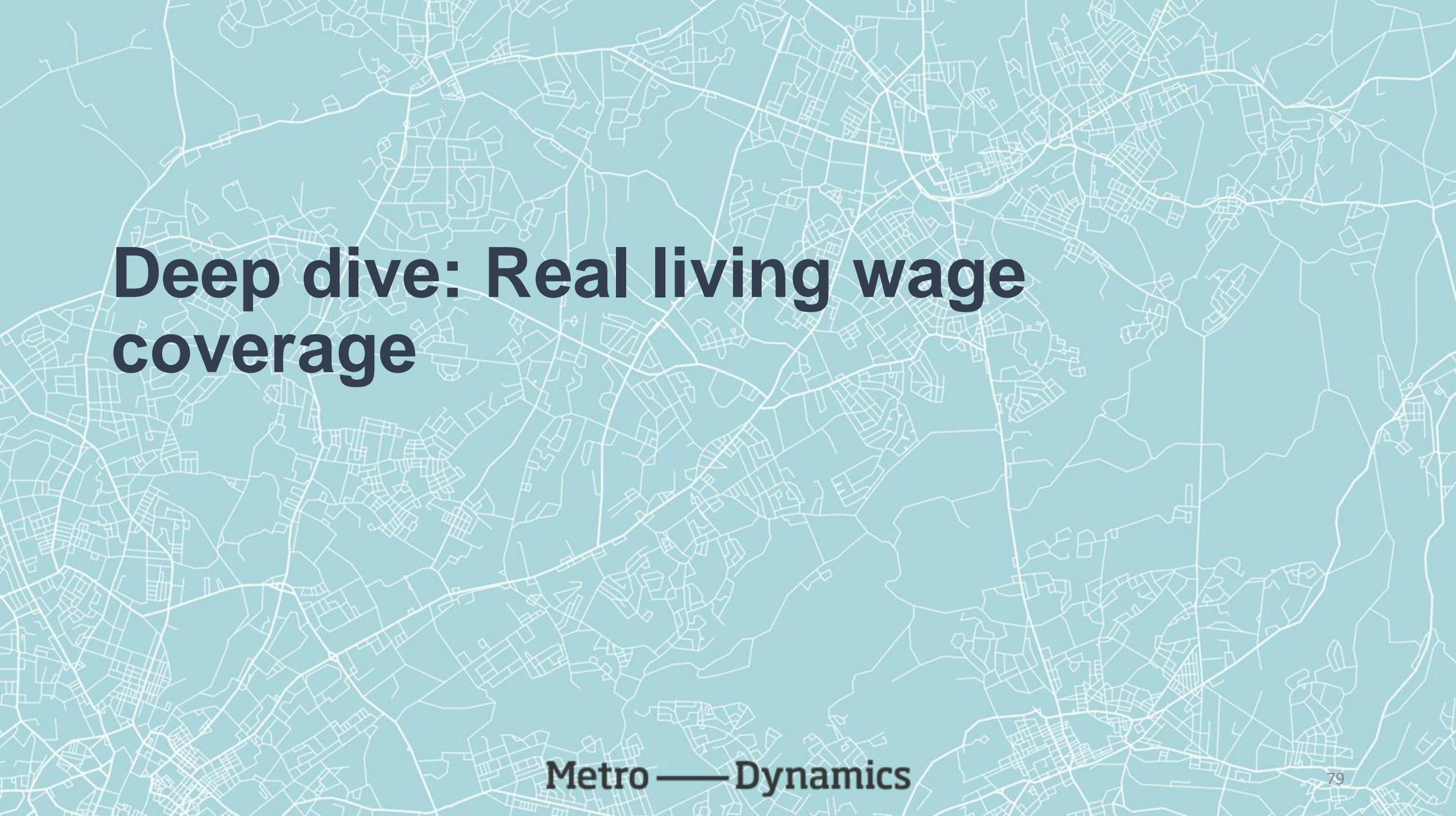
Deep dive: Real living wage coverage

Metro —— Dynamics

Summary

In the first stage of the work, a finding which emerged was the fall in the proportion of jobs paying below the real living wage (see table on the right).

Looking at detailed data on the number of people employed in different occupations, along with the earning of these occupations in the North West suggests that, while low incomes have been rising at a faster rate, this fall in the proportion of jobs paying below the real living wage is due to the number of low paid jobs declining at a faster rate than overall jobs.

Finally, we consider the future direction of the real living wage at a time of high inflation and a simplified modelling of the approach used to calculate the indicator suggests the rise set to be announced in September will be the highest in % terms since the introduction of the real living wage in 2011/12.

Proportion of jobs earning below the Real Living Wage between 2017 and 2021

	Cheshire East	Cheshire West and Chester	Warrington	Cheshire and Warrington	UK
2017	22.9	23.5	20.6	22.5	22.2
2018	20.5	22.0	20	20.9	22.9
2019	18.8	19.8	21.9	20.0	20
2020	21.9	14.6	18.8	18.6	20.3
2021	17.3	14.5	18.2	16.6	17.1

Source: Annual Survey of Hours and Earnings

Metro ——— Dynamics

Jobs earning below the Real Living Wage across the sub-region

This map shows the proportion of jobs earning under the Real Living Wage across Cheshire and Warrington, at the constituency level. There is variation across the sub-region – Congleton is the lowest performing with almost triple the proportion of jobs that are below the RLW relative to Chester (30.4%).

- Settlements
- ☐ Cheshire and Warrington LAs
- ☐ Parliamentary Constituencies

% of jobs earning below the Real Living Wage
- <11
- 11.0 - 16.5
- 16.5 - 18.0
- 18.0 - 22.0
- > 22

0   3.5   7   10.5   14 km

Source: ONS Annual Survey of Hours and Earnings (ASHE) - Estimates of the number and proportion of employee jobs with hourly pay below the living wage, by work geography, local authority and parliamentary constituency, UK (2020)

What is driving the increase in real living wage coverage?

The proportion of jobs in Cheshire and Warrington earning below the Real Living Wage (RLW) has declined, falling from 22.3% in 2017 to 16.7% in 2021. The UK saw a similar drop over this period, though Cheshire and Warrington has reduced the proportion in a more consistent way

The Real Living Wage is calculated annually using a Minimum Income Standard (MIS) approach to establish the wage required to meet the costs of living. The MIS approach builds budgets for different household types based on public consultation. Researchers work with people to understand what is required to reach a minimum standard of living and then establish the cost of this basket.

The RLW is based on MIS baskets (updated every two years) and price data for the UK and for London is collected in April to set the RLW for the following year.

We can use bespoke data on occupations to examine changes in the make up of employment in Cheshire and Warrington between 2018 and 2021 to understand how changes in the labour market may explain this

RLW coverage, 2017-2021

Source: Annual Survey of Hours and Earnings, Annual Population Survey

82
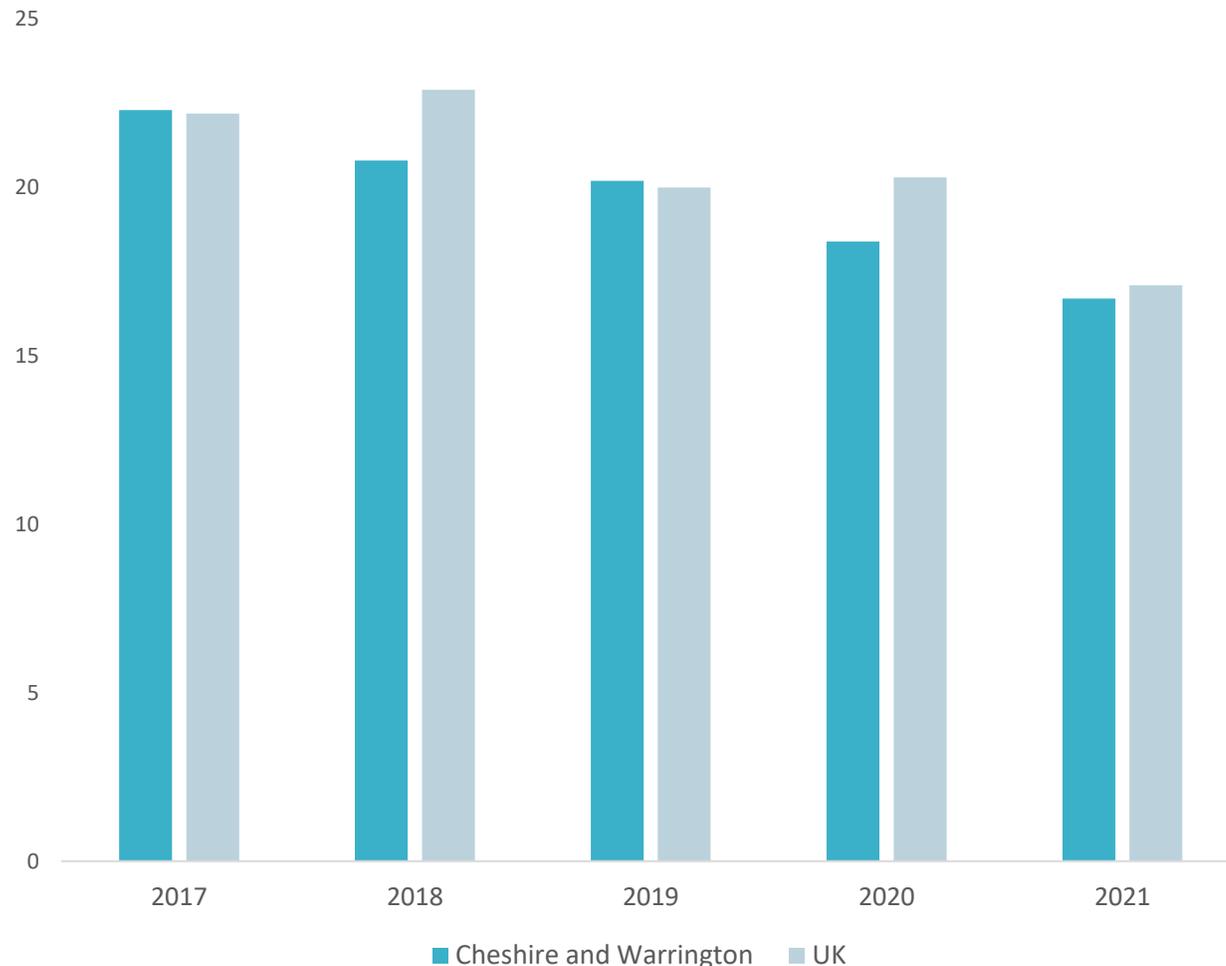
Are more employers opting to pay the Real Living Wage?

Proportion of employees earning within 20p of hourly wage rate in 2021, UK (zoom in below)
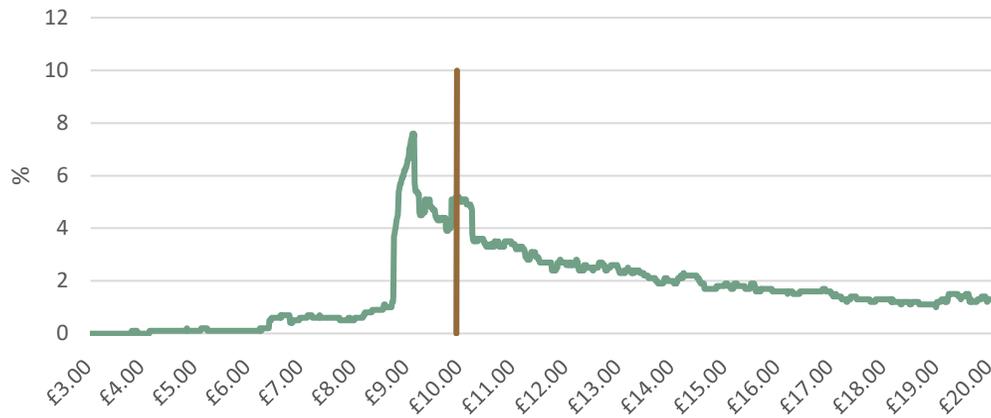
Firstly, it may be that, on the basis of the real living wage campaign, more employers in Cheshire and Warrington have been choosing to pay their staff the Real Living Wage. We do not have data for the exact wages being paid across the distribution in the LEP, but nationwide, we can see there is a "bump" around the current real living wage level of £9.90

However, a zoom in (see bottom chart) shows that actually the values here are clustering around £10. This is therefore more likely to do with £10 being a "round number" against which wage deals are likely to be regularly struck.

We have, however, seen the proportion of people being paid at or around £10 increase nationwide from around 3.8% in 2018 to around 5.1% in 2021. This may be in part because, as the national living wage (the statutory minimum rate for those aged 23 and over) has come closer to £10, £10 is an increasingly obvious choice for staff earning just above the minimum wage (e.g. team leaders and supervisors within a group doing minimum wage work). In recent years the statutory minimum wage has grown more quickly than the Real Living Wage – closing the gap, and pushing more people into the Real Living Wage.
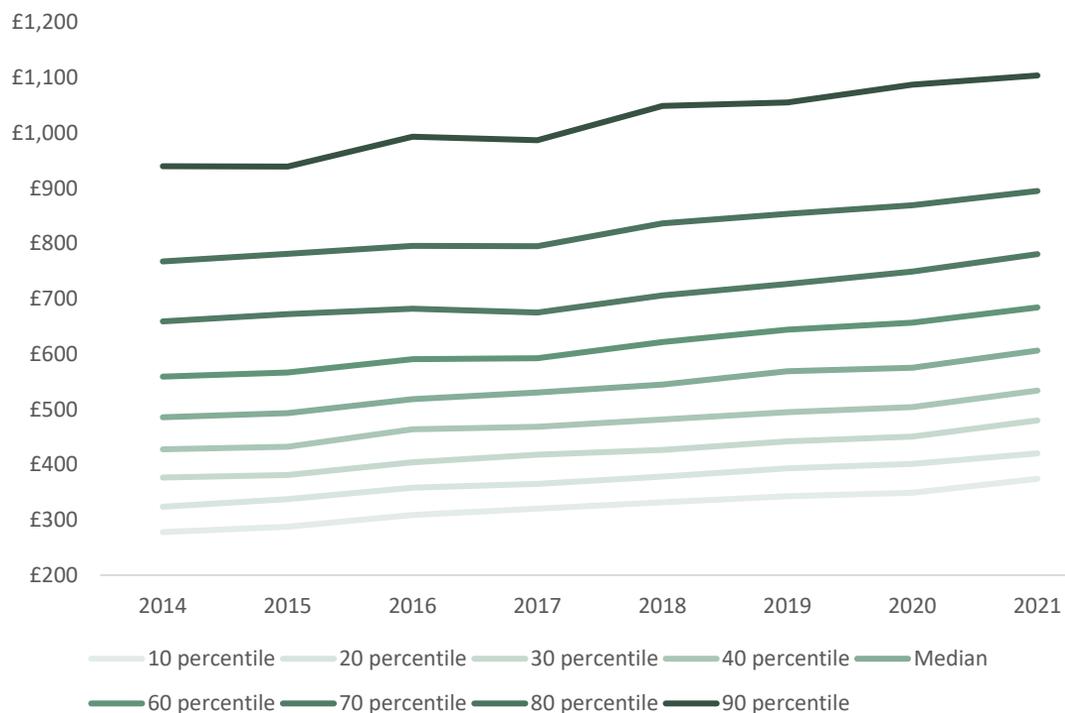
Source: ONS article Low and high pay in the UK: 2021

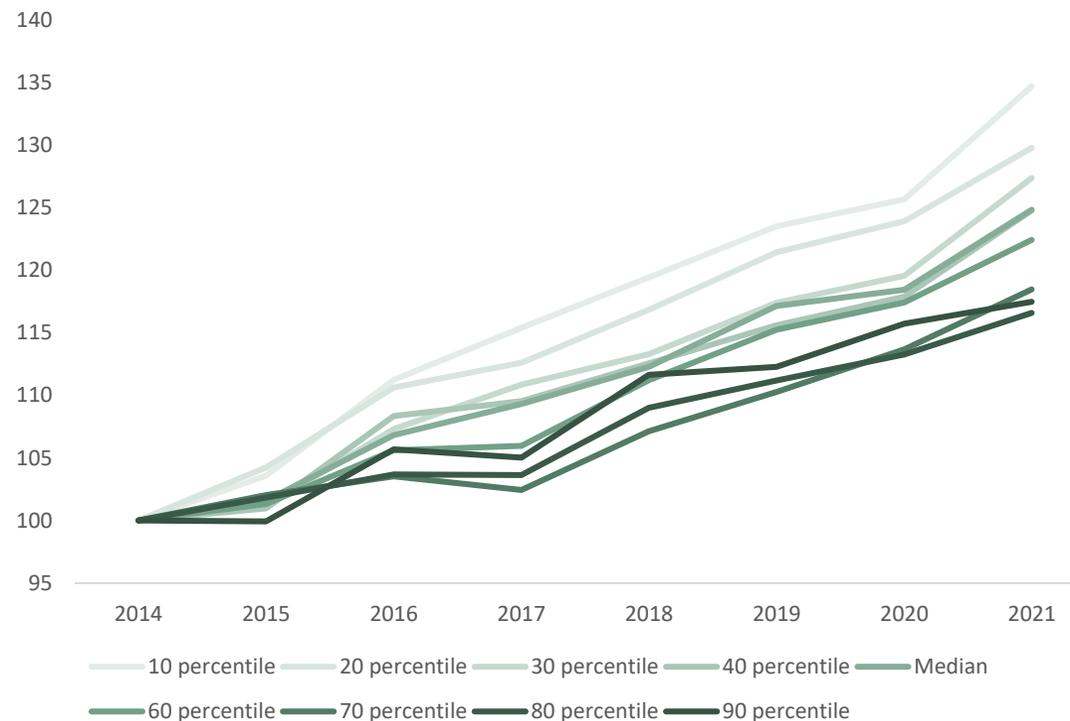# Wages of low earners have been rising at a faster rate

Wages have increased for every income decile, with the lowest deciles increasing by higher proportions; in 2021 the 10th percentile wage was 34.7% higher than in 2014, in comparison the median rose 24.8% in the same period.

Rising low incomes help to explain the rise in Real Living Wage coverage; in 2021 the hourly 10th percentile wage for Cheshire and Warrington was £9.60. Increases in the national minimum and national living wage may also have helped, by shifting the wage structure at the bottom end of the labour market upwards.

Gross weekly pay – Cheshire and Warrington

Index of gross weekly pay (2014 = 100)

Source: Annual Survey of Hours and Earnings

There have been significant changes in the composition of jobs

Change in occupations in Cheshire and Warrington vs North West median wage

Change in number of jobs: 2018 to 2021

- Caring Personal Services
- IT and Telecommunications Professionals
- Elementary Process Plant Occupations
- Financial Institution Managers and Directors
- Plant and Machine Operatives
- Quality and Regulatory Professionals
- Media Professionals
- Health and Social Services Managers and Directors
- Other Elementary Services Occupations
- Managers and Proprietors in Other Services
- Health Professionals
- Sales Assistants and Retail Cashiers
- Functional Managers and Directors
- Road Transport Drivers

Median Wage (North West, 2021)

To understand the rise in the lowest incomes and greater RLW coverage we need to consider changes in the labour market in more detail.

Overall, the Annual Population Survey indicates there were 10,743 fewer jobs in Cheshire and Warrington in 2021 than in 2018. It is important to bear in mind this data was collected in 2021, when for some of the year the economy was in lockdown, with employment depressed for the first half of the year.

Looking at the changes to occupations and the median wages it is not evident that there has been a greater increase in higher paid occupations.

Using data on income deciles for the North West we can estimate what proportion of each occupation earn above the RLW and therefore how many of the jobs gained, and how many of those lost pay below RLW

The number of occupations paying below the RLW have fallen at a faster rate than the number of occupations paying above the RLW
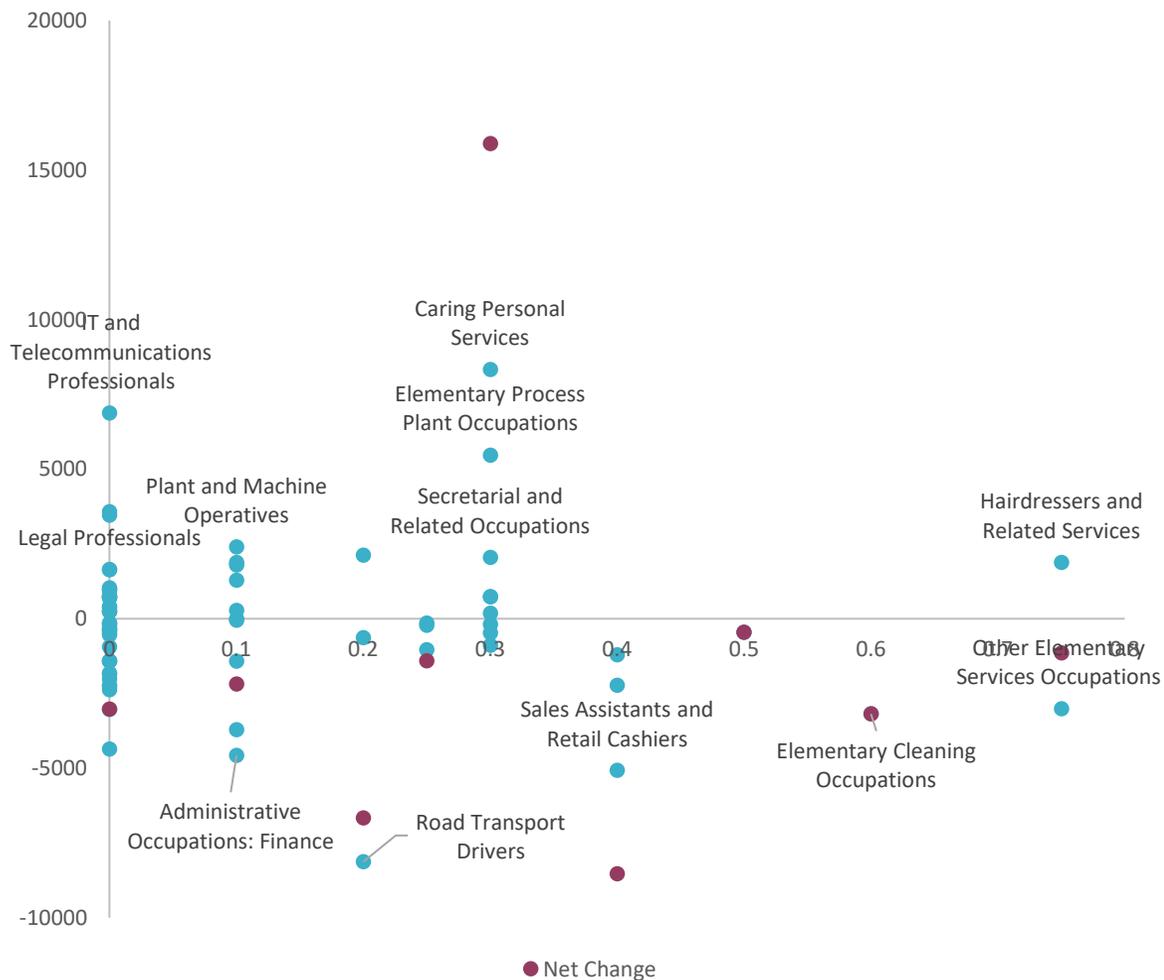
Using regional wage data we can estimate the number per occupation earning below the real living wage.

The number of jobs in Cheshire and Warrington fell 2.5% between 2018 and 2021, according to the Annual Population Survey (APS), with the **number earning below the RLW falling by 3.3%** and the number earning above the RLW falling by 1.9%. The largest fall was for Road Transport Drivers, with 8,139 fewer jobs in this occupation in 2021; there were also large decreases for Sales Assistants and Cashiers, Cleaners, Nurses and Elementary Services. Over the same period there were increases in the numbers working as Carers, IT professionals and in Secretarial Occupations and Elementary Process Plant occupations, among others.

The faster rate of decline in jobs may help to explain the fall in the share of occupations earning below the RLW

Source: Annual Survey of Hours and Earnings, Annual Population Survey

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Is this trend likely to continue?
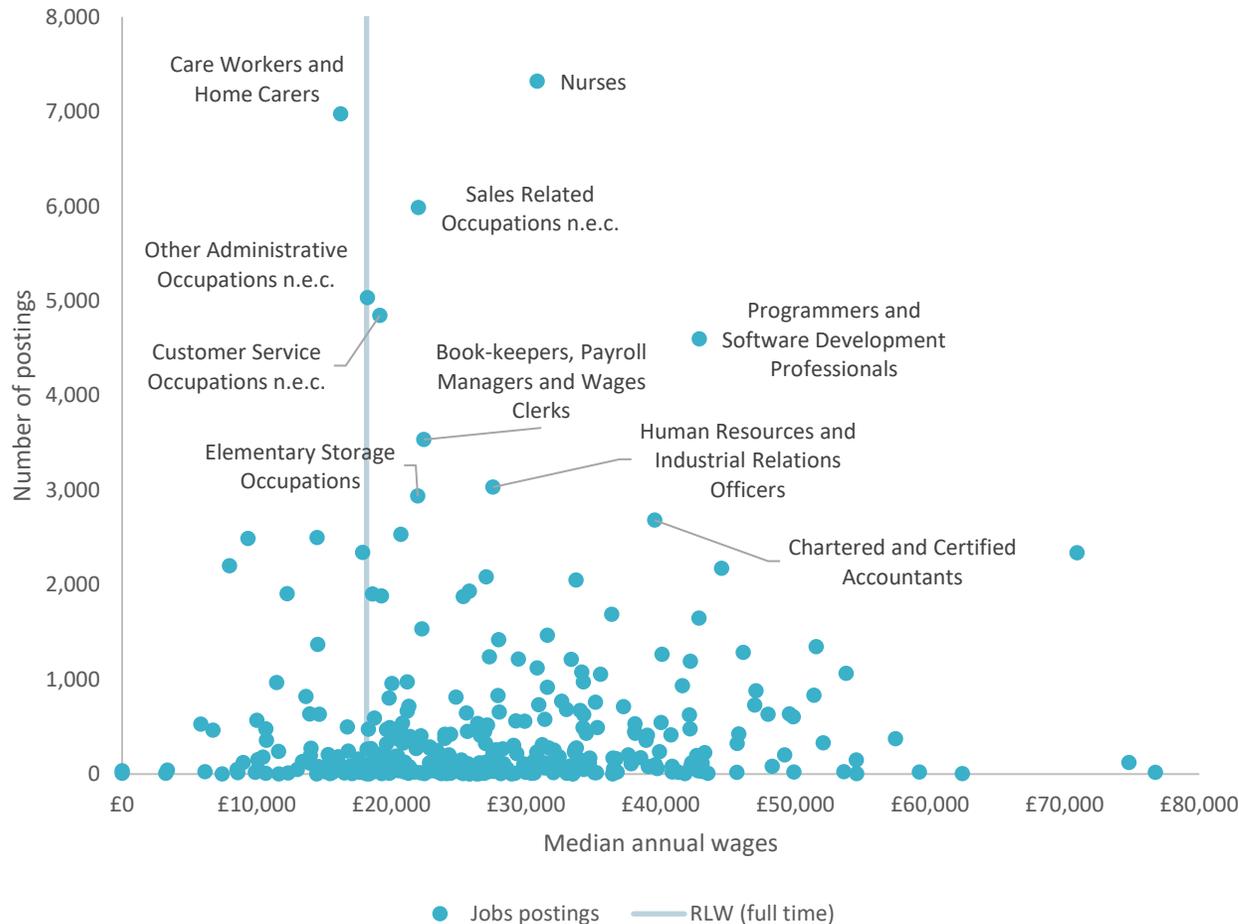
The chart, left, shows postings for jobs in Cheshire and Warrington between April 2021 and May 2022, along with the median wage for that job. It gives an indication of where things might be headed next. We have calculated the RLW annual amount by multiplying the hourly wage by the amount of hours we would expect someone to work in a full-time job over a year.

As is clear, the majority of postings are for jobs where the median workers earns above the Real Living Wage. **Only 17.4% of postings are for occupations where the median worker owns below the Real Living Wage.** Almost a quarter of those jobs are for care workers and home carers, the second highest in demand job of all.

Nurses are currently the most in demand role, with a salary significantly above the real living wage. Some of the other main jobs being posted for – Programmers, HR officers, and Accountants – are also well above it. This may suggest, on balance, that Real Living Wage coverage is set to remain high, and maybe even increase in Cheshire and Warrington.

However, this data – and what is means – needs to be treated with caution for a few reasons. Firstly, these are median wages – within every job there is a spread of earnings. Secondly, the real living wage is set to rise significantly (see our projection of £10.62 an hour) – taking some median wage rates – such as for customer service occupations – below the threshold. Thirdly, the fact that these jobs are being advertised doesn't mean they will be filled – particularly with a very tight labour market at the moment. And finally, if predictions of a future recession are realised, it is likely to significantly alter the quantity of labour being demanded by occupation type.

Jobs postings by median annual wage, Cheshire and Warrington

Source: EMSI via CWLEP. The top ten jobs for postings are labelled

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What is the likely future direction of the Real Living Wage?

The Real Living Wage (RLW) is independently calculated to establish the wage rate needed to reach a minimum acceptable living standard in London and in the rest of the UK.

The National Living Wage is the statutory minimum hourly wage that must be paid to workers aged 23 and over (prior to 1 April 2021 the National Living Wage was for those aged 25 and over)

In 2021/22 the RLW for the UK is £9.90 an hour, £0.99 higher than the statutory National Living Wage (£8.91)

The RLW is based on prices of goods and services collected in April and it is ordinarily announced in November. The RLW foundation have already said that **the announcement of the 2022/23 RLW will be in September** because of inflation.

Source: Real Living Wage Foundation

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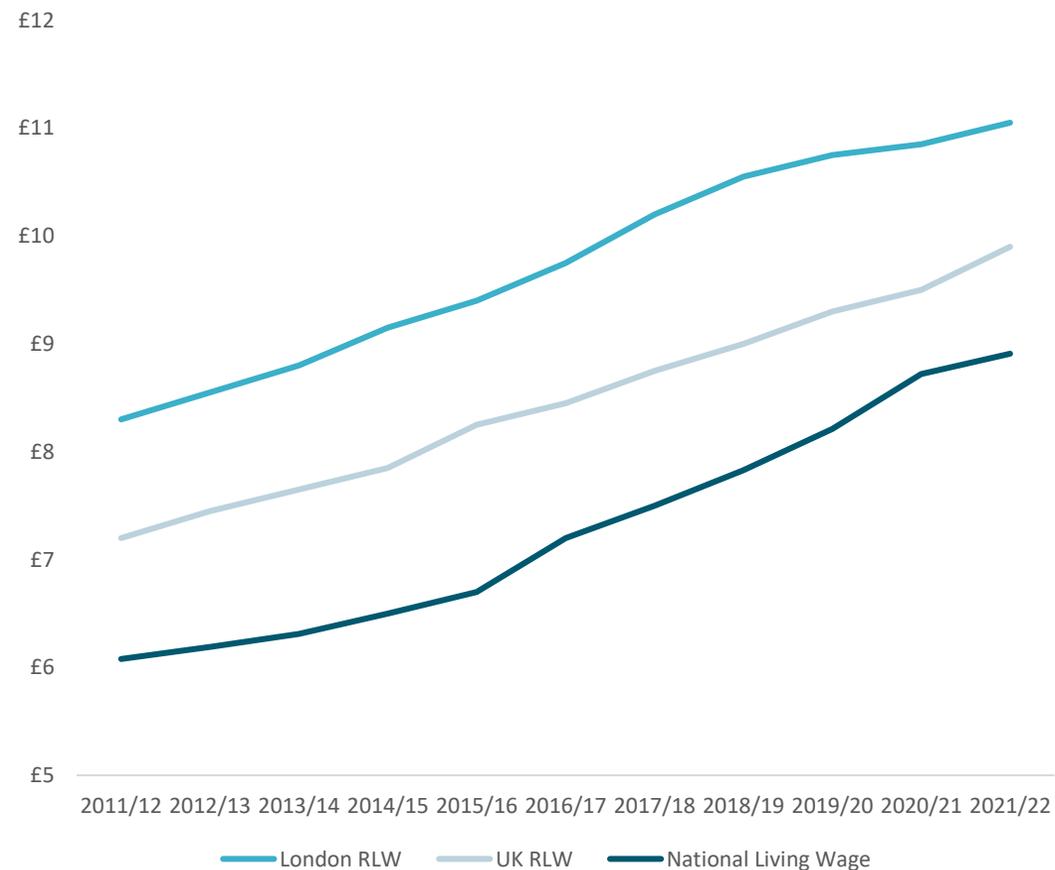
CPIH inflation and the National Living Wage have already gone up significantly

Annual % change in wage rates and inflation

UK RLW — National Living Wage — CPIH

Note: CPIH 20XX/YY is the rate in April 20XX, the time when prices for RLW are taken.

Source: Real Living Wage Foundation, ONS CPIH

Between 2016/17 and 2020/21 the National Living Wage increased at a faster rate than the RLW, though it remained lower.

Both wage rates rose by more than CPIH through a time of low inflation, the question now is how they will move with inflation at its highest point in decades. A 6.6% increase in the NLW was introduced in April 2022, bringing it up to £9.50 per hour

We expect RLW to rise and for this rise to be the higher than any across this period. **The anticipated large increase in the RLW will likely result in coverage falling** – though this may depend on the bargaining power of Cheshire and Warrington's workers
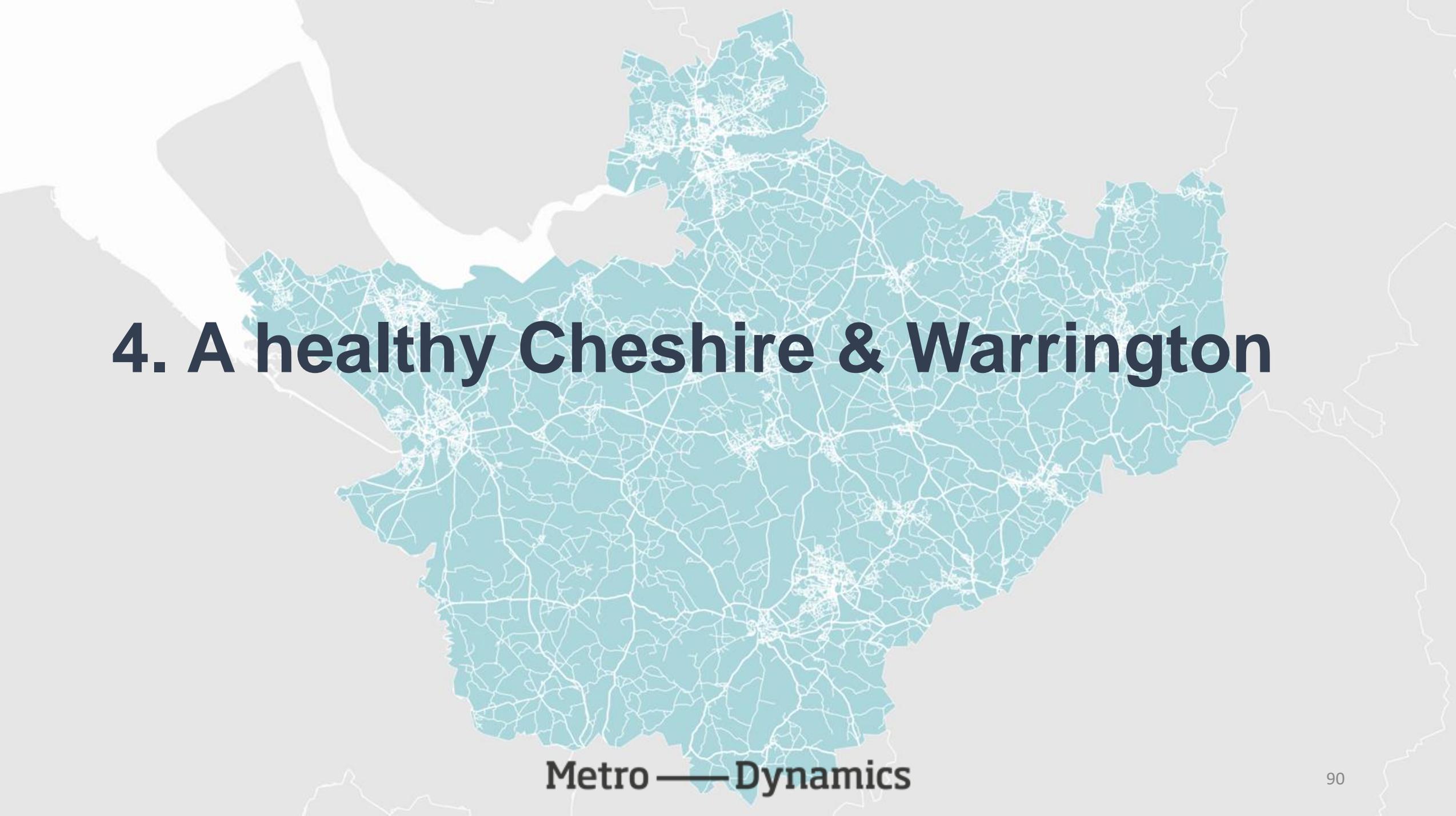
4. A healthy Cheshire & Warrington

Metro——Dynamics

A healthy Cheshire & Warrington

Healthy is one of the four priority areas in the vision. We carried out a range of new analysis, including looking at the prevalence of health conditions at the sub-regional and local level, trends in healthy life expectancy and life expectancy, health deprivation and inequality, economic inactivity due to ill health, and the relationship between claimant county and life expectancy.

The interesting findings highlighted in this section include:

- There are good levels of health in the sub-region overall, but at the local level there are stark inequalities between places at the local level. Across Cheshire and Warrington, there are 47 neighbourhoods in the 10% most deprived for health outcomes and 25 in the 10% least deprived. Health outcomes in some of the most deprived places are getting worse.

- Healthy life expectancy varies by almost 16 years.

- Some residents are living 21 years in poor health and this varies within the sub-region.

Metro —— Dynamics

High overall health outcomes

Theme	Indicators	Cheshire East	Cheshire West and Chester	Warrington	North West	England
Mortality	Life expectancy female (2018-20)	83.8	83.4	82.3	81.7	83.1
	Life expectancy male (2018-20)	80.3	79.7	78.9	77.9	79.4
	Healthy life expectancy female (2018-20)	67.4	67.9	64.8	62.4	63.9
	Healthy life expectancy male (2018-20)	67.4	63.1	64.6	61.5	63.1
Disease and illness	Excess winter deaths ratio (Aug 2018 - Jul 2019)	15.3%	8.1%	11.4%	13.4%	15.1%
	Under 75 mortality from all causes per 100,000 (2018-20)	298.1	339.3	347.6	398.8	336.5
Behavioural	% of physically active adults (2019-20)	71.3	69.1	63.2	63.9	66.4
	% of adults (18+) classified as overweight or obese (2019-20)	66.3	69.1	63.7	65.9	62.8

Cheshire and Warrington performs well across health outcomes, with the highest performance in Cheshire East and lowest in Warrington. The table is RAG rated by performance, where green is higher performance than both the England and regional average, yellow is better than one of the comparators, and red is lower than both.

Life expectancy (LE), as shown in the table above, is higher in Cheshire East, and Cheshire West and Chester compared to the regional (81.7) and national (83.1) averages. Warrington performs better than the regional average, but is below the national average. Life expectancy has remained very similar for all three local authorities since 2015-17, with the only significant change being an increase of 0.6 years for females in Cheshire West and Chester. Healthy life expectancy (HLE) reveals that the resident population live longer and healthier lives on average in Cheshire and Warrington and this is increasing relative to the other comparators; however, the gap between LE and HLE is wider in Cheshire West and Chester for males than the sub-regional average, and closer to that of the regional and national averages.

Under 75 mortality rate from all causes has slightly increased for Cheshire East, and Cheshire West and Chester from 2015-17 (296.8 and 325.5 respectively), which is the same as the national and regional trend (in 2015-17 rates were 391.3 and 331.9 in the North West and England respectively). The rate slightly fell for Warrington from 346.8. The excess winter deaths ratio is above the regional and national average in Cheshire East for the year August 2018 to July 2019, but increases in all local authorities for the following year to above the England average. This is likely due to the pandemic.

The proportion of physically active adults in Warrington has fallen since 2015/16. In Cheshire West and Chester, almost 70% of adults are classified as overweight, which has increased from 59.0% in 2015/16. Over the same period the proportion in Cheshire East has increased from 58.3% to 66.3%. This is despite an increase in physical activity in both Cheshire East and Cheshire West and Chester.

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Source: Public Health England (various)

Metro —— Dynamics

Additional health outcomes

The table shows health outcomes across Cheshire and Warrington, its local authorities and comparators. Generally districts in Cheshire and Warrington perform better against these measures relative to the national and regional averages.

Indicators	Cheshire East	Cheshire West and Chester	Warrington	Cheshire and Warrington	North West	England
Infant mortality rate (per 1,000)	3.3	2.9	4.2	3.5	4.3	3.9
Smoking prevalence in adults (18+)	13.8	11.3	11.3	12.1	14.5	13.9
Deaths from drug misuse (per 100,000)	3.3	5.4	4.3	4.3	7.1	5.0
Under 18 conception rate (per 1,000)	10.6	13.7	17.7	14.0	19.4	15.7
Suicide rate (per 100,000)	9.3	9.1	9.0	9.1	10.7	10.4
Nursing home beds per 100 people 75+	6.5	5.7	7.1	6.4	5.1	4.6

Source: Public Health England (various)

Metro —— Dynamics

Areas with low and worsening health outcomes

Analysis shows that there are health inequalities in Cheshire and Warrington: 47 neighbourhoods are in the 10% most deprived for health outcomes and 25 in the 10% least deprived for health outcomes. This analysis is relative and compares all neighbourhoods at the LSOA level in the country and categorises these into deciles.

The maps overleaf show health deprivation (a measure of risk of premature death and quality of life via physical health metrics) across the sub-region at the local level and the change in deprivation decile between 2015 and 2019.

Generally, the most deprived parts of the sub-region are found in the urban centres as opposed to rural areas. Deprivation in health is lowest in Cheshire East, with under 5% of neighbourhoods in the top 10% least deprived. However, there are areas of high health deprivation in and around Crewe, accounting for over 50% of the most health deprived neighbourhoods in Cheshire East.

The most significant levels of health deprivation are in Warrington where there are 36 neighbourhoods (LSOAs) in Warrington in the top 20% most deprived, which accounts for just under a third of the total for Cheshire and Warrington. These neighbourhoods are concentrated in the town centre of Warrington.

Cheshire West and Chester has slightly higher levels of health deprivation relative to the England average (25% neighbourhoods in the 20% most deprived nationally). This is mostly concentrated around Ellesmere Port and Chester, where 31 of the 51 most deprived neighbourhoods in the borough are located. Many of the rural parts of the borough have low deprivation, with areas in the top 20% least deprived.

Change in deprivation between 2015 and 2019 reveals that in many parts of the sub-region, health deprivation is either the same or worsening. Places that have experienced increases in deprivation include some significantly deprived areas of towns, including Crewe and Ellesmere Port. This continued trend could lead to a further widening of inequality across health outcomes.
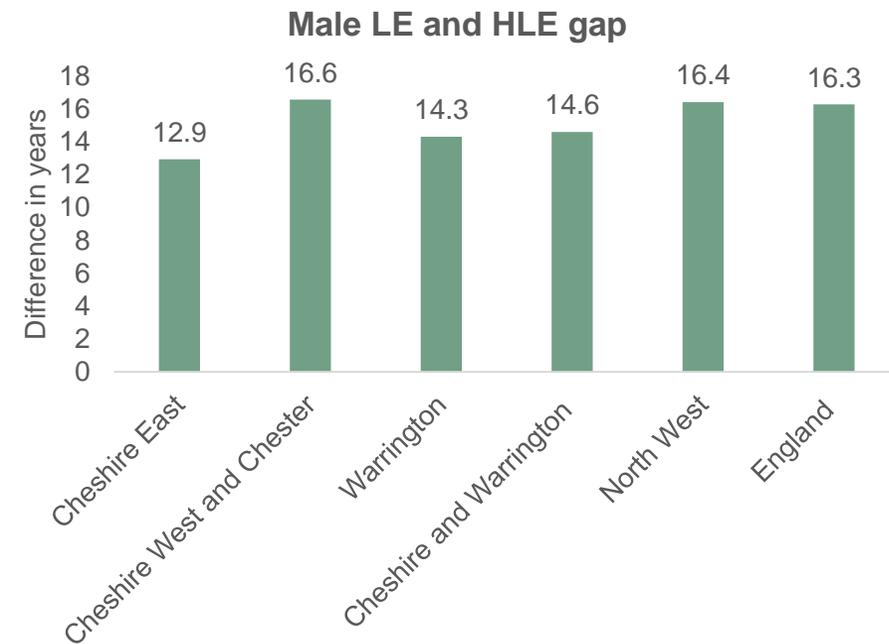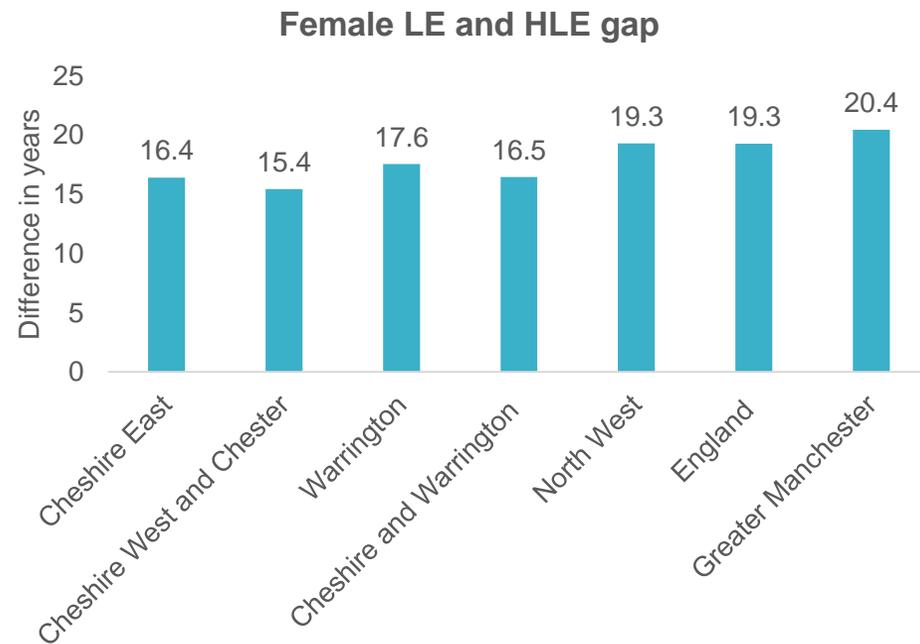
Rural areas have also observed worsening deprivation, such as central Cheshire and Warrington, north of Alsager, south Nantwich, and South/West of Ellesmere Port, although these areas still have relatively low levels of overall health deprivation. The areas surrounding Warrington urban centre appear to be falling in deprivation, but these are already the parts with lowest deprivation in the borough.

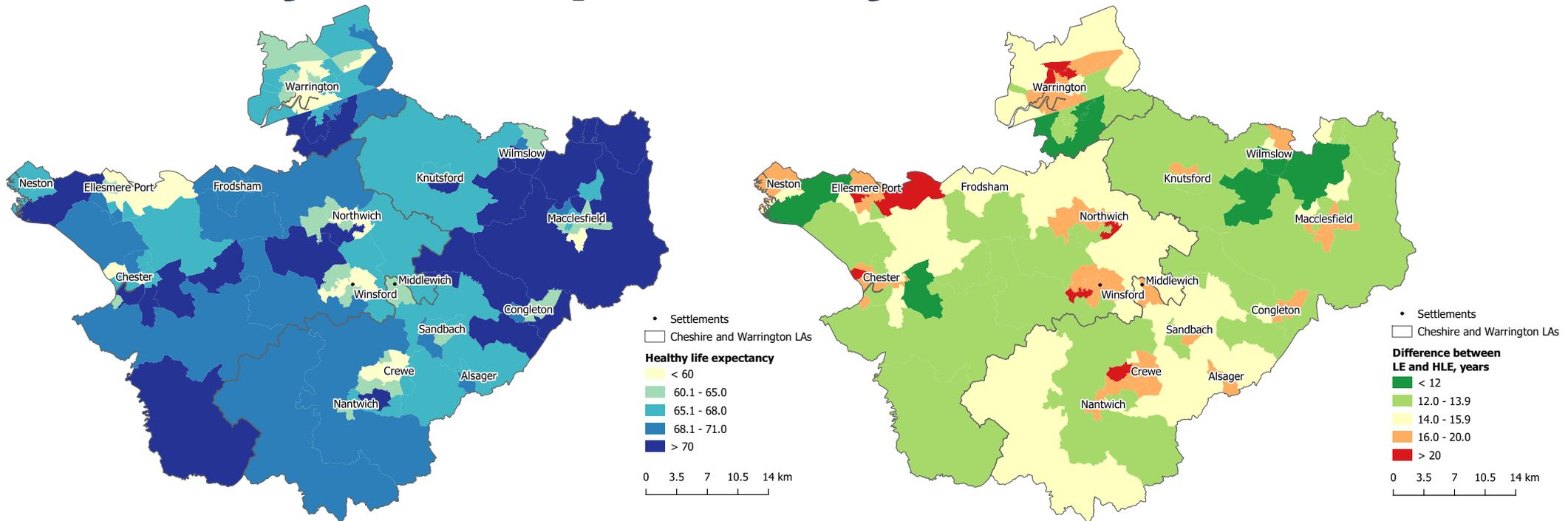*Source: Ministry of Housing, Communities and Local Government – Index of Multiple Deprivation (2019)*

Metro —— Dynamics

Health Deprivation
- Higher
- Lower

Settlements
Cheshire and Warrington LAs

Change in health deprivation decile (2015 - 2019),
- -3 more deprived
- -2
- -1
- 0
- 1
- 2
- ≥ 3 less deprived

Settlements
Cheshire and Warrington LAs

95

Source: Ministry of Housing, Communities and Local Government – Index of Multiple Deprivation (2015 and 2019)

Metro —— Dynamics
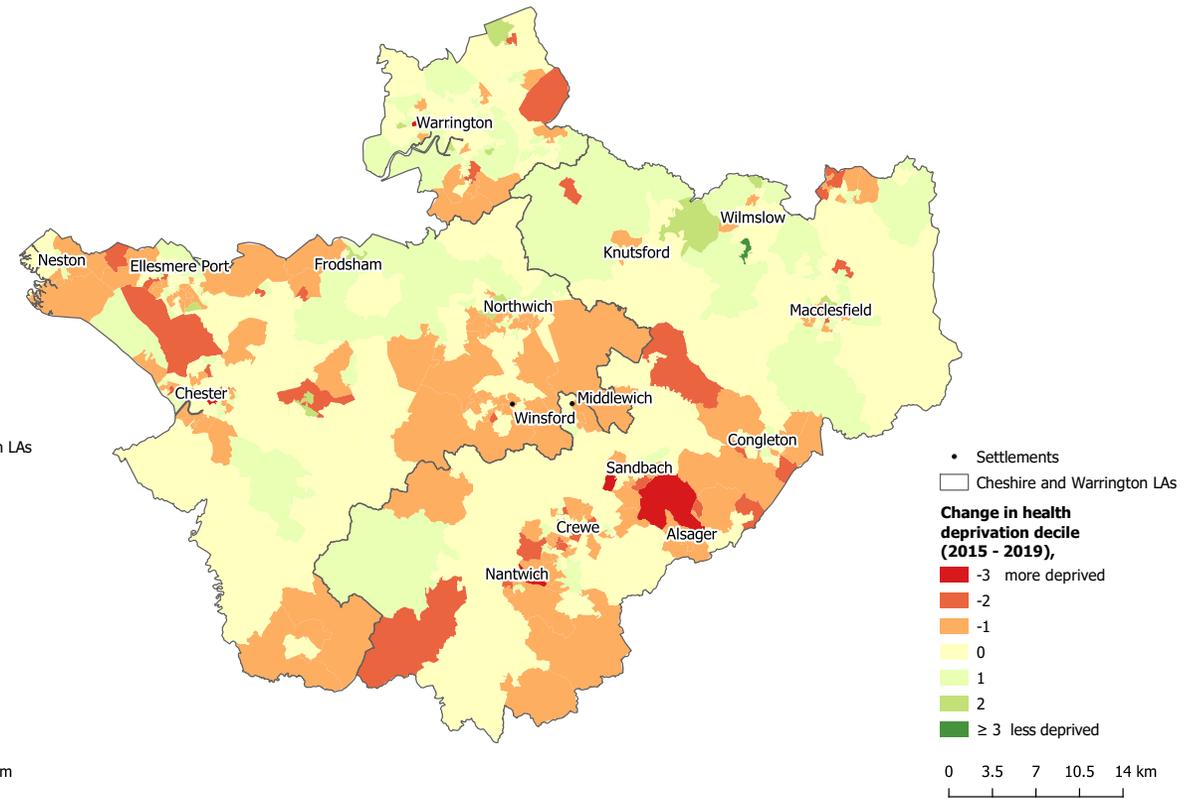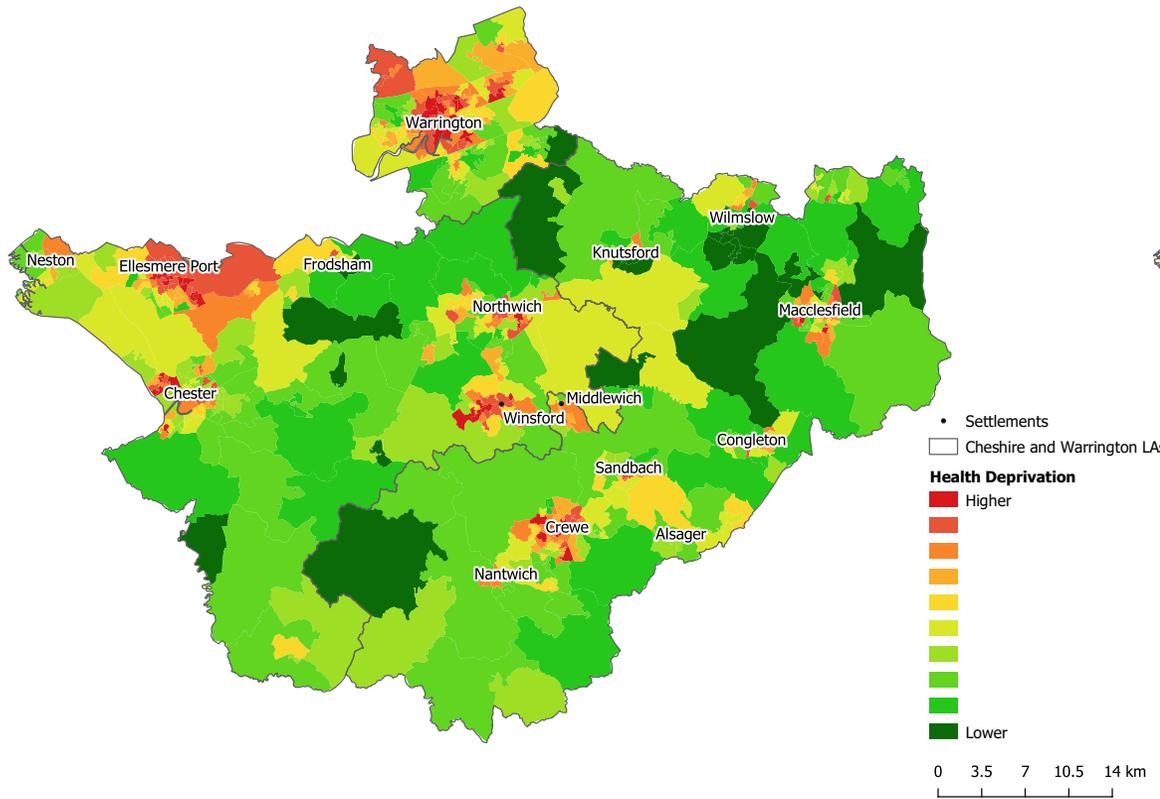
Gap in life expectancy and healthy life expectancy

The charts below shows the gap in life expectancy and healthy life expectancy in Cheshire and Warrington and comparators. Overall the gap between LE and HLE is narrower in Cheshire and Warrington compared to the national and regional averages. Amongst females, the gap is wider than the sub-regional average in Warrington and in males, it is wider in Cheshire West and Chester.

Female LE and HLE gap

Male LE and HLE gap

Source: Public Health England and ONS (2018-20). Data not available for EM3.

Metro —— Dynamics

Healthy life expectancy

Healthy life expectancy
- Settlements
- □ Cheshire and Warrington LAs

Healthy life expectancy
- < 60
- 60.1 - 65.0
- 65.1 - 68.0
- 68.1 - 71.0
- > 70

0   3.5   7   10.5   14 km

Difference between LE and HLE, years
- Settlements
- □ Cheshire and Warrington LAs

Difference between LE and HLE, years
- < 12
- 12.0 - 13.9
- 14.0 - 15.9
- 16.0 - 20.0
- > 20

0   3.5   7   10.5   14 km

Though healthy life expectancy is high in Cheshire Warrington as a whole, there is significant variation across the sub-region at the local level, as shown by the map above. Healthy life expectancy tends to be higher in rural areas, compared to towns, particularly in the eastern part of the sub-region surrounding Macclesfield, the south west, and west of Northwich. Many of the neighbourhoods with the highest healthy life expectancy are directly adjacent to those with the lowest (e.g. Warrington, Ellesmere Port, Northwich, and Macclesfield).

The map on the right shows the difference in years between health life expectancy and life expectancy – essentially how many years a person could live in poor health. Many of the towns, such as Warrington, Crewe, Norwich and Ellesmere Port, have healthy life expectancy below 60 years (vs England average of 63 years). This could impact the ability of people to continue in work. The gap between life expectancy and healthy life expectancy is typically highest within urban centres, with a difference of at least 16 years (with the exception of Knutsford and Wilmslow) and with some residents living 21 years in poor health.

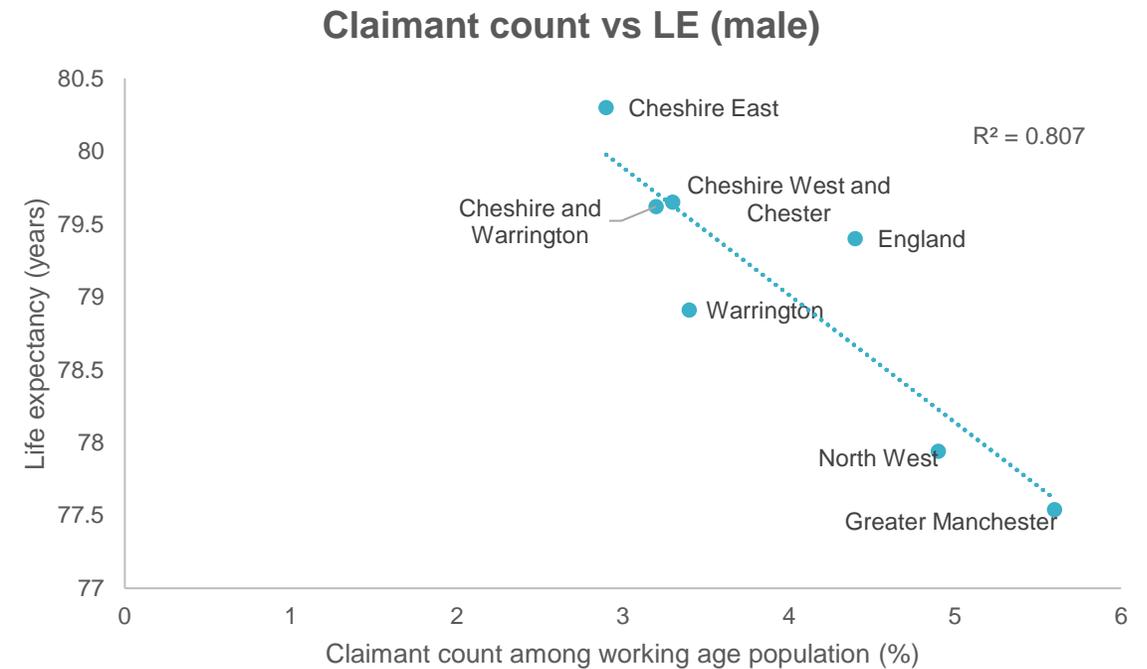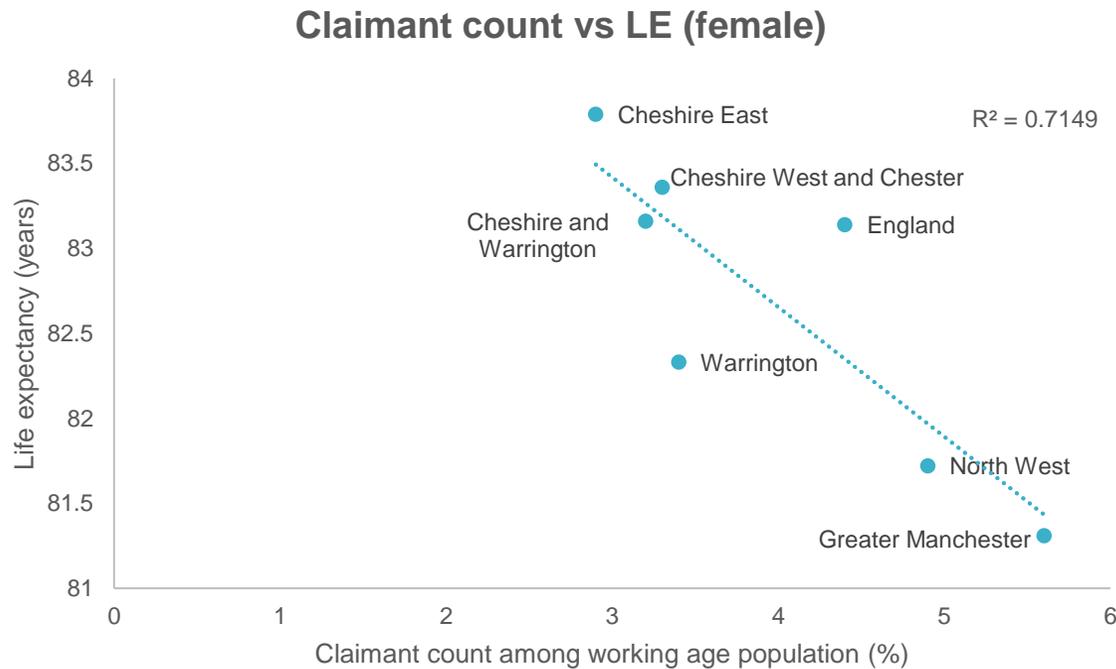*Source: ONS – Health state life expectancies, UK: 2009-13*

Metro ——— Dynamics

Female / Male Healthy life expectancy

The charts show healthy life expectancy (HLE) for female and males between 2011 and 2020 for Cheshire and Warrington and comparators. HLE is higher in the sub-region than the regional and national average.
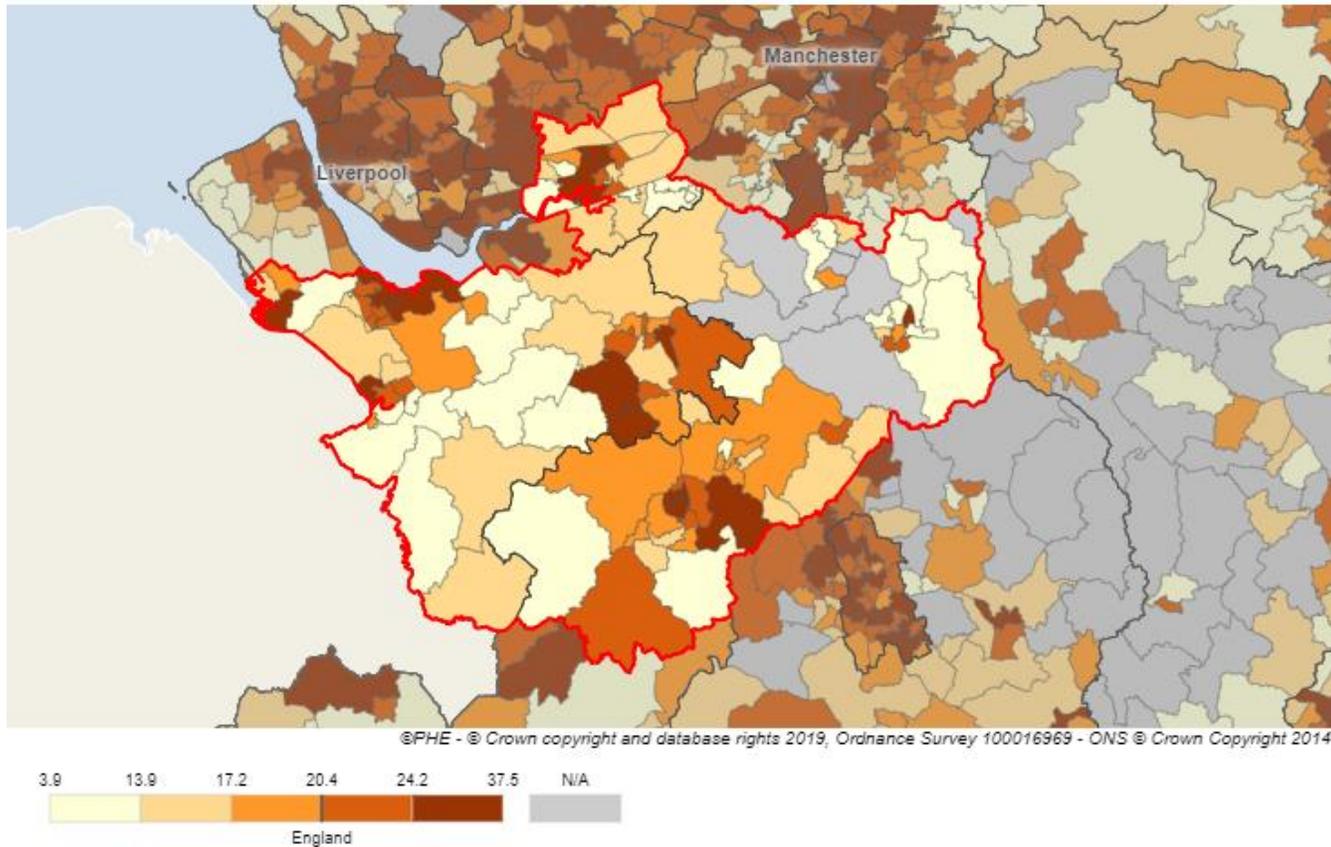
Female HLE

Male HLE

Source: Public Health England (2011-13 – 2018-21). Data not available for EM3.

Metro —— Dynamics
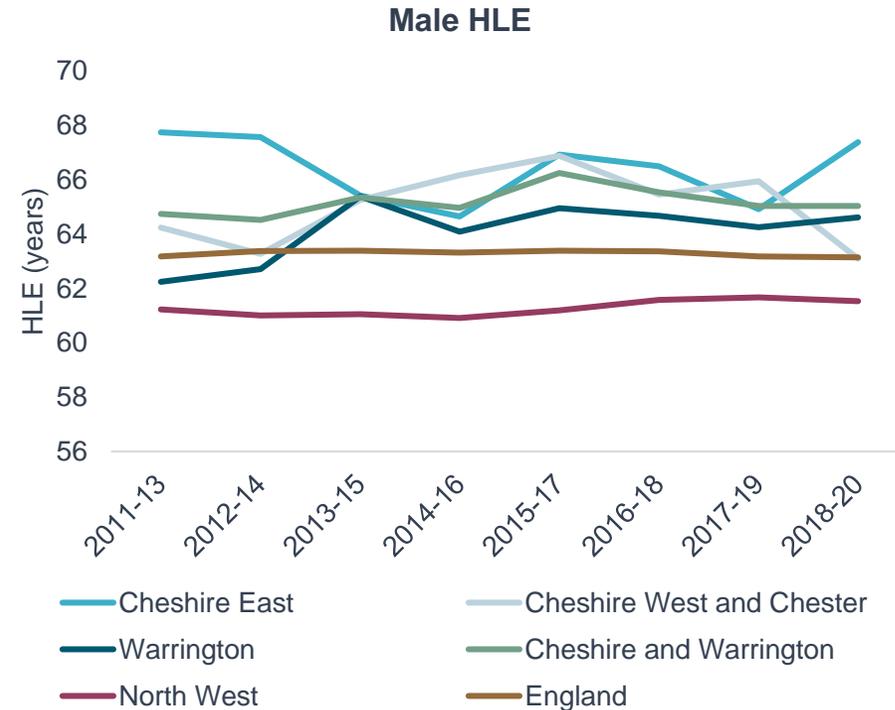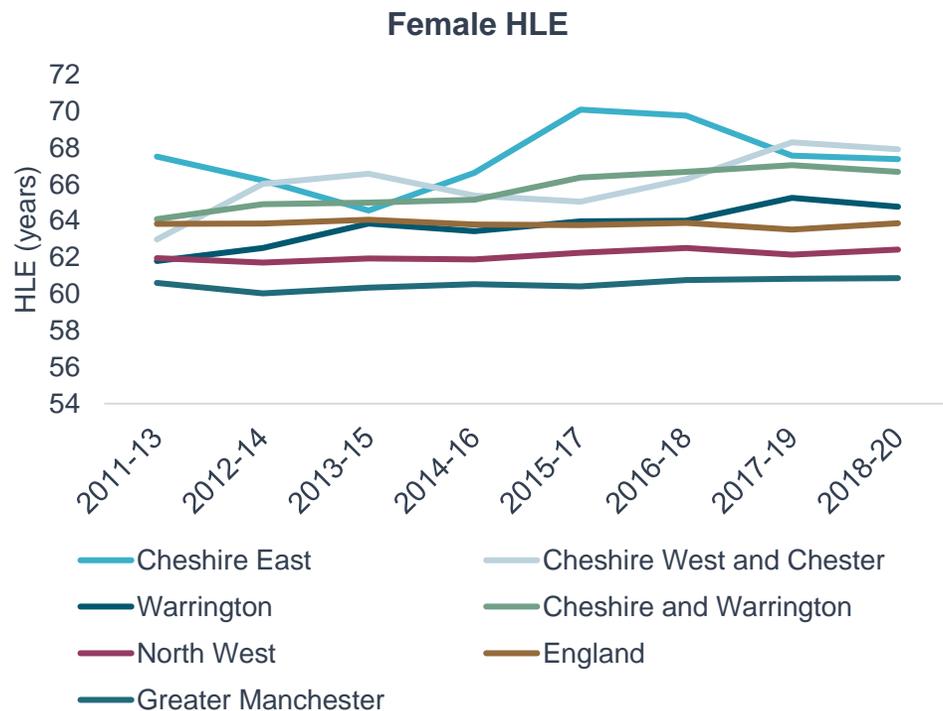
Claimant count vs life expectancy

The chart shows claimant count plotted against LE for Cheshire and Warrington and comparators. Claimant count is negatively correlated with life expectancy, where Cheshire East has the lowest claimant rate and highest life expectancy.

Claimant count vs LE (female)

Claimant count vs LE (male)

99

Source: Life expectancy – ONS (2018-20) and Department of Work and Pensions (Jan 2022). Data not available for EM3.

Spatial differences in health outcomes start from an early age

Year 6: Prevalence of obesity (including severe obesity) (%) - Source: National Child Measurement Programme (NCMP), NHS Digital

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| 3.9 | 13.9 | 17.2 | 20.4 | 24.2 | 37.5 | N/A |

England

In most instances, in areas that have poorer health outcomes, these challenges tend to arise in children.

This is highlighted by the map on the left, which shows the prevalence of obesity in Year 6 children at the ward level in Cheshire and Warrington. Areas that have low healthy life expectancy, such as Ellesmere Port, Warrington and Chester, also have some of the highest obesity rates. North Chester has the highest rates in the sub-region with over one third of Year 6s classified as obese, relative to the England average of 20.4%.

100

Source: Public Health England (2017-20)

Prevalence of overweight and obesity amongst adults

The map shows the prevalence of obesity in adults by quintile group (2014). Warrington has a large proportion of its neighbourhoods in the highest quintile group (20% of areas).

Adults (aged 16+): Estimated prevalence of obesity, including overweight, by national quintile (Quintile) - Source: Department of Geography and Environment, University of Southampton and Department of Geography, University of Portsmouth.

Source: Public Health England (2014)

Metro —— Dynamics
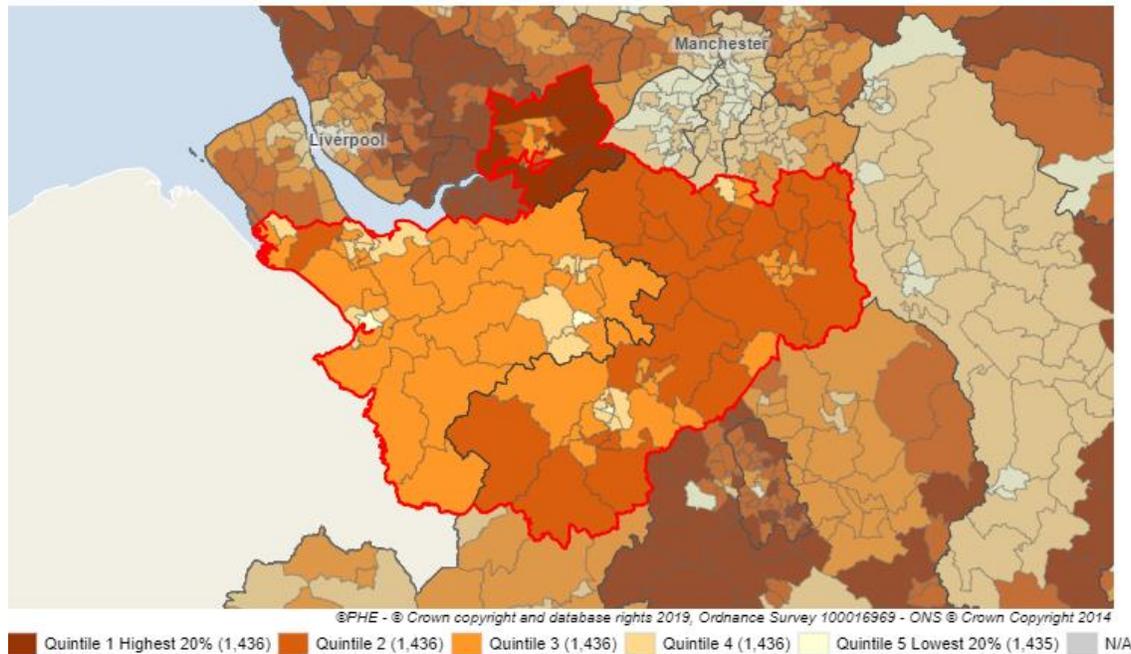
Deaths from causes considered preventable

The map below shows deaths from causes considered preventable, under 75 years in Cheshire and Warrington. The standardised mortality ratio is highest (more deaths than expected) in areas around Ellesmere Port and Warrington.

Deaths from causes considered preventable, under 75 years, SMR (Standardised mortality ratio (SMR)) - Source: Public Health England Annual Mortality Extracts (based on Office for National Statistics source data)

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| 4.7 | 63.2 | 79.8 | 100.0 | 127.0 | 374.0 | N/A |

England

Source: Public Health England (2015-19)

Metro —— Dynamics
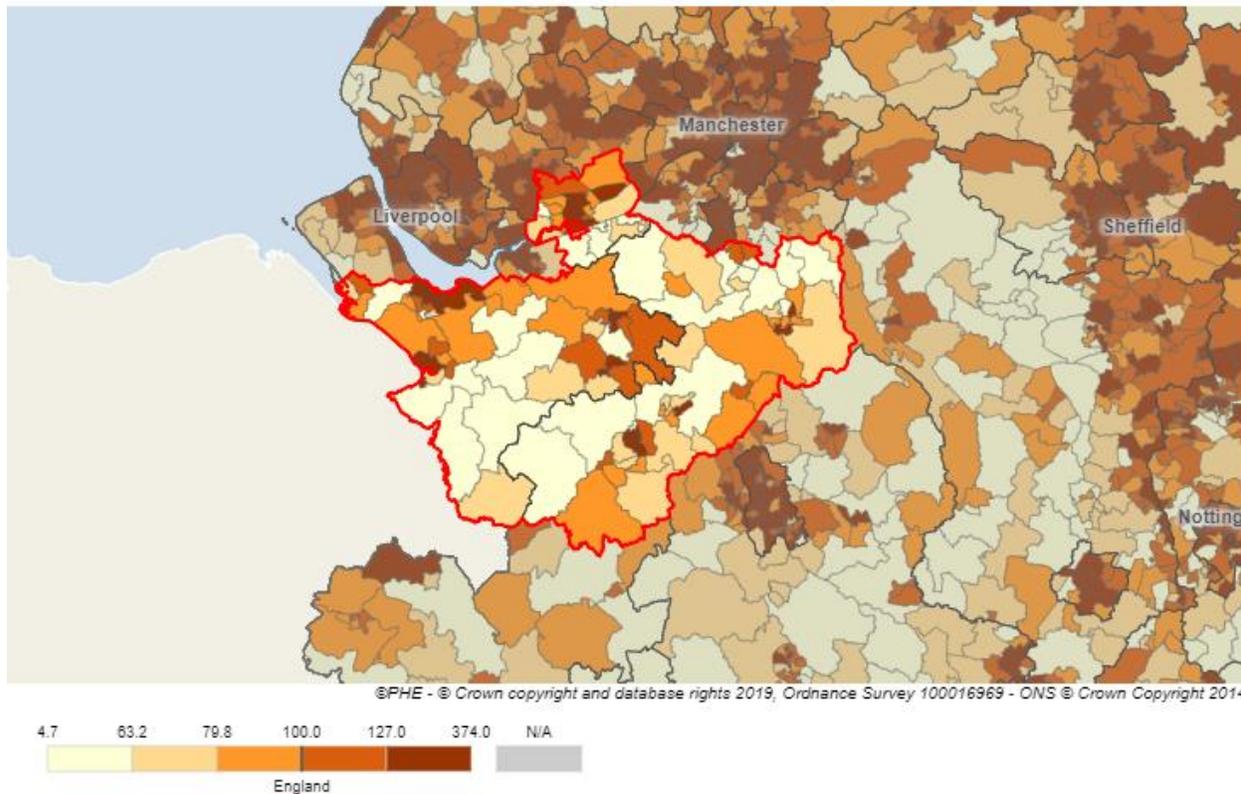
Economic inactivity due to illness

The chart shows economic inactivity due to long-term illness in Cheshire and Warrington and comparators. Warrington has the highest proportion of economically inactive citing long term illness as the reason (30%), above the regional and national averages.

Source: Public Health England (Sep 2021)

5. A growing Cheshire & Warrington

A growing Cheshire & Warrington

Growing is one of the four priority areas in the vision. We carried out a range of new analysis. This involved looking at innovation metrics, including innovation and STEM jobs, funding and venture capital investment and Higher Education intellectual property income. Economic complexity, supply chains and trade has been analysed. We also looked at vacancies, access to public transport, and changes in use of town centres and mobility.

Some of the interesting findings in this section include:

- Cheshire and Warrington is a productive and innovative economy but innovation activity is relatively concentrated in Alderley Park, Trident and Hurdsfield industrial estates.

- STEM related professionals represent 7.5% of the workforce, the 5th highest out of 40 NUTS2 sub-regions.

- The sub-region has performed well in recent years for attracting innovation funding, but there has been a fall in business spend on R&D. There has also been a decline in economic complexity.

- Goods exports have fallen in Cheshire and Warrington at a higher level than the national average, indicating potential vulnerabilities.

- Changes in mobility trends and vacancy rates in light of Covid-19 indicate that there may be new opportunities to think about the role of town centres and high streets.

Metro ——— Dynamics

Strong innovative capacity

Cheshire and Warrington has established strengths in innovative sectors. It is home to companies including Bentley, Vauxhall, TATA Chemicals, AstraZenca and Sanofi, and has strong R&D assets such as Alderley Park and Thornton Science Park, and a multisite Enterprise Zone.

There are sectoral strengths across many knowledge intensive industries, including life sciences, which has become more specialised over time. The manufacture of pharmaceutical preparations is almost 9 times more specialised than GB in 2020 (compared to 4 times in 2015). Large employing sectors including legal/accounting and financial services have also increased in specialisation over the past five years, advancing to twice the level of specialisation compared to GB.

There were 102,000 jobs in knowledge based sectors (including creative, information and communication, finance and insurance, professional services and scientific research) in Cheshire and Warrington in 2020, an increase of 26% since 2015, compared with 6.2% for England. Supporting the knowledge based activity is the highly skilled workforce, where in 2019, STEM related professional represented 7.5% of the workforce (this refers to professionals working in science, research, engineering and technology). This proportion has been on an upward trajectory since 2016, and is the highest across the North West and 5th highest out of 40 NUTS2 areas.

STEM professionals in NUTS2 regions in the North West

Legend:
- Cheshire and Warrington
- Greater Manchester
- Merseyside
- Cumbria
- Lancashire

Source: ONS BRES (2020) and Annual Population Survey (2020). See the end of the pack for definitions for knowledge based sectors, STEM professionals and innovation jobs.
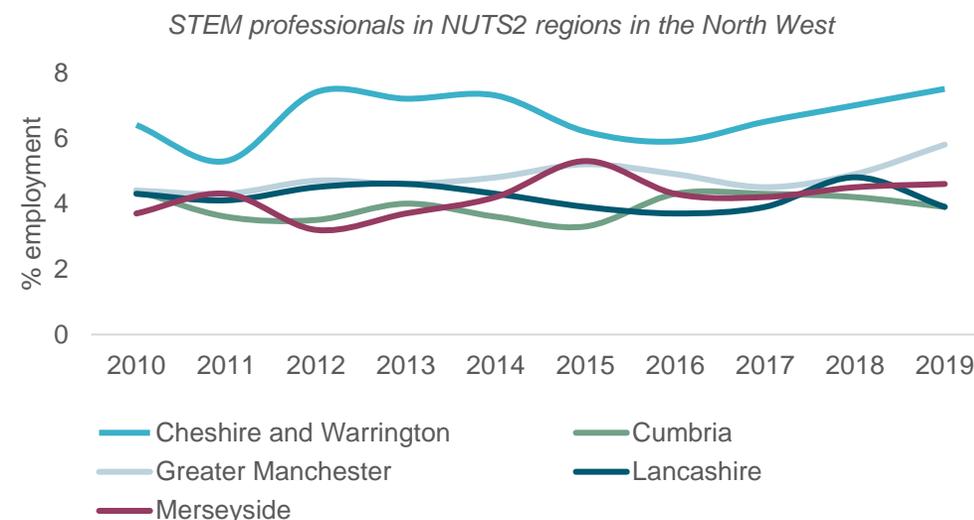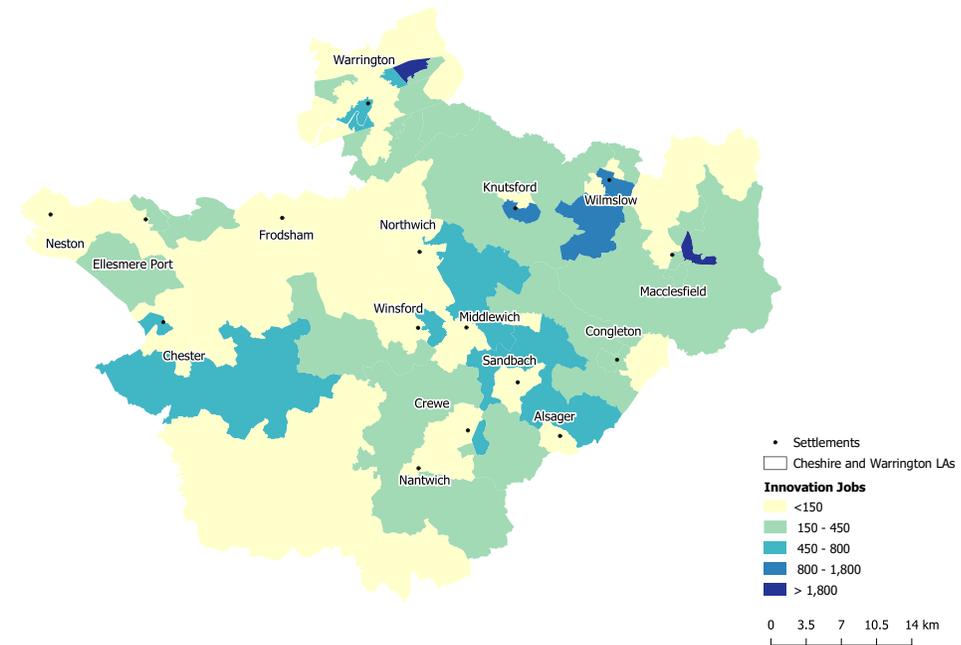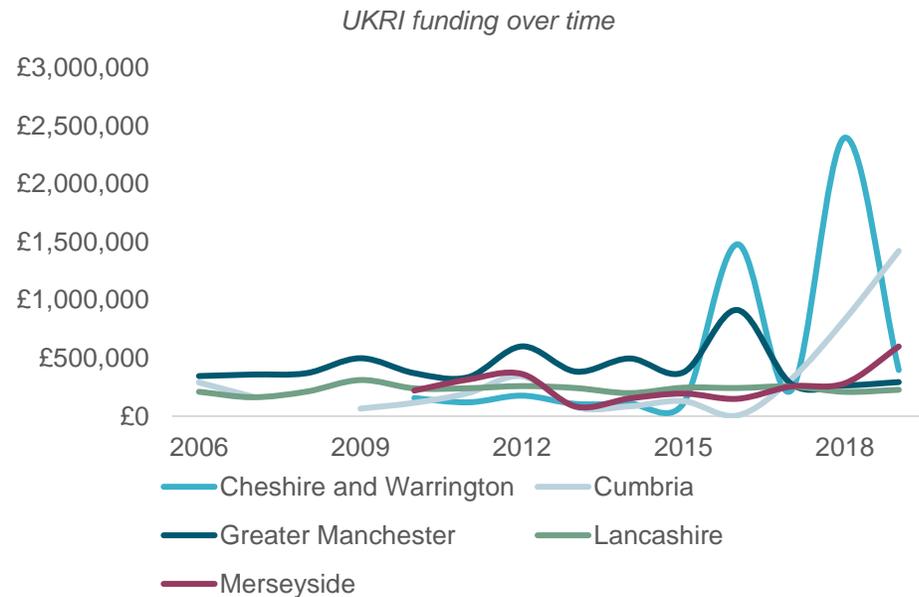
Innovation jobs

The table below shows the number and proportion of innovation jobs in Cheshire and Warrington, and comparators. Jobs in innovative sectors (including high-tech manufacturing, science and technology) at 5.0% of total employment is similar to the England average and higher than the regional average of 3.9% in 2020. In Cheshire East, 7.2% of jobs are defined as innovative.

The map shows that innovation jobs are highly concentrated in certain localities, such as Alderley Park, Trident and Hurdsfield industrial estates, and potentially amongst a relatively small group of businesses.

Area	Number of jobs	% of workforce
Cheshire East	14,025	7.2
Cheshire West and Chester	5,505	3.3
Warrington	5,670	4.1
Cheshire and Warrington	25,900	5.0
North West	130,100	3.9
England	1,320,500	5.1
Greater Manchester	50,700	3.7
Enterprise M3	69,395	9.4

Source: ONS Business Register and Employment Survey (BRES) (2020) See the end of the pack for definitions for knowledge based sectors, STEM professionals and innovation jobs.

Rising public R&D expenditure but decline in other streams

UKRI funding over time

Legend:
- Cheshire and Warrington
- Cumbria
- Greater Manchester
- Lancashire
- Merseyside

Cheshire and Warrington has attracted large amounts of public innovation funding in recent years, including £4m of UKRI funding in 2016 and 2018. UKRI funding per worker in 2019 was higher in Cheshire and Warrington (£7.6) than in Greater Manchester (£2.1), Lancashire (£3.4) and the UK average (£5.1). In the latter year, it was the 2nd highest recipient in the country (out of 40 NUTS2 areas). An arm of this funding is through Innovate UK, which has experienced a per worker increase of 403.6% in the past five years, relative to the England average of 81%.

R&D expenditure from businesses has fallen by almost a third over the past five years (31.4%), compared to the England average of a 6% increase, but remains higher at £1,772 compared to £970. Expenditure from Higher Education institutions has also fallen but by a smaller 3.8%. This is in contrast to Greater Manchester which has seen increases in these R&D channels.

The fall in business spend may be caused by AstraZenca and Shell moving activity out of the sub-region. However, the sub-region has developed new innovation businesses at Alderley Park and Birchwood.

Metro —— Dynamics

Venture capital investment

This chart shows venture capital investment per job in Cheshire and Warrington, Greater Manchester, the North West and the UK. This shows that investment in the sub-region is high and has been rising.

Venture capital investment per worker has been steadily rising since 2015, is above the UK average, and now represents the highest per worker spend in the North West. In 2019, venture capital investment per worker was £235, which was higher than Greater Manchester (£51) and the averages for the North West (£59) and the UK (£60).

Source: Crunchbase (2020)

Metro —— Dynamics
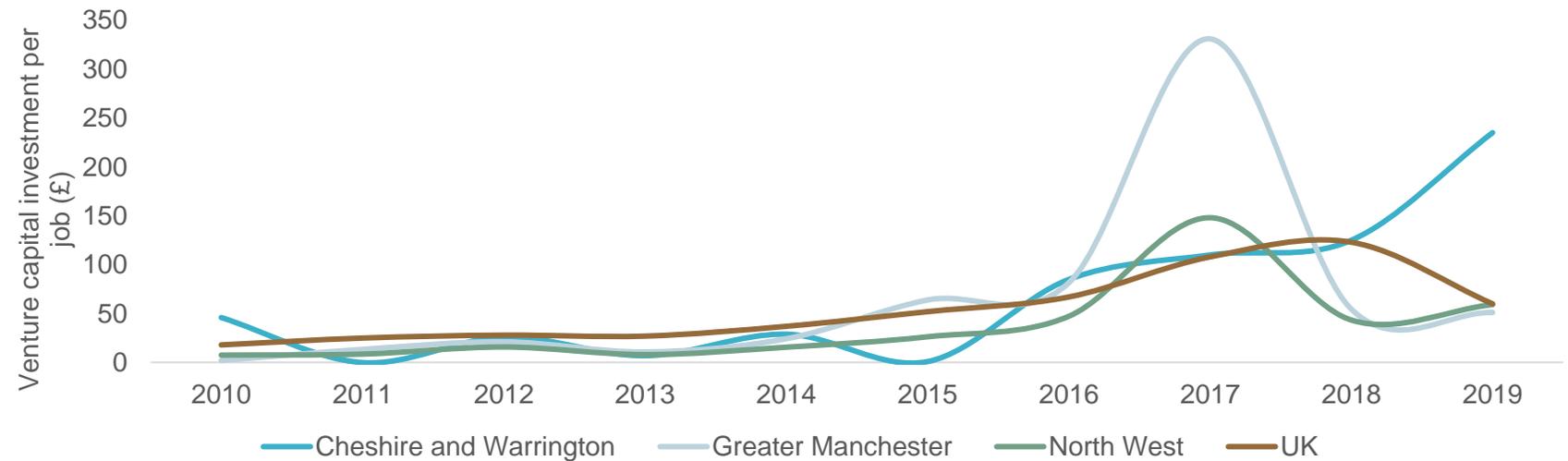
Higher Education IP income

The charts below show Higher Education IP income across Cheshire and Warrington and Greater Manchester. This shows that IP income is significantly higher in Greater Manchester and that there is a lot of variation in Higher Education IP income in the period shown.

Cheshire and Warrington

Greater Manchester

Source: HESA (2014-18). Data not available for EM3.
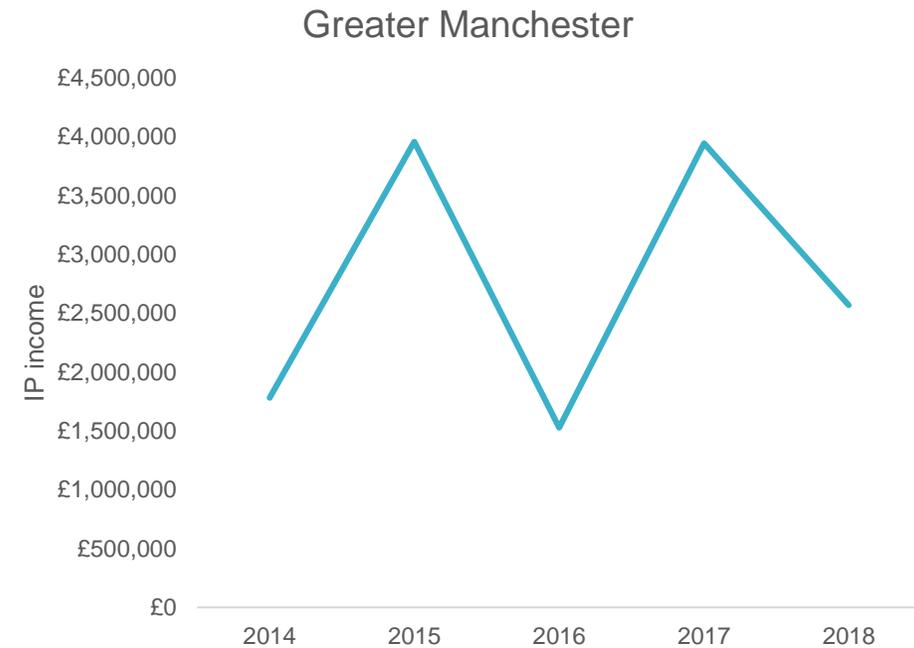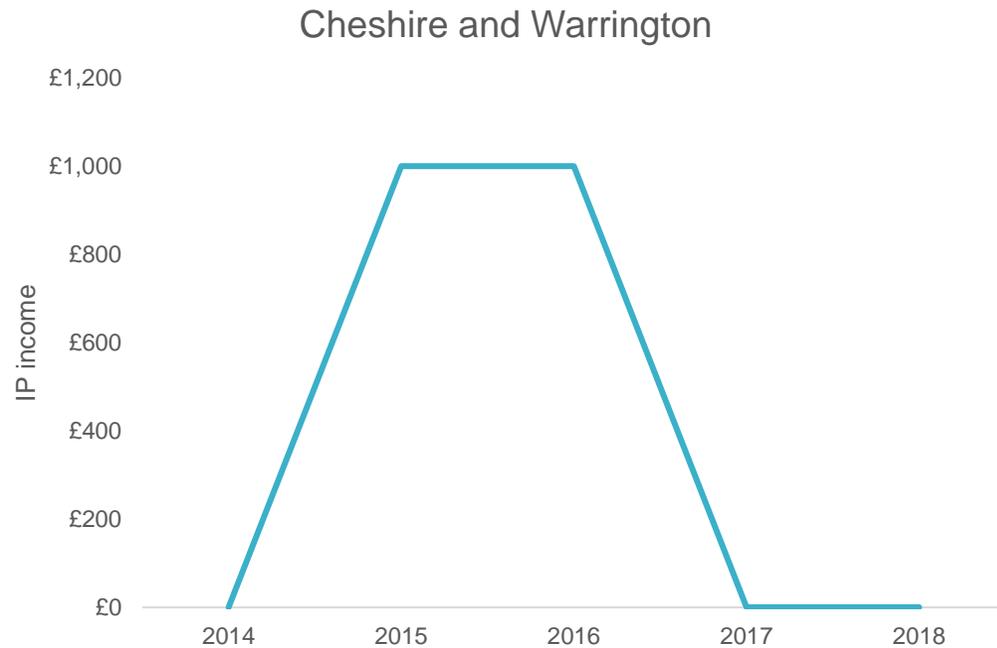
Overseas trade links may bring vulnerability to external events

Cheshire and Warrington's strong links with EU and global trade have seen it play a role in global supply chains, in particular linked to its major manufacturing sectors such as automotive. The sub-region has had a historic reliance on the EU for its trading activity, where prior to Brexit almost 50% of its trade was with the EU.

Using the most recent trade data available for services (2019), goods and services export growth between 2016 and 2019 is higher in Cheshire and Warrington (13.6%) than the England average (7.9%). Trade in services have seen rapid growth of 49.1% over this time period, which is strong compared to the England average of 24.4%.

Using the most recent trade data available for goods (2020) shows that the export of goods since 2016 has been on a downward trajectory, falling by 13.5%, compared to the English average of 3.2% and 2.7% fall in Greater Manchester. The latest data is for the whole of 2020, showing that the Covid-19 pandemic, national and international lockdowns and EU exit uncertainty appear to have had a disruptive effect on trade. The volume of imports and exports have fallen by 15.9% between 2019 and 2020, although this may be temporary.

Export and imports of goods in Cheshire and Warrington

Source: HMRC (2020). See the end of the pack for definitions for how local exports are calculated.
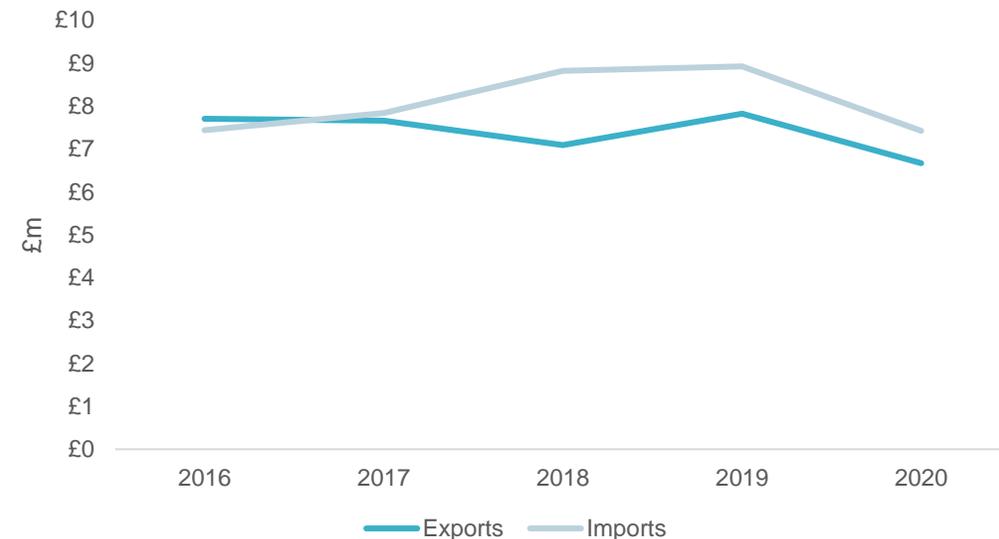
Fall in service exports resulting from a slump in financial services trade in the EU

Service exports by sector (£m)

- Accommodation and Food Services
- Administrative and support service activities
- Financial and insurance activities
- Information and Communication
- Manufacturing
- Non-manufacturing production services
- Other services
- Professional, scientific and technical activities & Real estate
- Retail (excluding motor trades)
- Transport and storage
- Wholesale and motor trade

Service exports by destination (£m)

— EU — Rest of world

The charts to the left show service exports by sector and by destination in Cheshire and Warrington. From 2017 to 2018, there was a rise in Cheshire and Warrington's service exports, increasing from £2.6bn to £3.2bn (around 25% increase). This was primarily driven by the increase in service trade of financial and insurance activities, growing by 84% between 2017-2018 (increases in both the EU and the rest of the world).

Post 2018, trends in service trade reversed, with a fall in total exports by 6% between 2018-2019. Similarly, overall trends were largely driven by Cheshire and Warrington's largest service trade sector of financial and insurance activities, which observed a 6.5% fall in trade within the same period. In terms of trade destination, whilst exports to the rest of the world remained stable, there was a fall in EU services trade by 14.6%. This trend appears to persist through to 2020, where financial services trade declined further, with both a fall in trade with the EU and the rest of the world. Interestingly, possibly highlighting the global need for digital solutions in a modern remote working landscape, the only sector to grow in trade in 2020 was information and communication, increasing by 261%.

The trends observed substantiate some of the national predictions around UK trade in financial services moving away from the EU towards other markets during/post the Brexit transition period, although it is likely that Covid-19 also compounded the fall in service exports trade in 2020.

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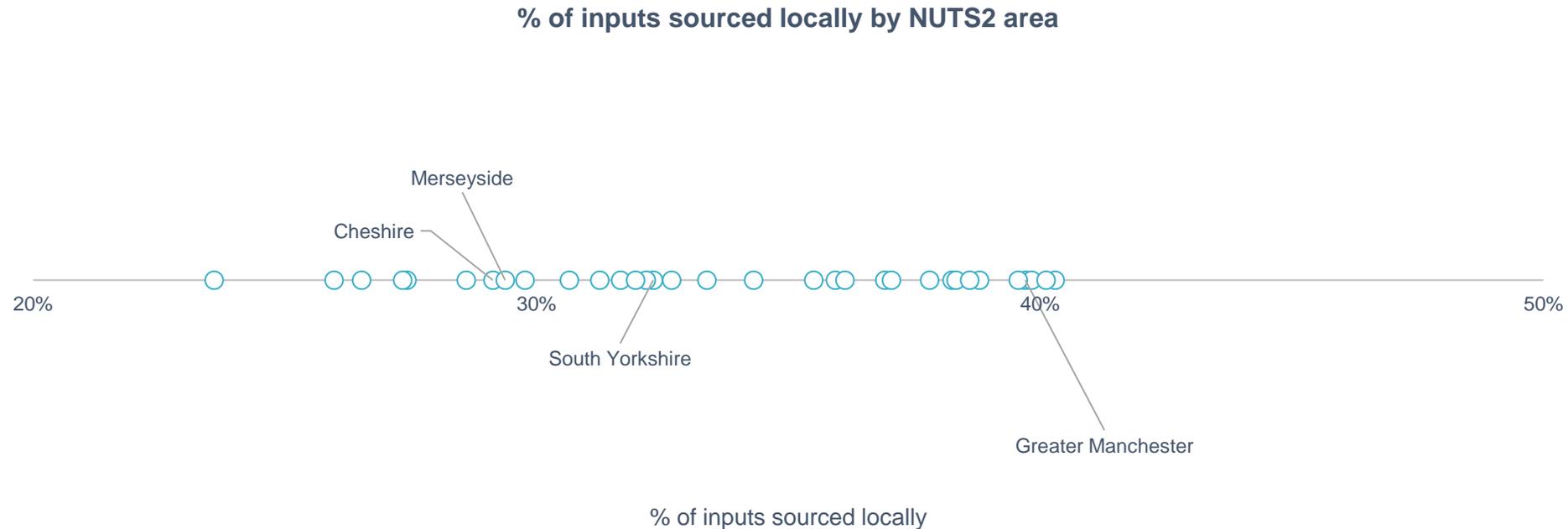
Source: ONS international trade in services

Supply chains

The chart below shows the proportion of inputs sourced locally by NUTS2 sub-regional area. In Cheshire and Warrington, 29.1% of inputs are sourced locally, which is the 7th lowest in the country and the highest proportion that are imported from overseas (25%) out of 33 NUTS2 sub-regions in the country.

This is likely to be caused by the nature of sectoral activity in the economy and the presence of successful manufacturers that rely on global supply chains. Firms in this sector have often operated a 'just-in-time' model using international suppliers to source components as and when they are needed.

This global system can be sensitive to global shocks where the expediency and reliability of imports become disrupted. The past few years have seen multiple shocks: Covid-19, war in Ukraine, Suez Canal shipping delays.

% of inputs sourced locally by NUTS2 area

% of inputs sourced locally

Source: HMRC and ONS BRES (2015)

Metro ——— Dynamics

Supply chains

The chart below shows the proportion of inputs sourced locally by sector in Cheshire and Warrington. Information services has a particularly high proportion of inputs that are sourced locally (85%). Pharmaceutical activities has a low share of inputs that are sourced locally.


Legend: ■ % from local   ■ % from elsewhere in UK   ■ % imported

Metro —— Dynamics
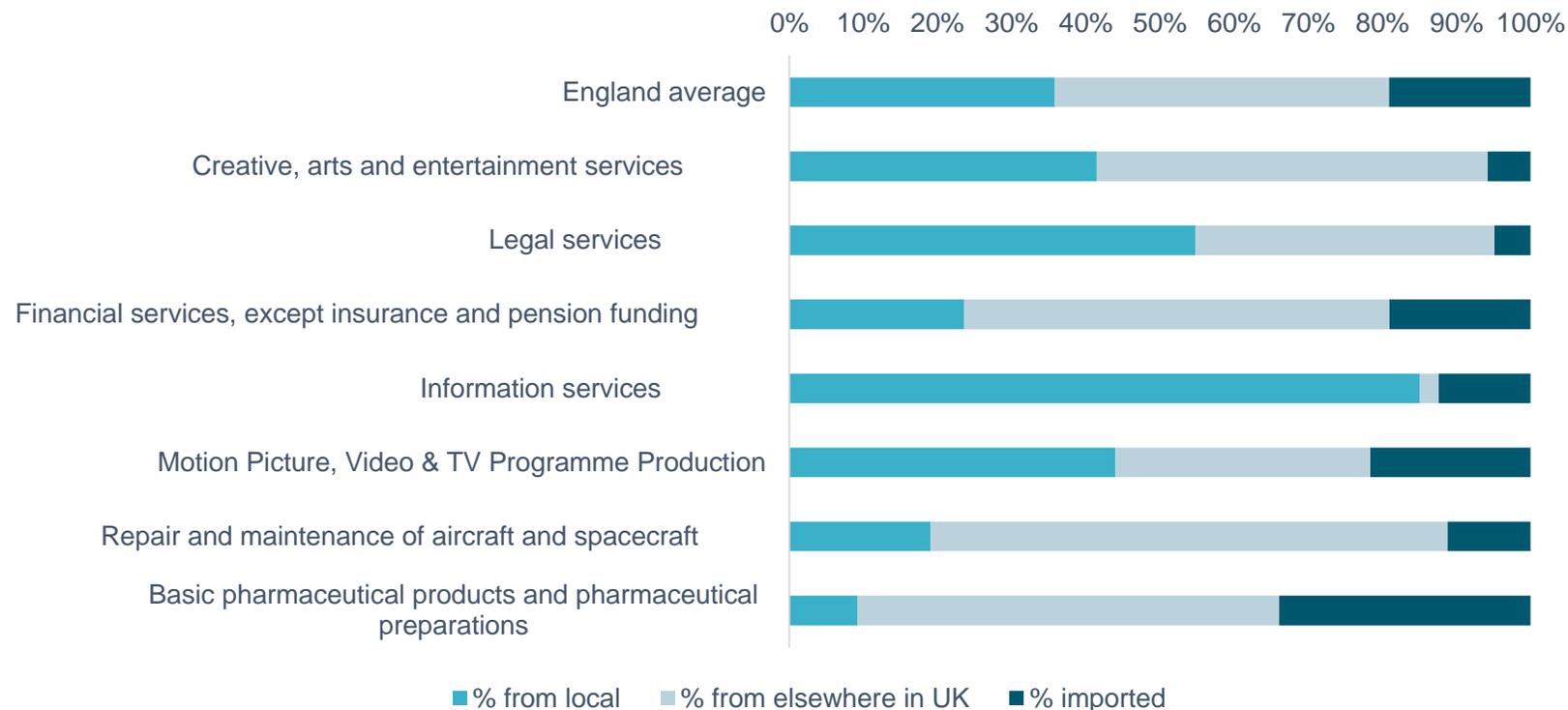
Changes in work patterns have reduced demand for space

The 'Zoomshock', shown in the map here, models changes in working patterns as a result of increased remote working. It predicts a large scale outflow of workers from some of the main urban centres including Chester, Ellesmere Port, Macclesfield, Warrington and Knutsford, as well as areas where there are large business parks, such as Alderley Park; this is because some workers who used to commute into urban centres for work, now work from home. Whereas, in some rural areas there are larger inflows, as workers who used to commute into other areas, now work from home.

As there has been an outward flow from main centres, commercial property vacancies have increased across office and retail property types (see the charts on the next pages). This is particularly true for the latter which saw rates double since the start of the pandemic up to 4.4% in 2021 Q4.

Although nationally and regionally there has been an increase, this has not been at the scale observed in Cheshire and Warrington. This vacancy increase is in tandem with a loss of 1,000 retail and wholesale employee jobs between 2019 and 2020 (1.2% fall), which is relatively less than the national decline of 3.1%.

In contrast, there has been a rise in demand for warehousing and distribution space. Recent analysis by the ONS on trends in logistics shows that transport and storage has been the fastest growing sector in the UK over a two year and ten year horizon. This shows an increase in business units used by this sector in the sub-region: 2.8% (2010) to 3.7% (2021) in Cheshire East; 2.9% to 5.0% in Cheshire West and Chester; and 4.4% to 5.7% in Warrington.

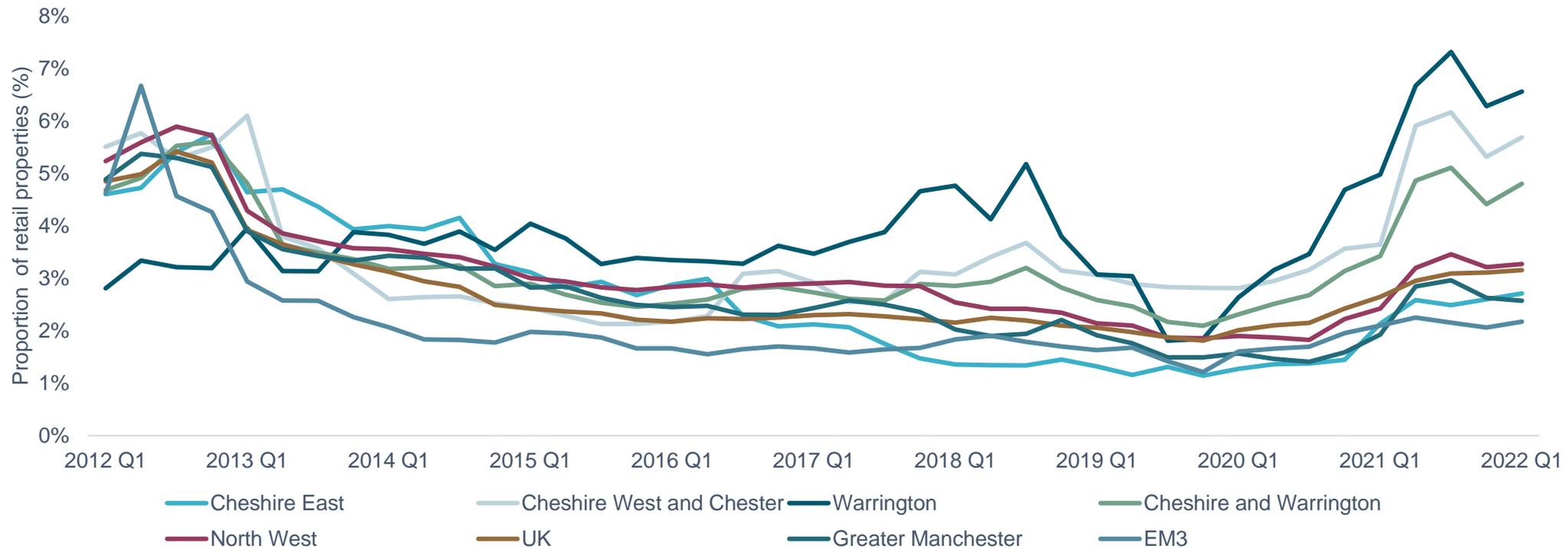*Source: University of Sheffield (2020)*

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Metro —— Dynamics
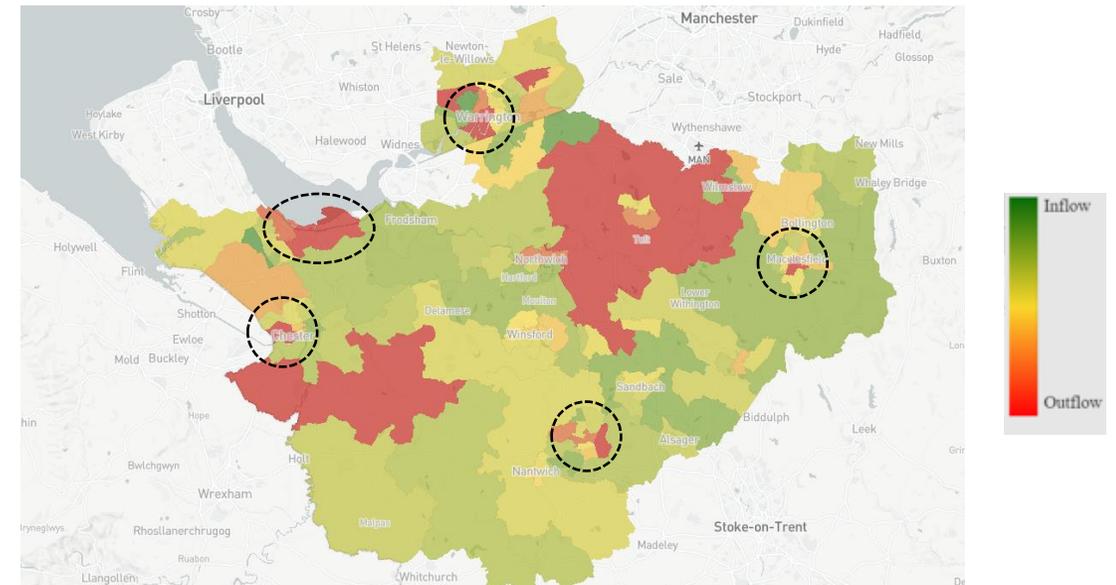
Office vacancy rate

The chart below shows office vacancy rates in Cheshire and Warrington and comparators. Vacancy rates had generally fallen for all places, including Cheshire and Warrington until the start of the pandemic, where they have increased. Although vacancy rates have increased for all places, there has been a greater increase in Cheshire and Warrington than the average for the North West and the UK.

Source: University of Sheffield (2020) and CoStar (2022)

Metro ——Dynamics
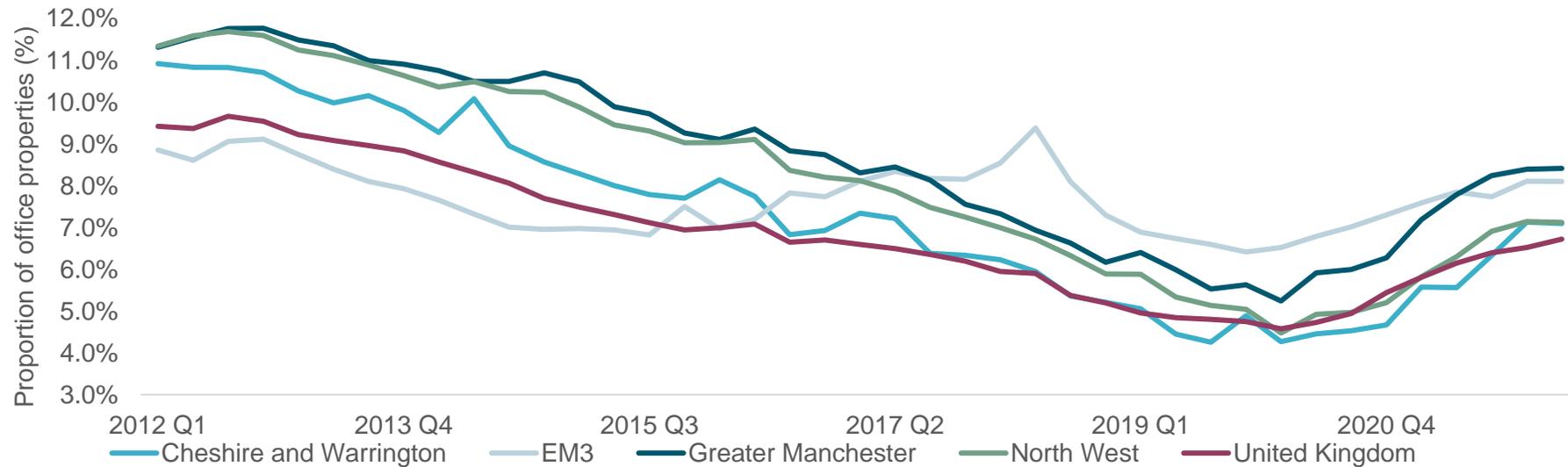
Retail vacancy rates

The chart below shows retail vacancy rates in Cheshire and Warrington and comparators. Since the pandemic vacancy rates have increased faster in Cheshire and Warrington than the regional and national averages. This is driven by Warrington and Cheshire West and Chester.

Legend: Cheshire East, Cheshire West and Chester, Warrington, Cheshire and Warrington, North West, UK, Greater Manchester, EM3

Source: Costar (2012-22)

Town property vacancies have varied over the pandemic

Geography	Vacancy rate	% change (Q1 2020 - Q2 2022)	Market rent	% change (Q1 2020 - Q2 2022)	Market yield	% change (Q1 2020 - Q2 2022)
Macclesfield	5.6%	3.5%	£12.2	4%	7.7%	-0.2%
Chester	7.6%	4.6%	£23.3	-9%	8.0%	0.4%
Crewe	0.9%	-1.0%	£9.1	6%	7.3%	-0.1%
Ellesmere Port	5.2%	3.7%	£10.6	-2%	7.1%	-0.1%
Northwich	5.0%	-2.7%	£19.3	-6%	7.6%	0.2%
Warrington	4.5%	1.6%	£12	0%	7.3%	0.0%
Winsford	1.2%	-0.5%	£7.8	9%	7.2%	-0.2%

The table to the left presents property indicators for Cheshire and Warrington towns.

Chester has the highest vacancy rate out of the 7 towns and has seen the steepest increase over the pandemic period.

Winsford has weathered the pandemic well, with the second lowest vacancy that has declined over the pandemic period, and growing market rents (although they remain the lowest of any town).

Crewe has also performed relatively well, with the lowest vacancy in the subregion and the second largest fall in rates over the pandemic period, with market rents also observing an uptick.

Ellesmere Port appears to also have challenges, with the second highest rise in vacancy and declining market rents.

Source: CoStar (2022)

Metro ——— Dynamics

Industrial and office property space

The table below shows property vacancy rate, availability rate and market rent per square ft in Cheshire and Warrington. All three local authority areas have a higher vacancy rate in office properties relative to the UK average. Market rents per square ft are lower in Cheshire and Warrington relative to the UK average.

	Industrial Property			Office Space		
	Availability Rate	Market rent per sq ft	Vacancy Rate	Availability Rate	Market rent per sq ft	Vacancy Rate
Cheshire East	6.3	£6.6	3.7	8.4	£16.8	6.8
Cheshire West and Chester	8.8	£6.1	2.5	13.1	£14.3	7.3
Warrington	4.6	£7.6	1.4	10.4	£14.8	7.7
Cheshire and Warrington	7.1	£6.9	3	10.1	£15.4	7.1
North West	4.8	£6.4	2.5	9	£16.7	7.1
UK	5.1	£7.5	3.2	9.5	£27.1	6.7
Greater Manchester	3.4	£6.6	2.2	10.7	£19.8	8.4
EM3	8.3	£11.2	4.5	10.9	£22.8	8.1

Source: Costar (2012-22)

Metro —— Dynamics

High street recovery

Using Cenbtre for Cities analysis, which is only available for Warrington,the left-hand chart below tracks high street spending in Warrington high street compared to the average. Spending is currently slightly above where it was pre-lockdown. The right-hand chart below tracks how the use of Warrington high street has changed during the course of the pandemic. Currently the usage levels are in line with pre-lockdown levels.
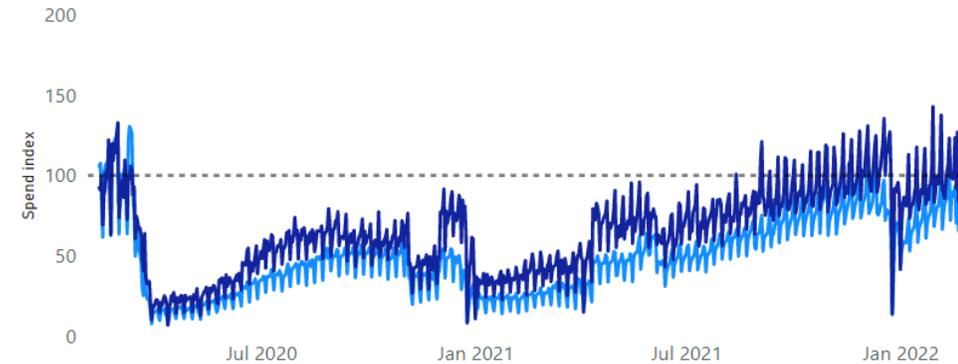

Source: Centre for Cities (2022). Note Warrington is the only local authority available.

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Metro —— Dynamics

Mobility and use of spaces

The charts below show how the movement of people, and usage of different types of spaces, has changed during the course of the Covid-19 pandemic. Usage of workplaces are noticeable still below pre-Covid baseline levels.

● Cheshire East ● Cheshire West and Chester ● Greater Manchester ● United Kingdom ● Warrington

Source: Google Mobility (2022). Data not available for EM3.

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Metro ——— Dynamics
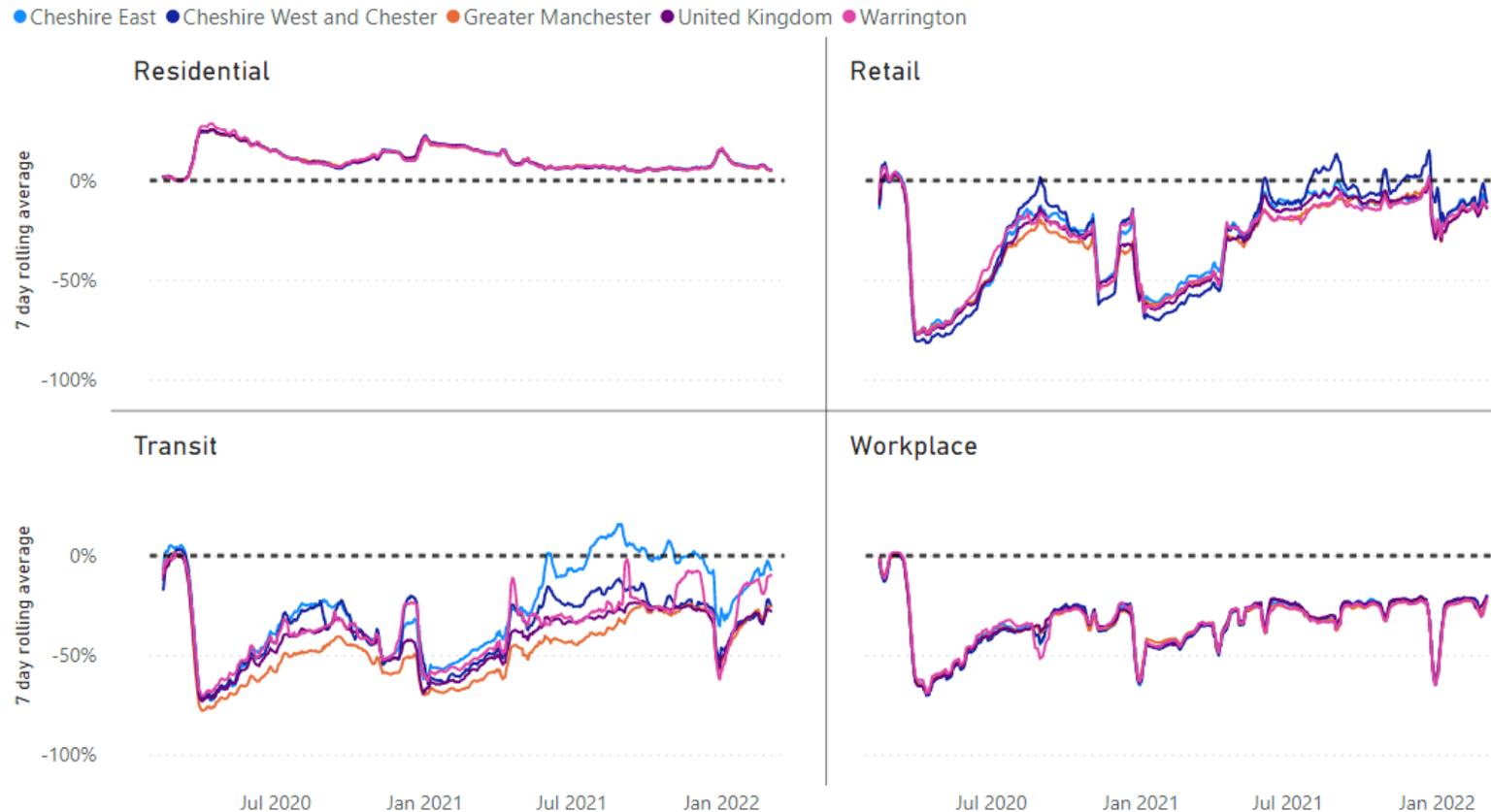
Access to public transport at local level

The maps below show the number of services (including primary & secondary schools, Further Education, GP surgeries, hospitals, large employment centres and town centres) with an average journey time longer than the national average for Cheshire and Warrington (left) and the EM3 area (right). Greater Manchester has better access, with many areas having a faster journey time to all services relative to the national average. Cheshire and Warrington has a similar profile to EM3. Much of the sub-region has some of the worst journey times to services in the country, particularly rural areas, whilst larger towns in close proximity to conurbations have better access.
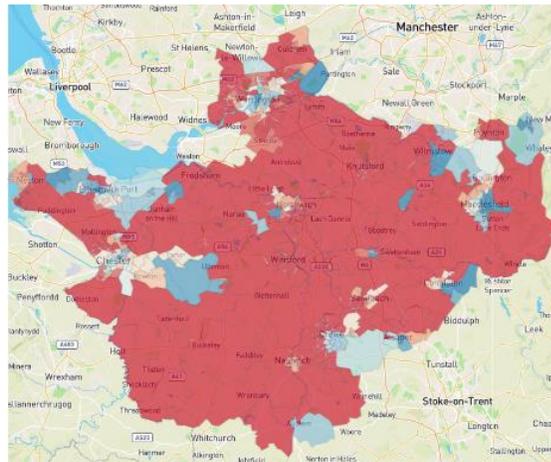
Greater Manchester

Number of services (out of seven) with a mean journey time by public transport longer than the national average

0 (Best - no journey times to services longer than the national average)
1
2
3
4
5
6
7 (Worst - journey times to all seven services above the national average)

*Source: National Audit Office (2020)*

Metro —— Dynamics
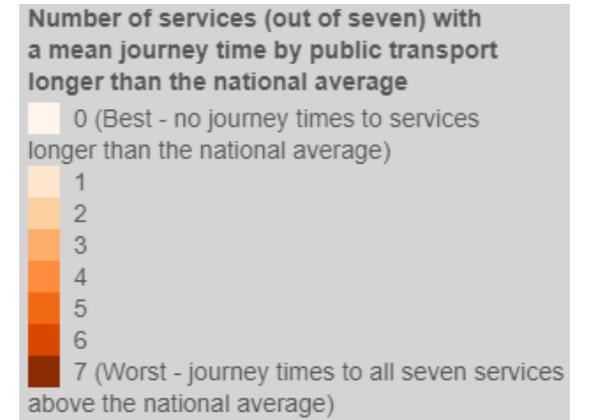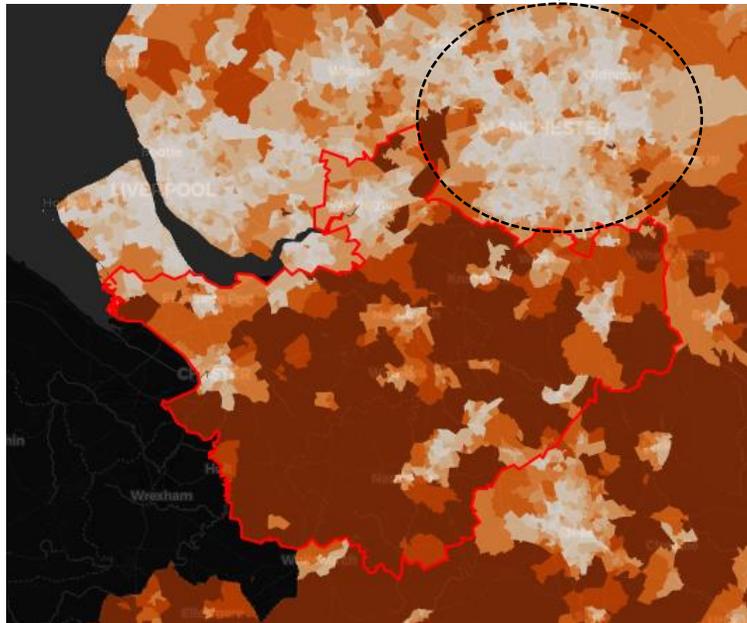
Jobs accessible by public transport

The maps show jobs reachable within 60 min of public transport for each job within a five mile radius for the sub-region and comparators. Similarly to the previous map, there is low connectivity in many rural areas in Cheshire and Warrington.

EM3 reflects a similar job access via public transport as Cheshire and Warrington, where large rural areas have lower access, however places around Whitechurch, Winchester, Odiham, Guildford and Woking have higher access. Greater Manchester generally has higher access to jobs via 60 min of public transport, although there are areas in amongst high access areas, with low public transport connectivity.
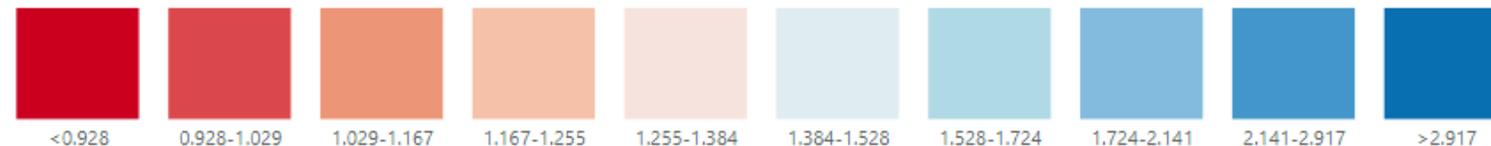

Cheshire & Warrington
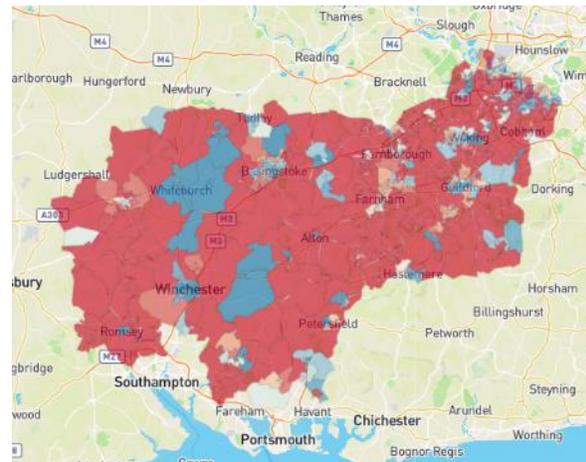
EM3 LEP
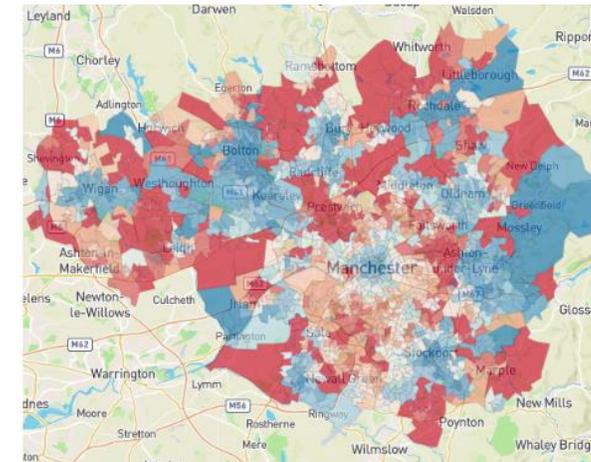
Greater Manchester

Jobs reachable within 60 min of public transport for each job within a five mile radius

<0.928	0.928-1.029	1.029-1.167	1.167-1.255	1.255-1.384	1.384-1.528	1.528-1.724	1.724-2.141	2.141-2.917	>2.917

Source: Onward UK (2021)

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Metro —— Dynamics

Digital coverage

The map below shows gigabit coverage across Cheshire and Warrington. Some of the towns, such as Macclesfield, Ellesmere Port and Crewe have no gigabit coverage, as well as many rural areas including west of Wilmslow, Northwich, Macclesfield and the area between Sandbank and Alsager with no gigabit coverage.
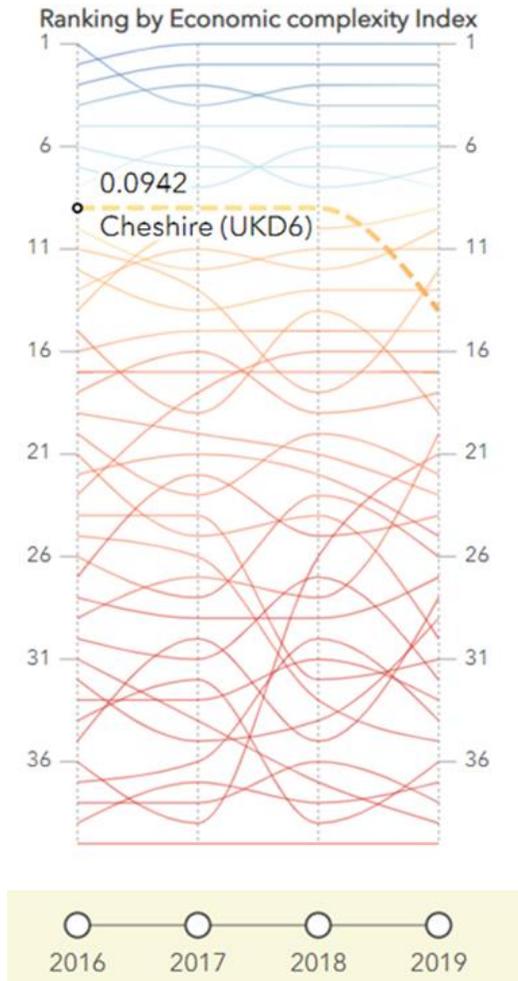
Source: Connected Nations (2021)
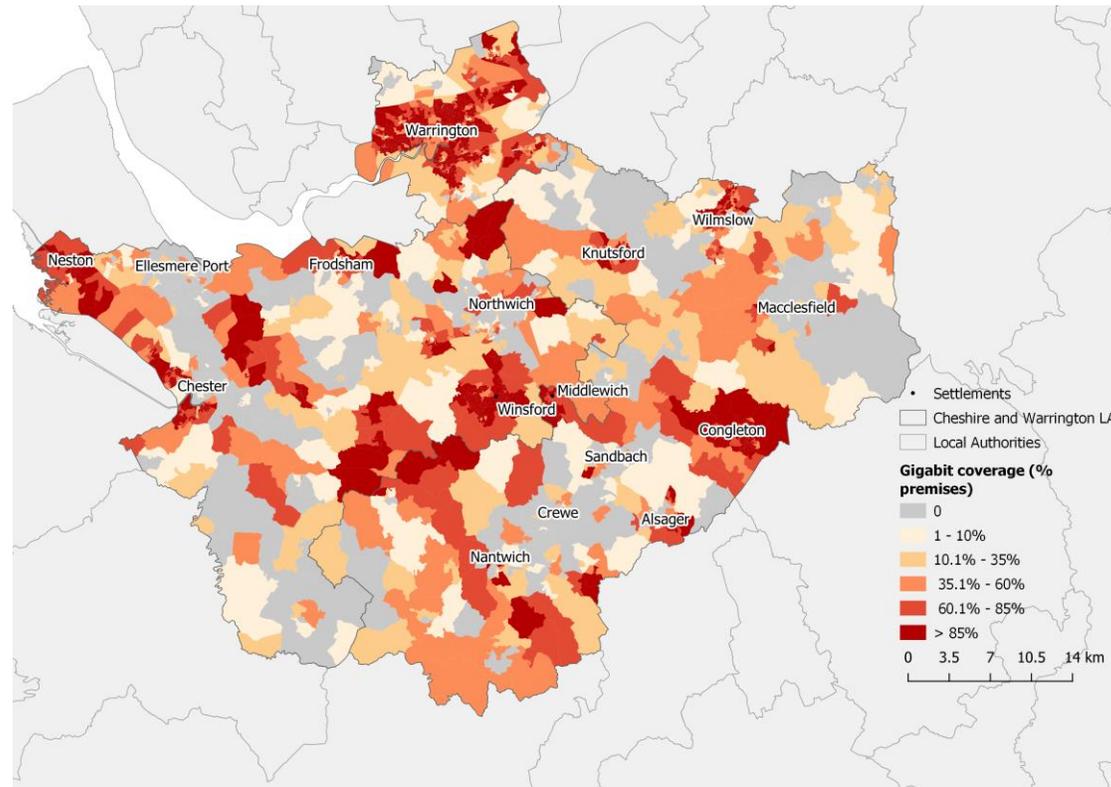
Deep dive: Complexity, innovation and productivity

Metro —— Dynamics

Summary

The future for productivity in the area will, in no small part, depend on the amount of highly-productive knowledge-intensive economic activity. While this cannot be observed directly, economic complexity has been developed as a metric to capture it, by recognising co-locations of key subsectors in places with high knowledge activity.

A fall in the economic complexity of Cheshire and Warrington raises questions as to whether the economy is losing valuable knowledge intensive activity. The strong relationship between economic complexity and productivity could pose a risk to productivity growth, with the fall in complexity between 2018 –19 concurring with a productivity decline, despite the national trend of growth.

This has coincided with a fall in Innovate UK funding (despite a previously growing trend) and a fall in business R&D expenditure in recent years. There have also been shifts in the industrial composition of Cheshire and Warrington, where over the past five years, there has been a loss of five specialisms in the top 50 most complex sub sectors; this is in addition to the reallocation of labour towards subsectors found in wholesale and retail that possess less knowledge intensive activity.

Ranking by Economic complexity Index

0.0942
Cheshire (UKD6)

2016   2017   2018   2019

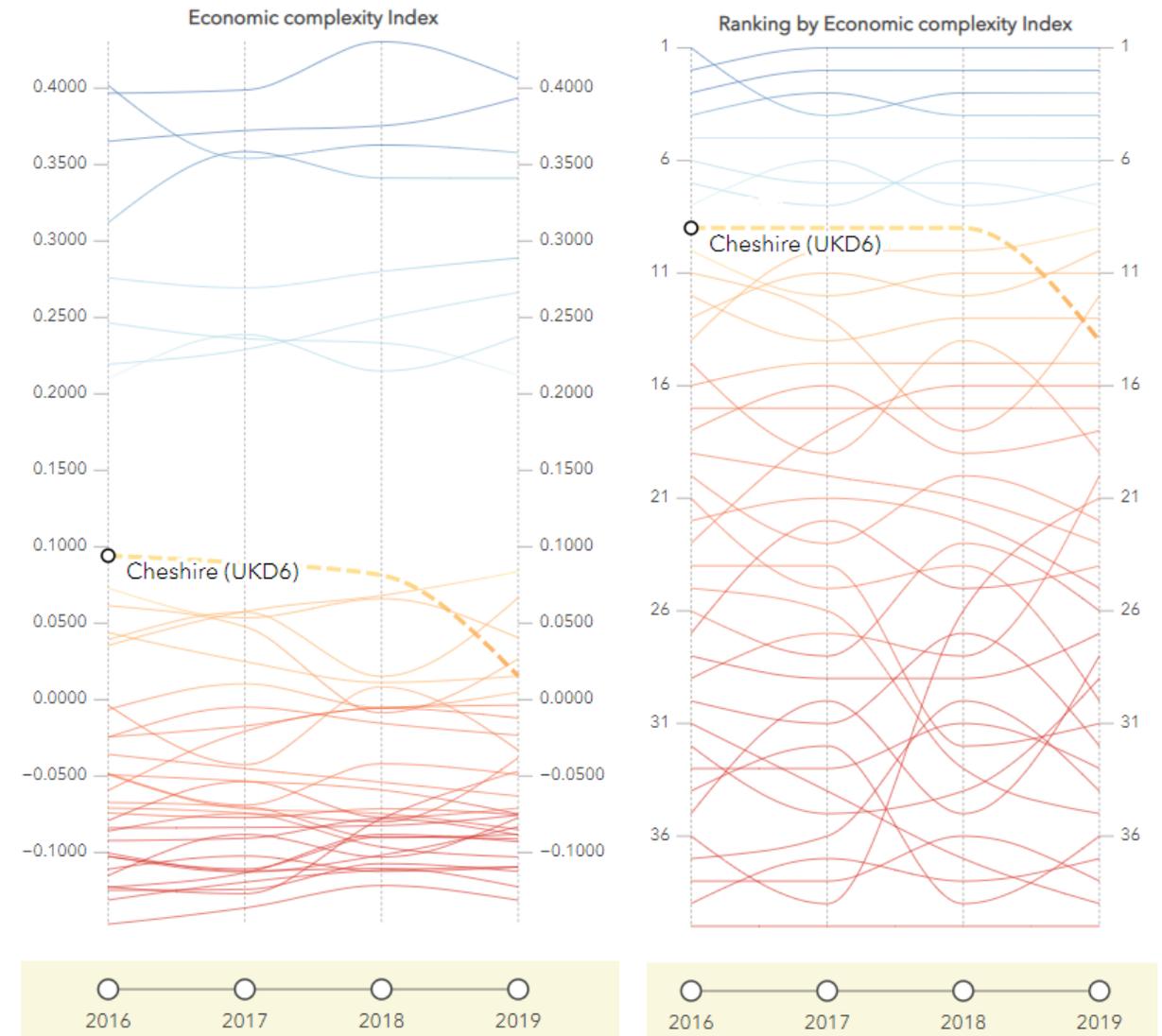*Source: BEIS/Nesta Research & Development spatial data tool (2019)*

What has happened to economic complexity?

Economic complexity is a measure of how much productive knowledge is contained within the economy. It captures which places have the combination of specialisms indicative of highly productive economic activity. It does this by analysing all places and their existing specialisms to create a matrix. Those places where certain subsector specialisms co-locate – often those less commonly found across the country – have much higher complexity scores, reflecting the sophisticated nature of their economy. By contrast, more simple economies tend to have subsectors which interact less with others in the economy, requiring less highly specialised knowledge.
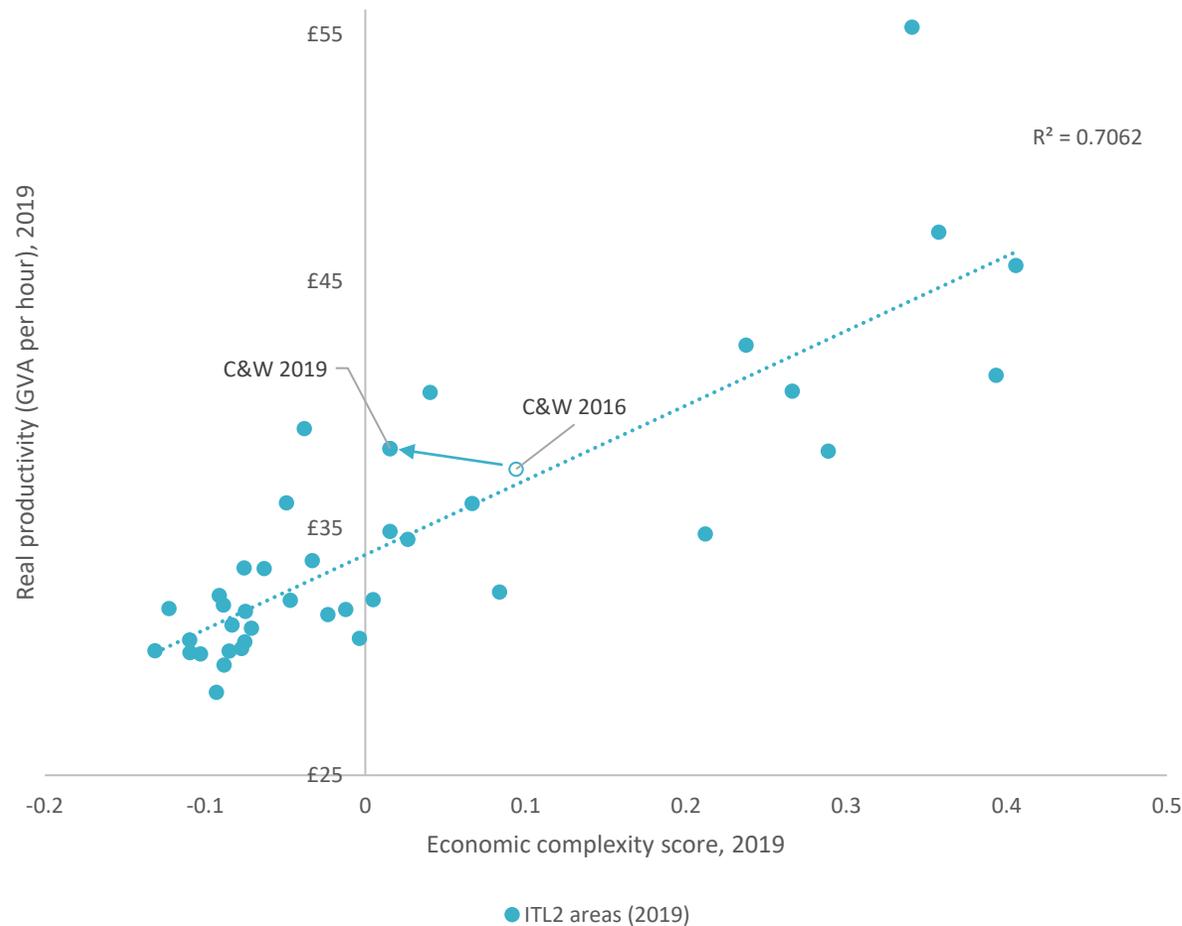
According to Nesta and BEIS, economic complexity in Cheshire and Warrington (shown on the chart as "Cheshire" – the ITL2 region which covers the same area as the LEP) has fallen. The absolute data (left-hand chart) shows that, although the fall was steepest between 2018 and 2019, complexity had been on a gradual downwards trend before this. **Cheshire and Warrington has seen the biggest one-year change (positive or negative) and the biggest three year change of any area over this period**. It is also one of only three places to have seen falls every year.

This means that in relative terms (see right hand chart) Cheshire and Warrington has fallen from 9th place between 2016 and 2018 to 14th in 2019, being overtaken by Great Manchester, Gloucestershire, Wiltshire & Bristol/Bath area, Hampshire, Essex, and Kent.

Economic complexity Index

Ranking by Economic complexity Index

Source: BEIS/Nesta Research & Development spatial data tool (2019)

What does this mean for productivity?

Complexity and productivity in 2019

R² = 0.7062

Real productivity (GVA per hour), 2019

£55
£45
£35
£25

C&W 2019
C&W 2016

-0.2   -0.1   0   0.1   0.2   0.3   0.4   0.5
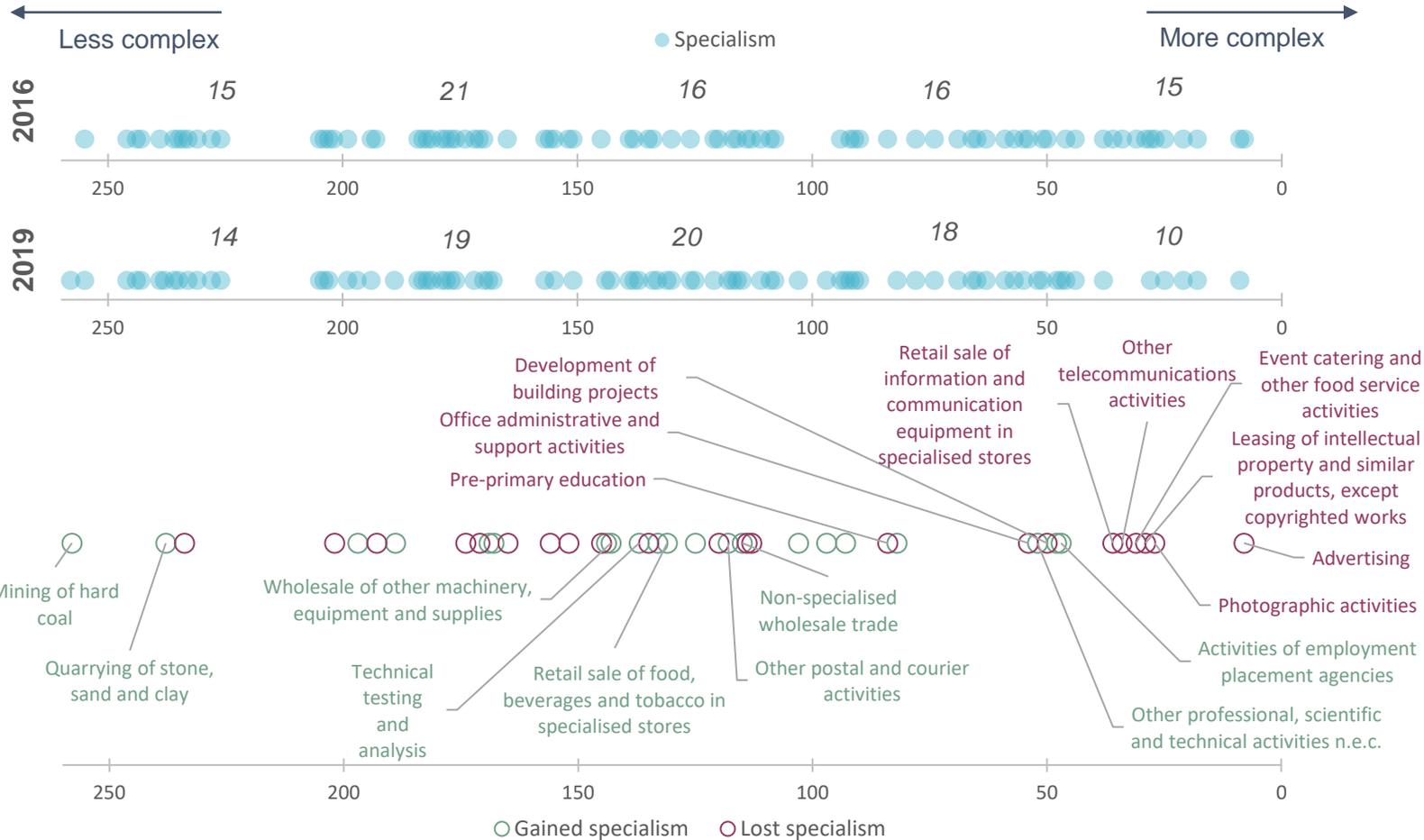
Economic complexity score, 2019

● ITL2 areas (2019)

How concerning is this? **There is a strong, established relationship between economic complexity and productivity**. The chart on the left shows this relationship for ITL2 areas. The high R² value suggests around 71% of the differences in productivity between places can be explained by their different levels of economic complexity. This is especially striking given that the complexity value is built solely from employment shares, with no input to the calculation of how valuable or otherwise those sectors are.

The arrow and labels show the journey Cheshire and Warrington has been on from 2016 to 2019. Real productivity has increased slightly, but complexity has fallen sharply. Whereas in 2016, Cheshire and Warrington was very close to the line of best fit, it has since moved away from it. The concern would be that in the future there may be a correction towards lower productivity in Cheshire and Warrington, with a less complex economy creating less valuable goods and services. Even if this doesn't happen, it will be hard to improve productivity while economic complexity remains reduced.

What is driving the change?

Product complexity rank of specialisms

← Less complex   ● Specialism   More complex →

2016

15   21   16   16   15

250   200   150   100   50   0

2019

14   19   20   18   10

250   200   150   100   50   0

Development of
building projects

Office administrative and
support activities

Pre-primary education

Retail sale of
information and
communication
equipment in
specialised stores

Other
telecommunications
activities

Event catering and
other food service
activities

Leasing of intellectual
property and similar
products, except
copyrighted works

Mining of hard
coal

Wholesale of other machinery,
equipment and supplies

Non-specialised
wholesale trade

Advertising

Quarrying of stone,
sand and clay

Technical
testing
and
analysis

Retail sale of food,
beverages and tobacco in
specialised stores

Other postal and courier
activities

Photographic activities

Activities of employment
placement agencies

Other professional, scientific
and technical activities n.e.c.

250   200   150   100   50   0

○ Gained specialism   ○ Lost specialism

The chart, left, shows the underlying subsector specialisms that drive the complexity calculation. Each subsector is either counted as a specialism or non-specialism, depending on whether its employment concentration is higher or lower than the national average (Location Quotient (LQ) > 1). The charts show the rank of each subsector in terms of its product complexity index (PCI). Comparing 2016 and 2019, the main difference is that Cheshire and Warrington has lost a net total of five sub-specialisms in the top 50 – including advertising, intellectual property, and other telecommunications. These are sectors which are often closely associated with knowledge intensive activity. Events catering – while apparently not as knowledge intensive a sector – is likely to be found concentrated in areas with higher-value businesses. **The de-specialisation of these sectors are a *symptom* of a possibly worrying decline in knowledge intensive activity.** It is not that strategic efforts are automatically needed to get them back, but that their absence may indicate a deeper problem.

Cheshire and Warrington has gained most in the 100-150 bracket – including new medium complexity subsectors in wholesale and retail sectors. This may indicate a reallocation of labour within the LEP towards these sectors, which drive less high-value activity. The LEP has also picked up a couple of low complexity primary production sectors – though these only represent fairly small movements in employment.

There are other high-complexity specialisms where Cheshire and Warrington has maintained a specialism across the period, including management consultancy, accountancy, and some other financial services.

This explains the drop in economic complexity – but what is the evidence telling us about what is happening with other knowledge indicators across the economy?

Innovate UK funding has risen over the past decade, but started to fall back more recently

Innovate UK grant offered (£)

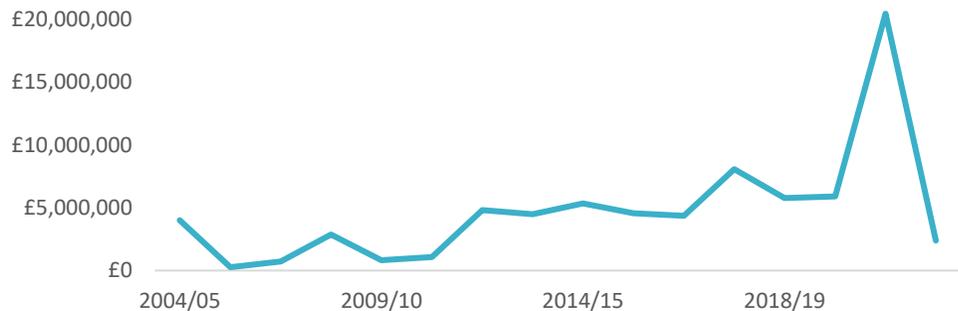## Innovate UK total number of projects

These two charts show Innovate UK grant funding and projects in Cheshire and Warrington between 2003 and 2022. Measuring innovation is complex and there is limited data available that captures this activity, with no up to date patent statistics.

Innovate UK is part of UK Research and Innovation (UKRI) and works with individuals, companies, and other organisations to drive innovation in science and technology with the aim of growing the economy. Analysis of grant funding offered and number of projects over time can provide insight into the levels of innovative activity taking place in Cheshire and Warrington.

Over time, Innovate UK grant funding has been steadily rising in Cheshire and Warrington. From 2010 up to the pre pandemic (2019/20), Innovate UK grant funding has increased by 454%, compared to the national average of 262%. Although grant funding has increased, the number of projects has fluctuated, where since 2014/15, there has been a persistent decline leading up to the pandemic period, indicating that new projects have been of higher value. Interestingly, the fall in economic complexity (2019) coincides with a fall in both Innovate UK total grant value as well as the number of projects.

As we move into the pandemic period, there is an abnormally steep increase in both projects and grants in Cheshire and Warrington. Many of the projects over 2020/21 are Covid-19 continuity grants and innovation funding in response to global disruption and should therefore be seen as an anomaly. Funding over the next year, highlights the short lived nature of this spike, where over half way into 2022, the annual trajectory appears to suggest that funding and number of projects will be below pre-pandemic levels.
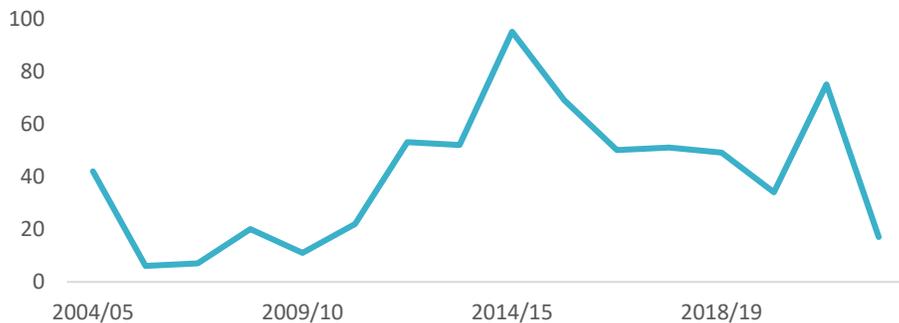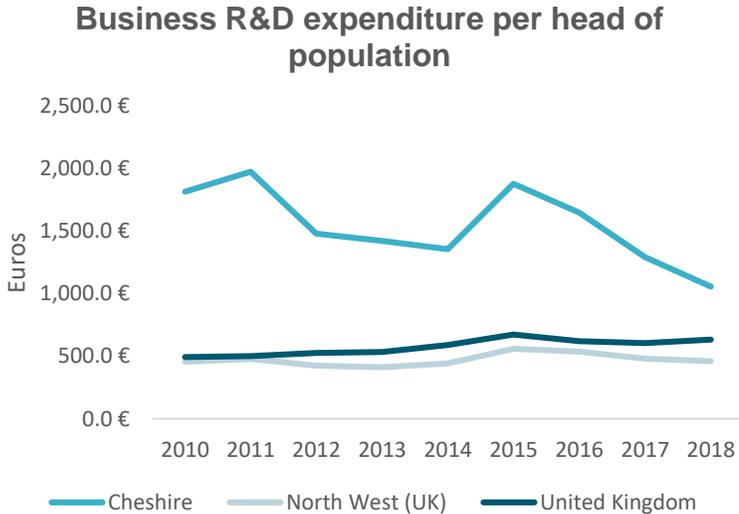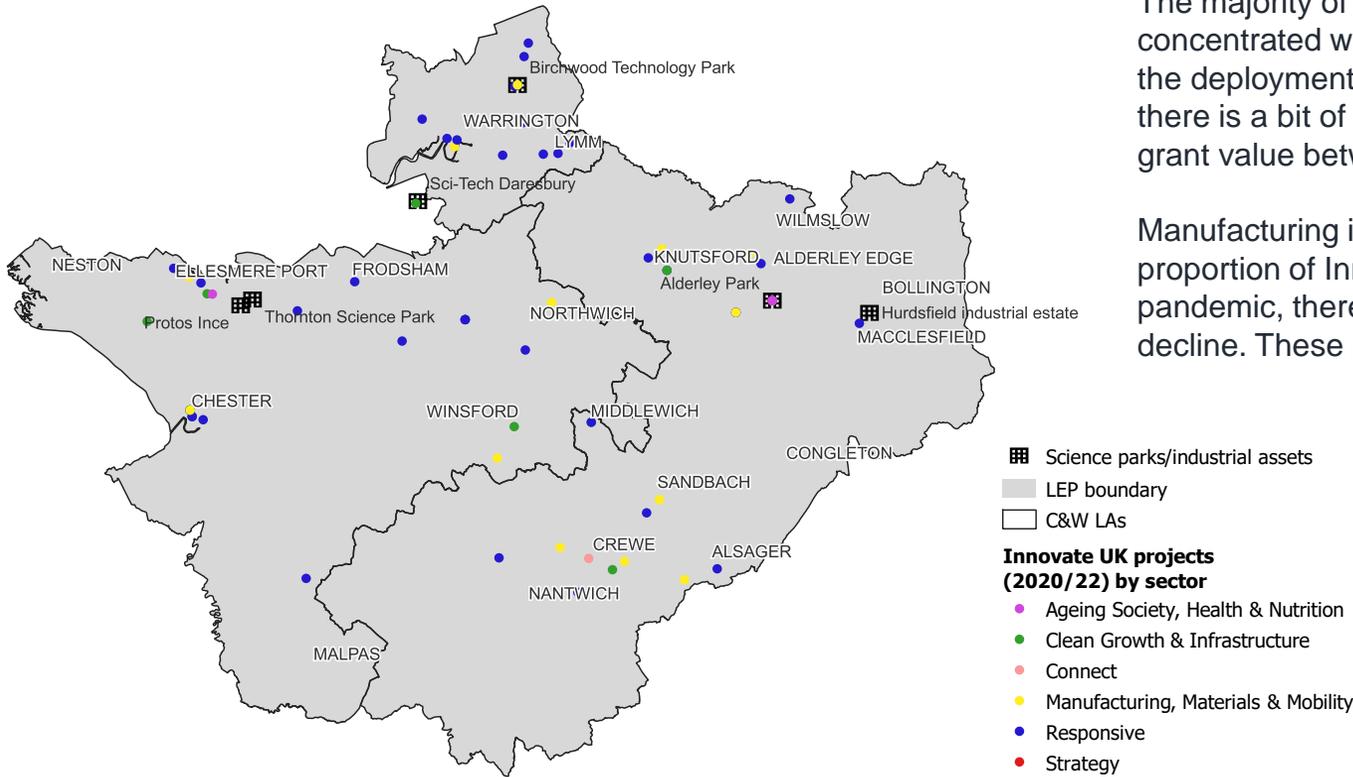
UKRI funding is not concentrated in Science Parks and business R&D expenditure is on the decline

The map highlights where Innovate UK funding projects between 2020 and 2022 are taking place across Cheshire and Warrington. The chart below shows business R&D expenditure per head of population in Cheshire and comparators.

The majority of projects tend to be dispersed across Cheshire and Warrington rather than concentrated within C&W science parks. The largest project by value is from Essar Oil, involving the deployment of energy efficiency technology in industry – based around Ellesmere Port, where there is a bit of a concentration. Clean growth and infrastructure represents the largest sector by grant value between 2020-22 at 35.2% of the total.
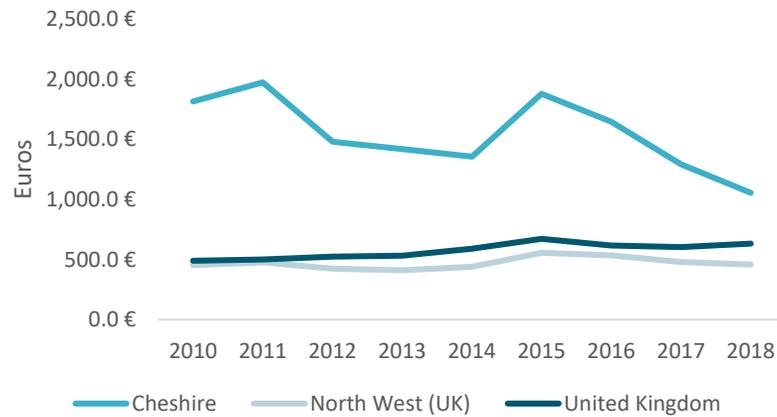
Manufacturing is one of Cheshire and Warrington key sectoral strengths, but represents a lower proportion of Innovate UK grant funding at 14.5% of the total. From 2017 up to the start of the pandemic, there has been a steep fall in grant funding of projects within this sector, with an 87% decline. These projects tend to be concentrated in Cheshire East.

Science parks/industrial assets

LEP boundary

C&W LAs

Innovate UK projects (2020/22) by sector
- Ageing Society, Health & Nutrition
- Clean Growth & Infrastructure
- Connect
- Manufacturing, Materials & Mobility
- Responsive
- Strategy

Business R&D expenditure per head of population

Cheshire — North West (UK) — United Kingdom

Source: Innovate UK grant funding (2022), Eurostat

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Business R&D is falling, but some encouraging signs of more STEM professionals

Business R&D expenditure per head of population

Euros

2,500.0 €
2,000.0 €
1,500.0 €
1,000.0 €
500.0 €
0.0 €

2010 2011 2012 2013 2014 2015 2016 2017 2018

— Cheshire — North West (UK) — United Kingdom

STEM professionals as a % total employment

% employment

8

6

4

2

0

2010 2011 2012 2013 2014 2015 2016 2017 2018 2019

— Cheshire and Warrington — Cumbria
— Greater Manchester — Lancashire
— Merseyside

Private R&D expenditure streams tell a more concerning picture relative to public sources, where since 2015 there has been a persistent decline in levels of business expenditure per head of the population. In 2015, per head expenditure was almost 3 times as high as the UK average, but in the following years the gap has rapidly closed, where in 2018, expenditure per head was 1.7 times higher. Data is only available to 2018, but on the current trajectory Cheshire may have already fallen to at, or below, the national average.

The overall picture around innovation is complex, with not every metric showing concerning signs. The proportion of employment within STEM occupations, having fallen between 2013 and 2019 has now recovered, and remains significantly above all regional comparators.

Sources: Eurostat, BEIS/Nesta

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6. The economy in 2022

National trends (1)

ONS has in the past two years developed sets of experimental and real time data which it is releasing regularly. This is a welcome development. However, much of this is not broken down to NUTS2 (Cheshire and Warrington) level and we are reliant on 2019 and 2020 data instead for much of this report. The Mickledore report highlights a lot of the pandemic data and we have not replicated it here.

In this section we have looked at the recent national economic performance and providing some narrative about what this could mean for the subregion in the next year. These are hypotheses; Cheshire and Warrington data at times runs counter to national trends (see for example the productivity challenges or sector performance) and recovered more quickly from the previous recession than the country overall.

Overall economy

National trends: This is a highly uncertain time for the UK economy. Over the last two decades, it has experienced four shocks: the financial crisis, Brexit, the Covid-19 pandemic and now the war in Ukraine. There is a risk of recession at time of writing (12 May 2022). The latest figures for the UK economy released today show it growing slower than analysts' expectations (0.8% over the previous 3 months compared to a predicted 1%). The UK economy contracted in March, continuing the poor performance of February as manufacturing slowed and the dominant services sector slows down. The cost of living crisis and inflation seeing households reduce consumer spending where possible.

After a decade of stagnating productivity growth and household incomes, the UK is now experiencing high inflation, driven by rising global energy prices. This has caused a fall in real wages and the biggest squeeze on living standards since the 1950s. Demand for consumer goods is weak. There is a tight labour market with high levels of unemployment and low unemployment to vacancy ratios. There are falling unemployment levels without the equivalent increase in employment, indicating that more people are leaving the workforce and becoming economically inactive, particularly those aged over 50. The combination of high inflation and a tight labour market could cause a wage spiral with prolonged high inflation.

Potential implications for Cheshire and Warrington: Cheshire and Warrington is a strong and productive economy, which recovered relatively well from the Great Recession, albeit with minimal productivity gains. At a sub-regional level, it performs well for skills, employment and wages. Many residents will have the security of good jobs and homeownership.

However, the sub-region's people and businesses will likely be impacted by a faltering national economy. This could include:

- Stagnating growth – wages, productivity, jobs
- Reduced business investment and growth; business insolvencies
- Reduced GDHI; consumer spend
- Rising fuel & food poverty

The national tight labour market is reflected in C&W. This risks businesses being unable to recruit the skilled labour they need. The population is ageing in C&W, and there are (as is seen nationally) high levels of people existing the labour market altogether – seen in the economic inactivity figures. This may lead to wage inflation.

National trends (2)

Sustainable

National trends: There is momentum behind the transition to net zero, with this identified as a priority by the Government. How this translates into policy and legislation will be important in the next year (for example, the Financial Times reported that Ministers withdrew plans for "sustainability disclosure requirements" from a new financial services bill). Global instability, increasing energy prices and a reliance on importing oil, gas and liquefied natural gas has highlighted the need for the UK to pivot to alternative forms of energy, including renewables, nuclear and hydrogen, alongside the climate risks highlighted at COP26. The rise in energy prices risks many households falling into fuel poverty, negatively impacting health, wellbeing and prosperity.

Potential implications for Cheshire and Warrington: Cheshire and Warrington has a large energy intensive manufacturing sector and higher than average carbon emissions. It also is the prime location to invest in a decarbonised industrial cluster and is the only region already decarbonising all elements of the energy system. There are major investments through HyNet and the private sector into hydrogen and electric vehicle manufacture, and the sub-region is home to the UK's largest nuclear engineering services cluster. Net zero is a major medium term opportunity for the sub-region, this will require investment now in R&D and to bring new products and services brought to market, new infrastructure and skills.

Inclusive

National trends: The combination of a fall in real wages and rise in the cost of goods and services risks one third of the population being unable to afford the cost of living (according to research by the New Economics Foundation). This is alongside the biggest fall in the value of basic out of work benefits for 50 years. The Resolution Foundation estimate that average pay packets are expected to fall by £1,200 this year. Many households are more likely to fall into poverty and struggle to meet their basic needs. Another key trend is the fall in entry level apprenticeships. Apprenticeships have been seen as a good lever for social mobility, however there had been a recent trend for apprenticeships to go to people in less deprived areas.

Potential implications for Cheshire and Warrington: The cost of living crisis is likely to have an impact on households in more deprived parts of the sub-region, deepening inequality from those who built up savings in the pandemic. With more pressures on household budgets, this could reduce consumer spending, and exacerbate challenges in local high streets that may already be struggling with higher than average vacancy rates. This in turn risks reducing access to services and opportunities for residents.

National trends (3)

Healthy

National trends: The Covid-19 pandemic highlighted the significant health inequalities that exist between places and between different demographics. Health outcomes in the UK are poor and have been declining with falling life expectancy and increasing child obesity. Many working age residents are experiencing long Covid-19, impacting their ability to work, this may in part be reflected in the growing economic inactivity levels.

Potential implications for Cheshire and Warrington: In some parts of the sub-region, there are low and falling health outcomes, and low healthy life expectancy. There are signs of rising obesity. All this increases the likelihood of residents leaving the workforce due to poor health, which exacerbates existing challenges around an older and ageing workforce, and insufficient flow of workers to meet demand.
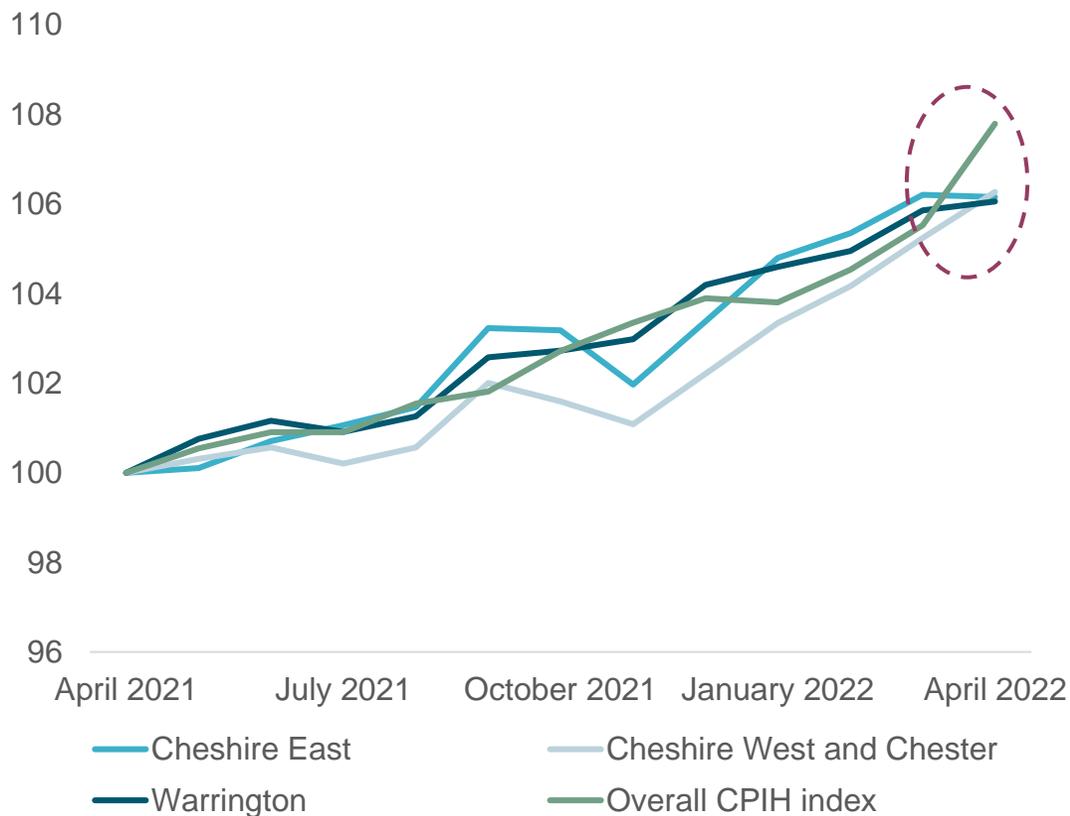
Growing

National trends: Trade in the UK has failed to recover in line with other economies. There are challenges for small businesses to adapt to new custom and export rules, and a lack of capacity in UK bodies to assess quality and safety. With the current levels of uncertainty in the economy, business confidence has fallen, which may reduce investment in innovation, technology and skills. Since the pandemic, there has been a shift to remote and hybrid working, with expectations that the demand for office space will continue to fall. There have been record increases in house prices with high demand in less dense areas,

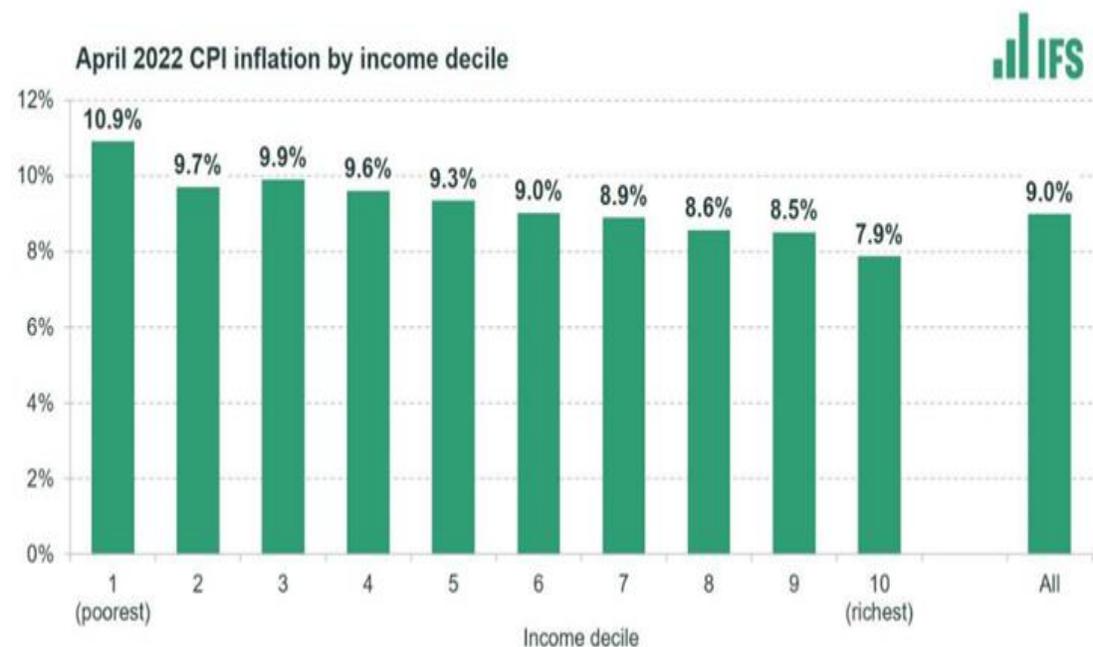indicating that people are choosing to live and work in a different way.

Potential implications for Cheshire and Warrington: There is evidence in Cheshire and Warrington that although there has been strong growth in the export of services in recent years, there has been a recent decline in goods exports. Continued disruptions in global supply chains could be problematic for businesses in the sub-region due to the presence of OEMs with global supply chains and a high reliance on inputs to production from outside of the UK.

Inflation is rising faster than earnings in the subregion, putting particular pressure on poorer households

*Median pay vs CPIH index (Apr 2021 to Apr 2022)*

Legend:
- Cheshire East
- Cheshire West and Chester
- Warrington
- Overall CPIH index

CPI inflation by income decile (Apr 2022)

April 2022 CPI inflation by income decile

Income decile	Inflation
1 (poorest)	10.9%
2	9.7%
3	9.9%
4	9.6%
5	9.3%
6	9.0%
7	8.9%
8	8.6%
9	8.5%
10 (richest)	7.9%
All	9.0%

IFS

Source: HMRC PAYE; ONS CPIH index; IFS

Increasing costs in manufacturing – the largest part of the C&W economy
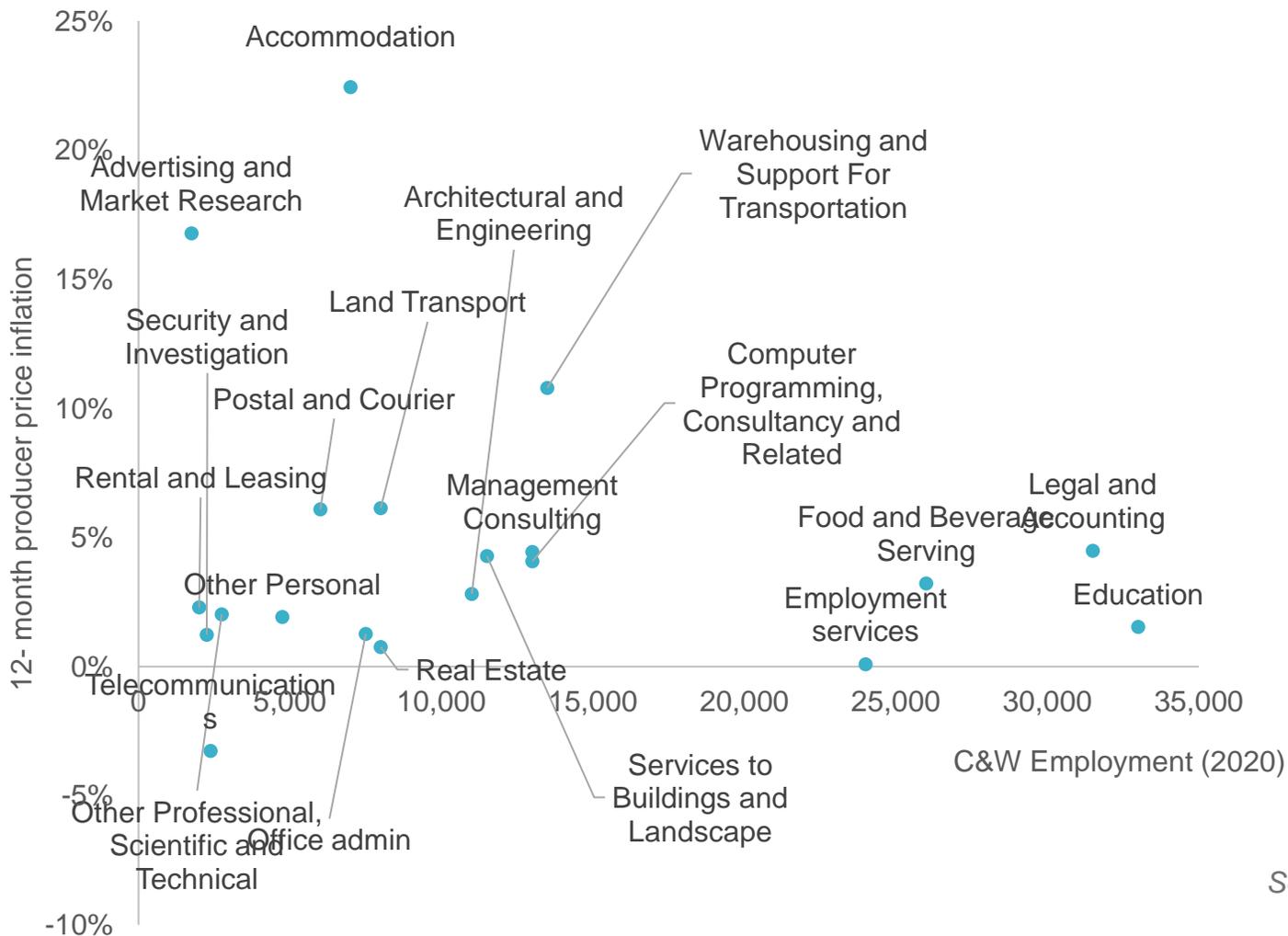

Energy sources in manufacturing (2020)
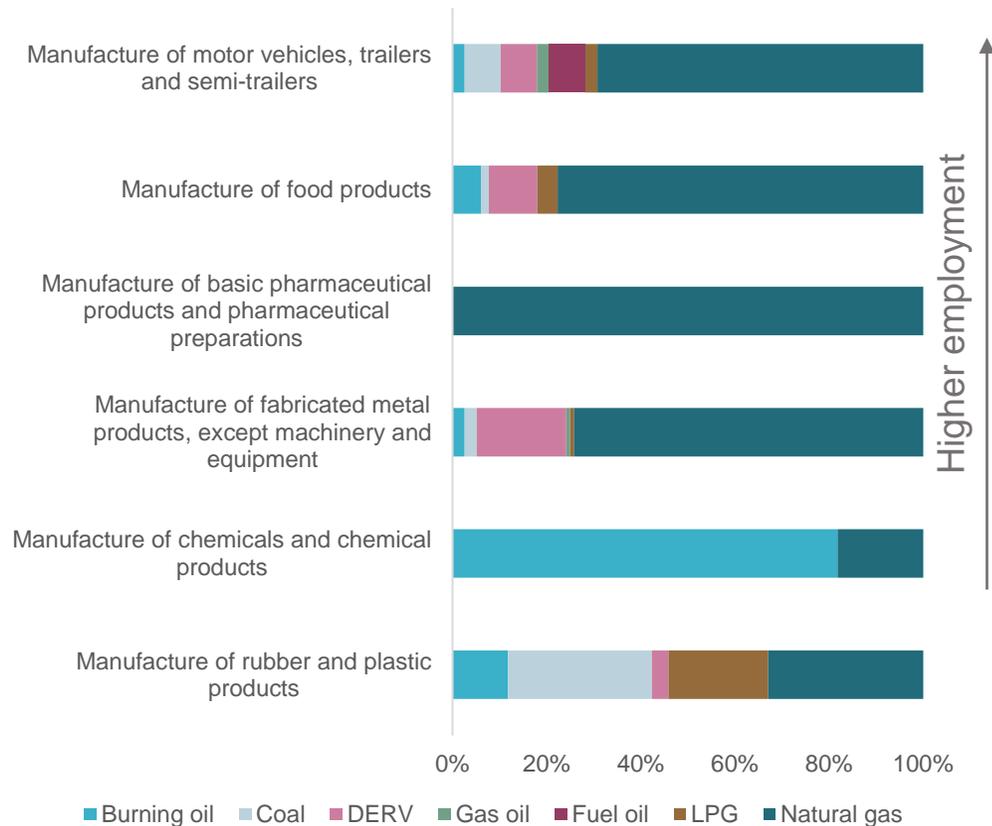
Impact of input price growth on manufacturing (2022)
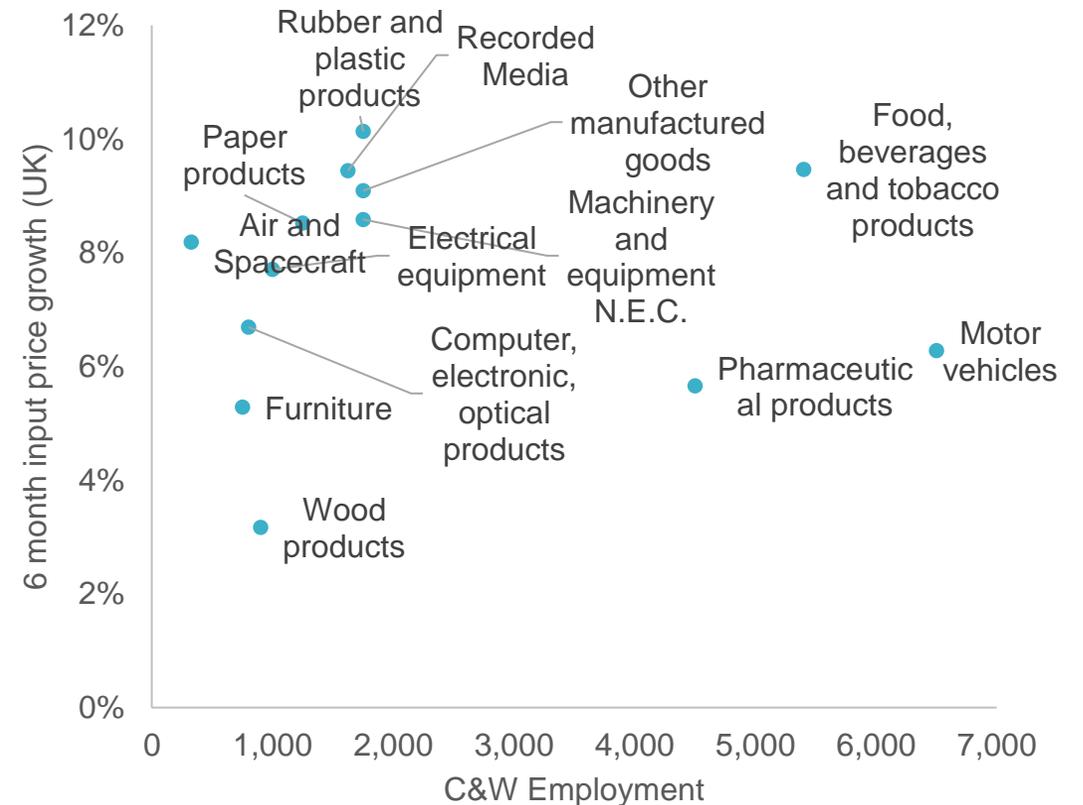
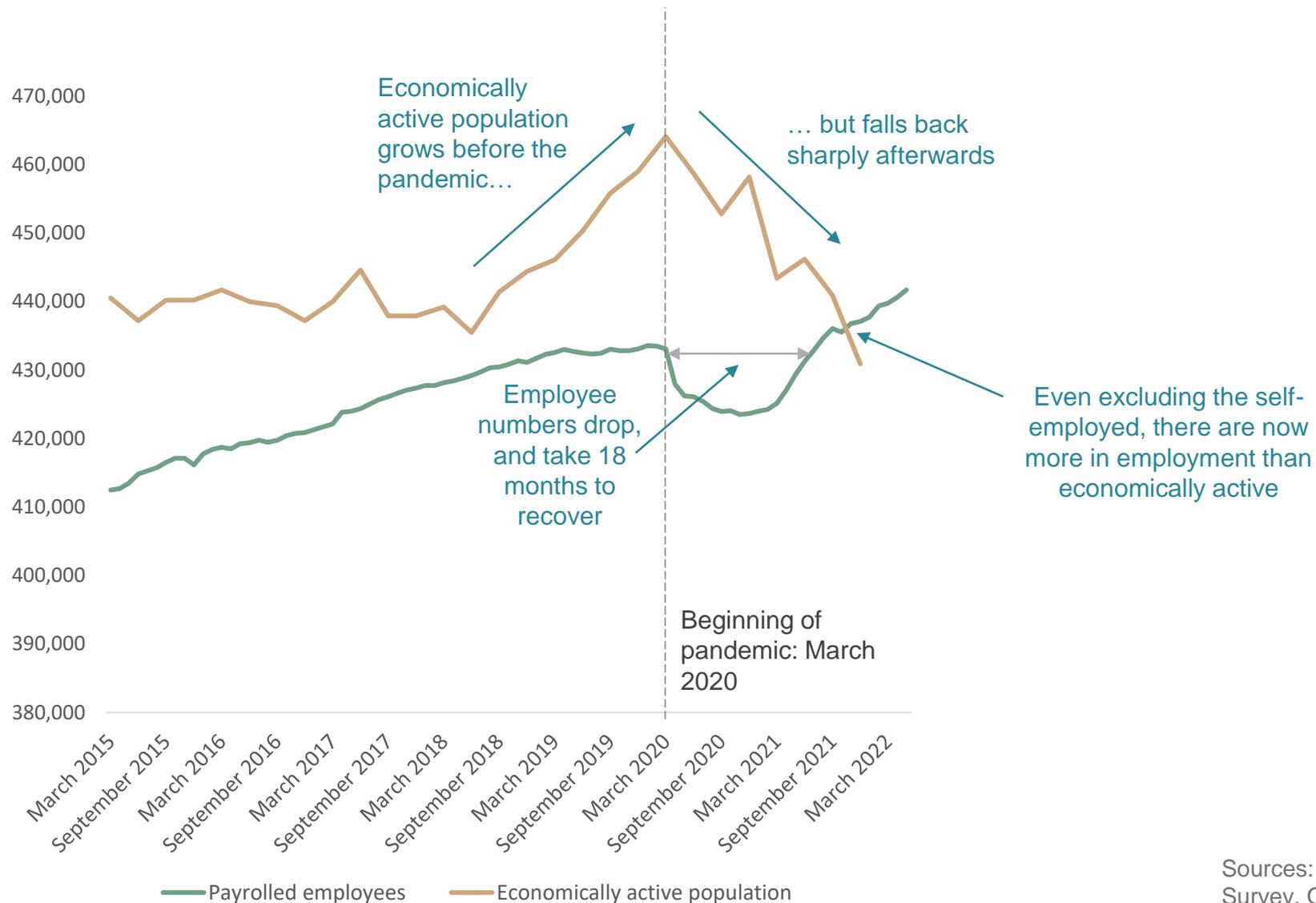*Source: ONS BRES; ONS Energy use by industry, source & fuel; ONS Producer Price Index*

Inflation is less strong in services – the majority of the subregion's employment

Impact of input price growth on services (2022)

Source: ONS BRES; ONS Producer Price Index

A very tight subregional labour market

Economically active population grows before the pandemic…

… but falls back sharply afterwards

Employee numbers drop, and take 18 months to recover

Beginning of pandemic: March 2020

Even excluding the self-employed, there are now more in employment than economically active

470,000
460,000
450,000
440,000
430,000
420,000
410,000
400,000
390,000
380,000

March 2015
September 2015
March 2016
September 2016
March 2017
September 2017
March 2018
September 2018
March 2019
September 2019
March 2020
September 2020
March 2021
September 2021
March 2022

— Payrolled employees   — Economically active population

Labour supply: Rising economic inactivity, as Covid has accelerated retirement

Economic inactivity (Apr 2019 – Sep 2021)
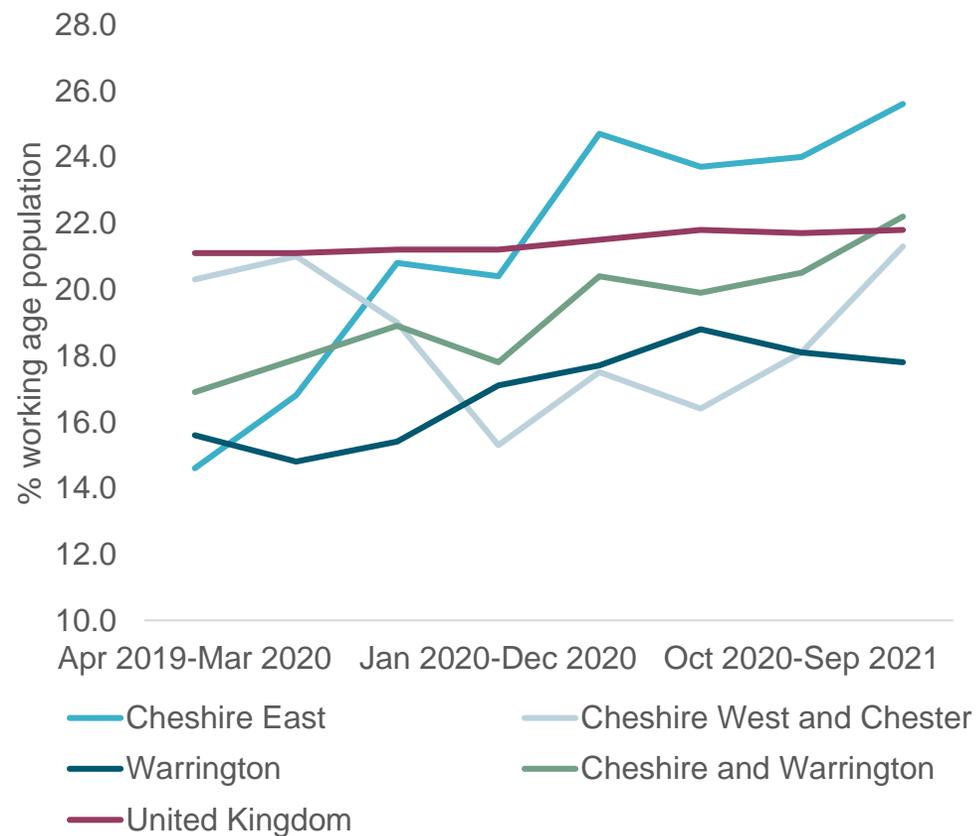
% pt. change by reason for economic inactivity (Mar 2020 – Dec 2021)
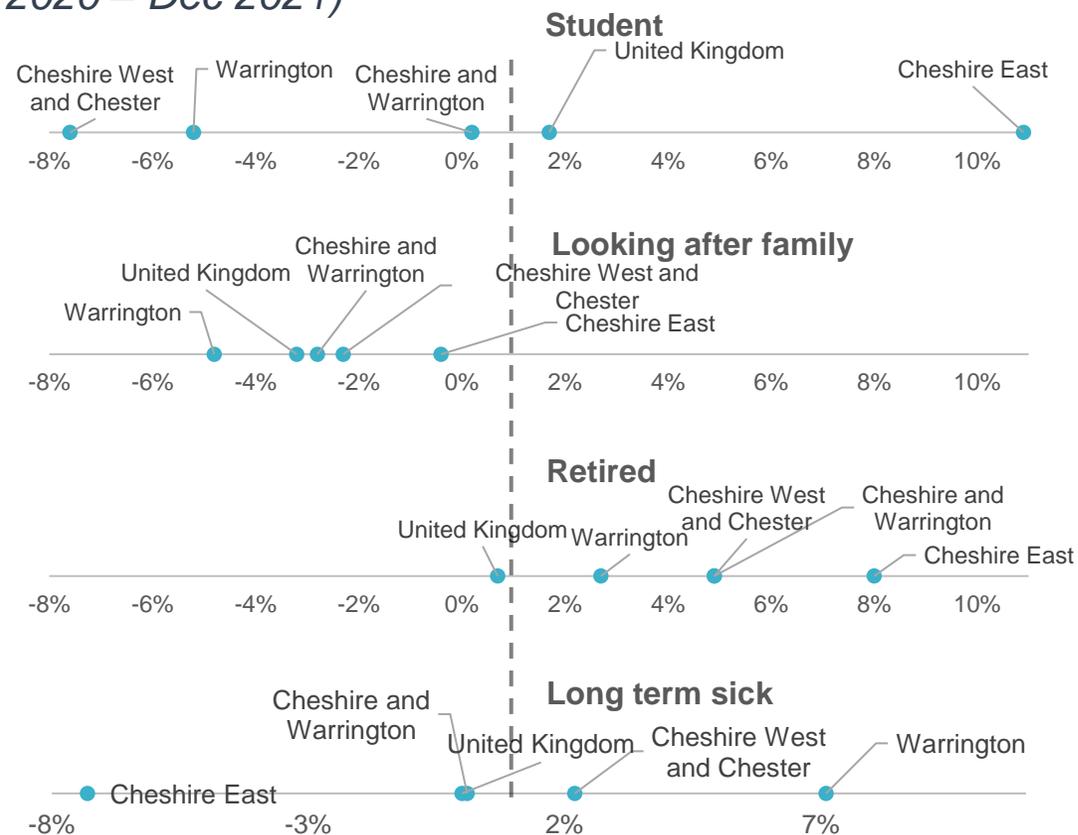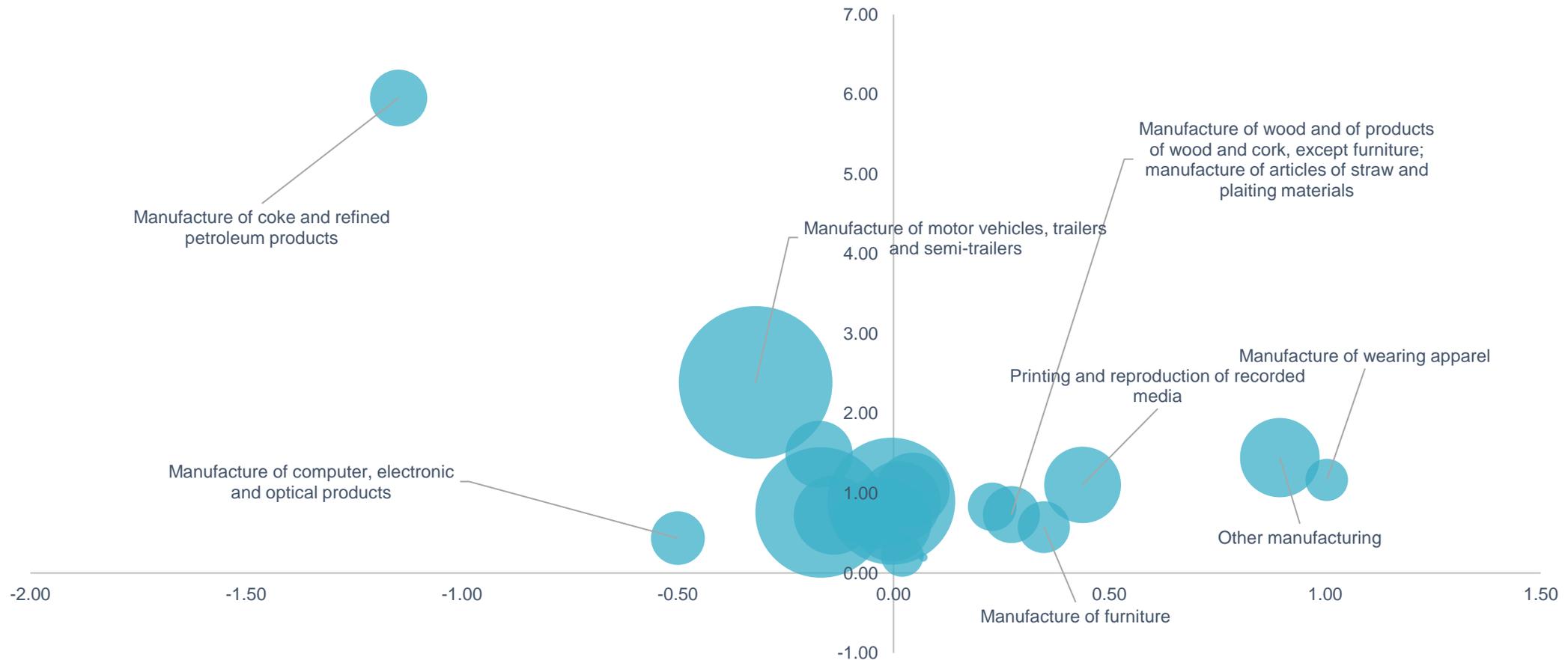
Annex – detail on sectors

Metro——Dynamics

Sectoral specialisation analysis

Taking the growth sectors from the Local Industrial Strategy, we have looked at employment and sectoral specialisms to determine whether there have been any changes in their relative strength. This includes: finance and business, manufacturing, life sciences, logistics and distribution, and energy. The following slides include LQ bubble charts, similar to the previous charts in the main report.
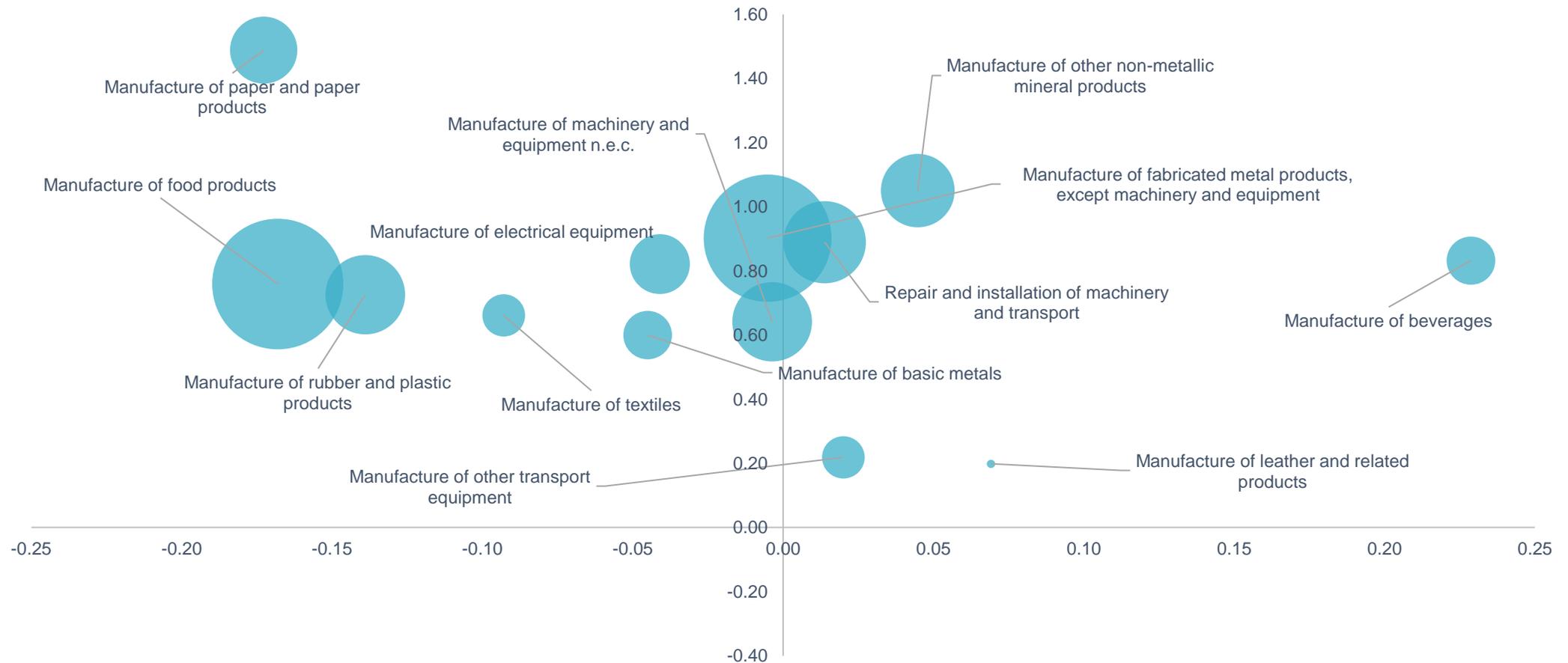
Manufacturing

The chart shows the LQs for the sub sectors contained within the manufacturing sector. The most specialised sub sector is the manufacture of coke and refined petroleum products (LQ of 6) but the workforce has fallen 2015-20.


Manufacture of coke and refined petroleum products

Manufacture of wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials

Manufacture of motor vehicles, trailers and semi-trailers

Manufacture of wearing apparel

Printing and reproduction of recorded media

Manufacture of computer, electronic and optical products

Other manufacturing

Manufacture of furniture

Metro ——— Dynamics

Manufacturing zoom

The chart shows the LQs for the sub sectors contained within the manufacturing sector zoomed in.

Source: ONS BRES (2020)

Energy

The chart shows the LQs for the sub sectors contained within the energy sector. The most specialised sub sector is steam and air conditioning supply (LQ of 7.9) but there is only a workforce of 100 jobs.

Source: ONS BRES (2020)
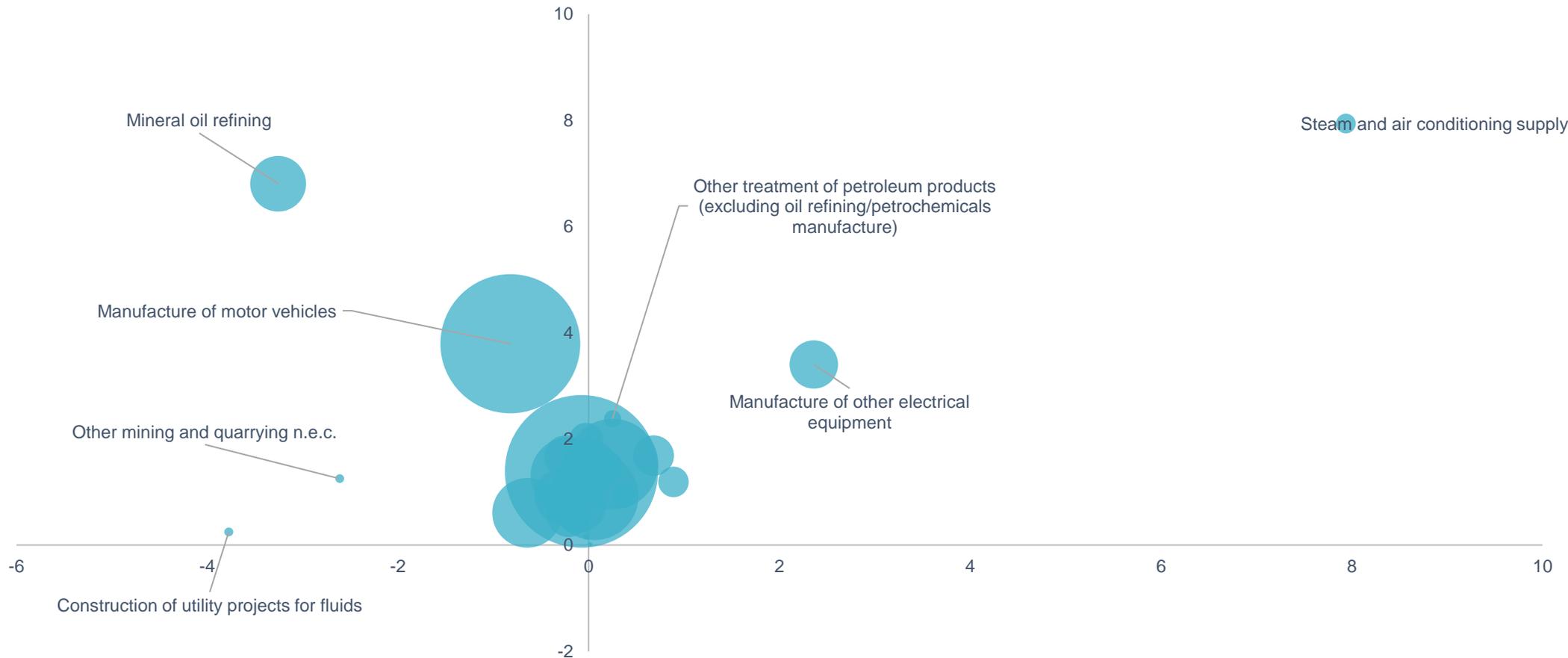
Energy zoom

The chart shows the LQs for the sub sectors contained within the energy sector.

Source: ONS BRES (2020)

Metro —— Dynamics
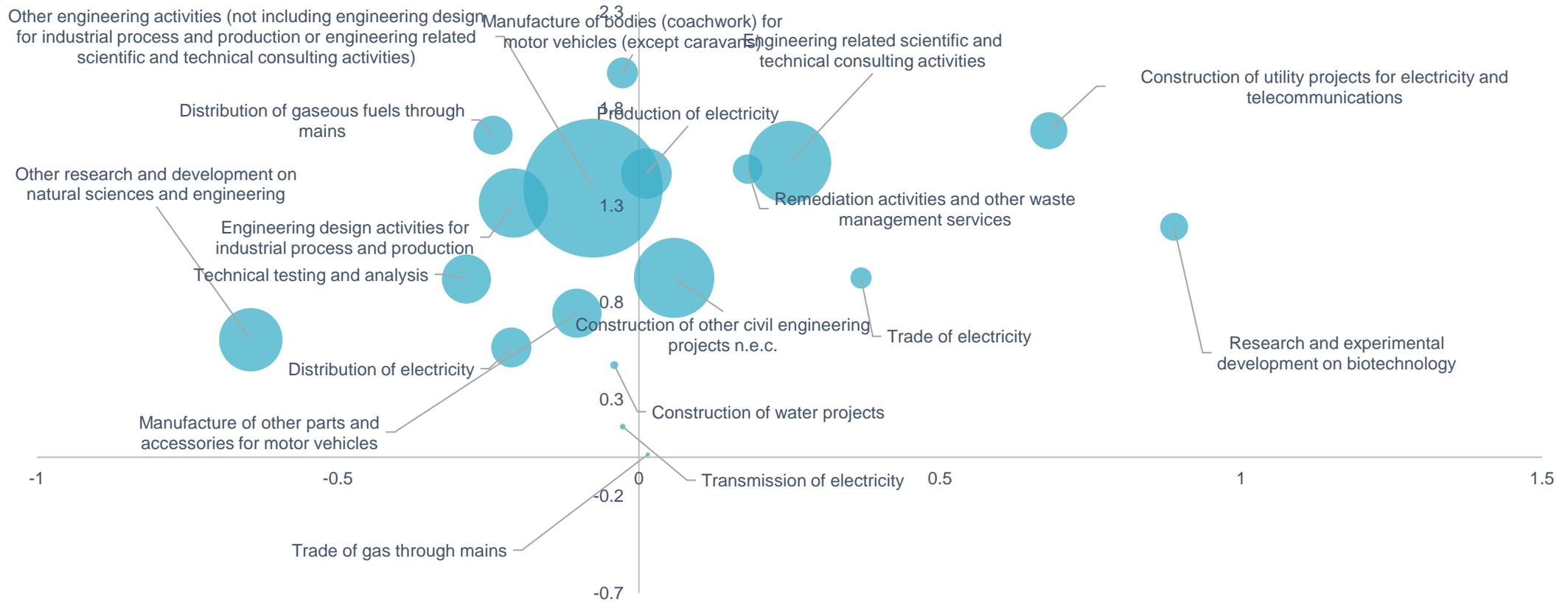
Life Sciences

The chart shows the LQs for the sub sectors contained within the life sciences sector. The manufacture of pharmaceutical preparations is the clear stand with the largest workforce (4,500 jobs) and the highest specialism (LQ of 8.6).
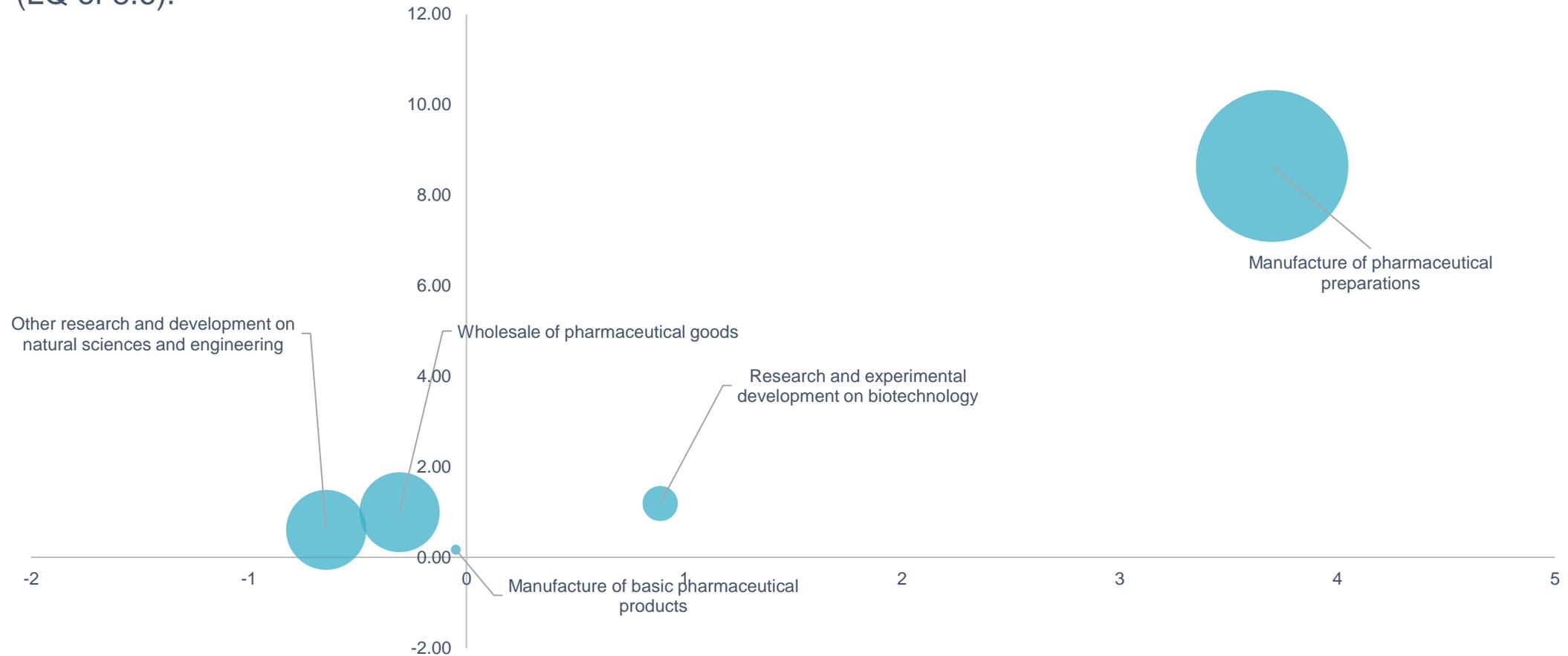
Finance and business

The chart shows the LQs for the sub sectors contained within the finance and business sector. Financial service activities is twice as specialised than average and employs over 15,000 workers.

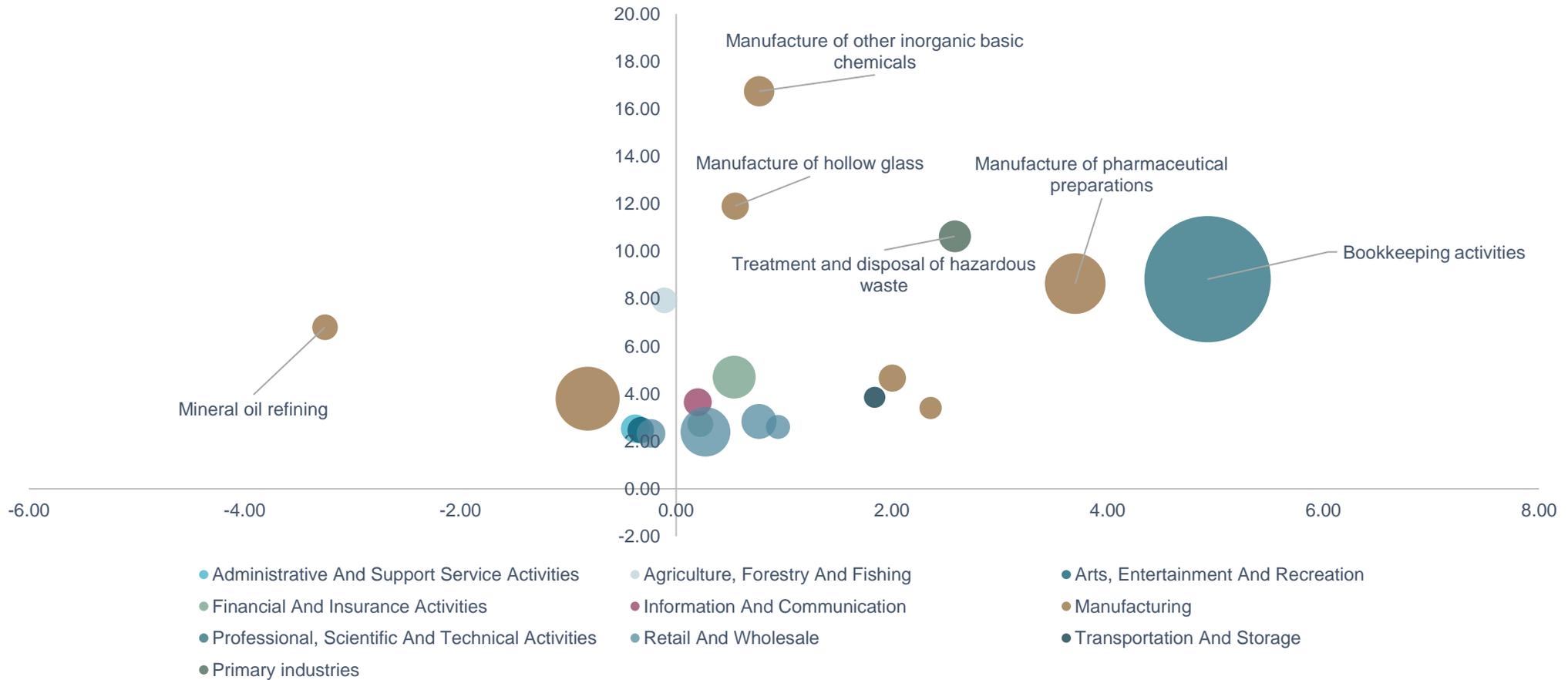Source: ONS BRES (2020)

Metro —— Dynamics
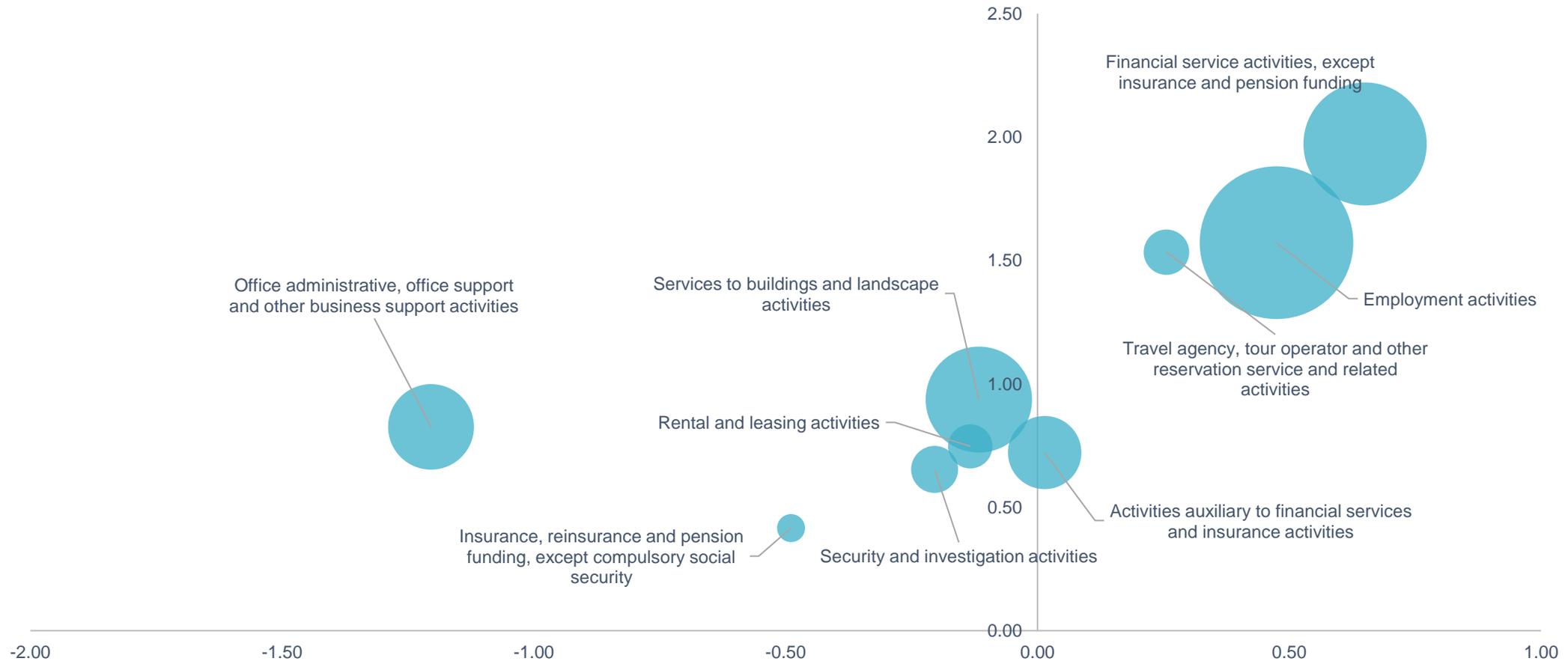
Logistics and distribution

The chart shows the LQs for the sub sectors contained within the logistics and distribution sector. Warehousing and support activities for transportation is the largest employing sub sector (13,500) and 1.4 x more specialised than GB average.
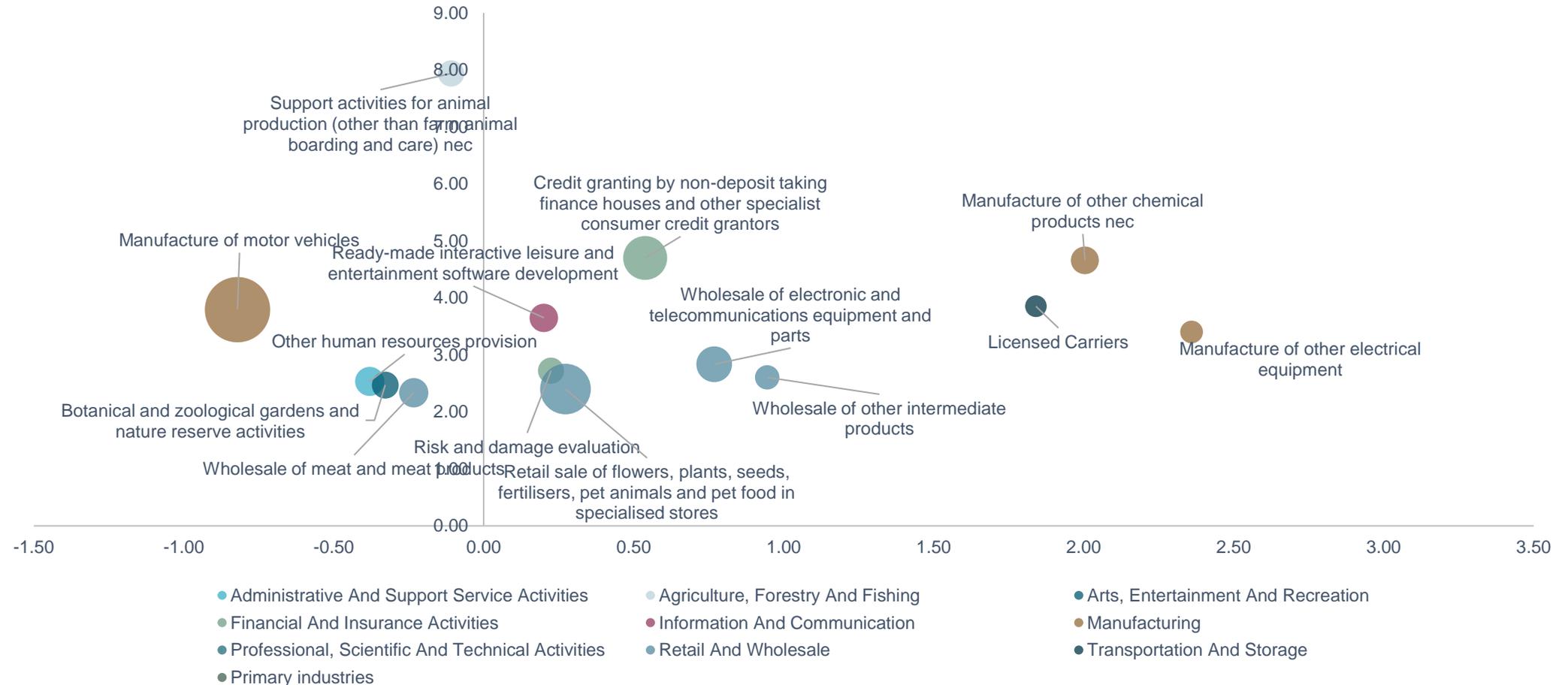
Source: ONS BRES (2020)

Metro ——— Dynamics
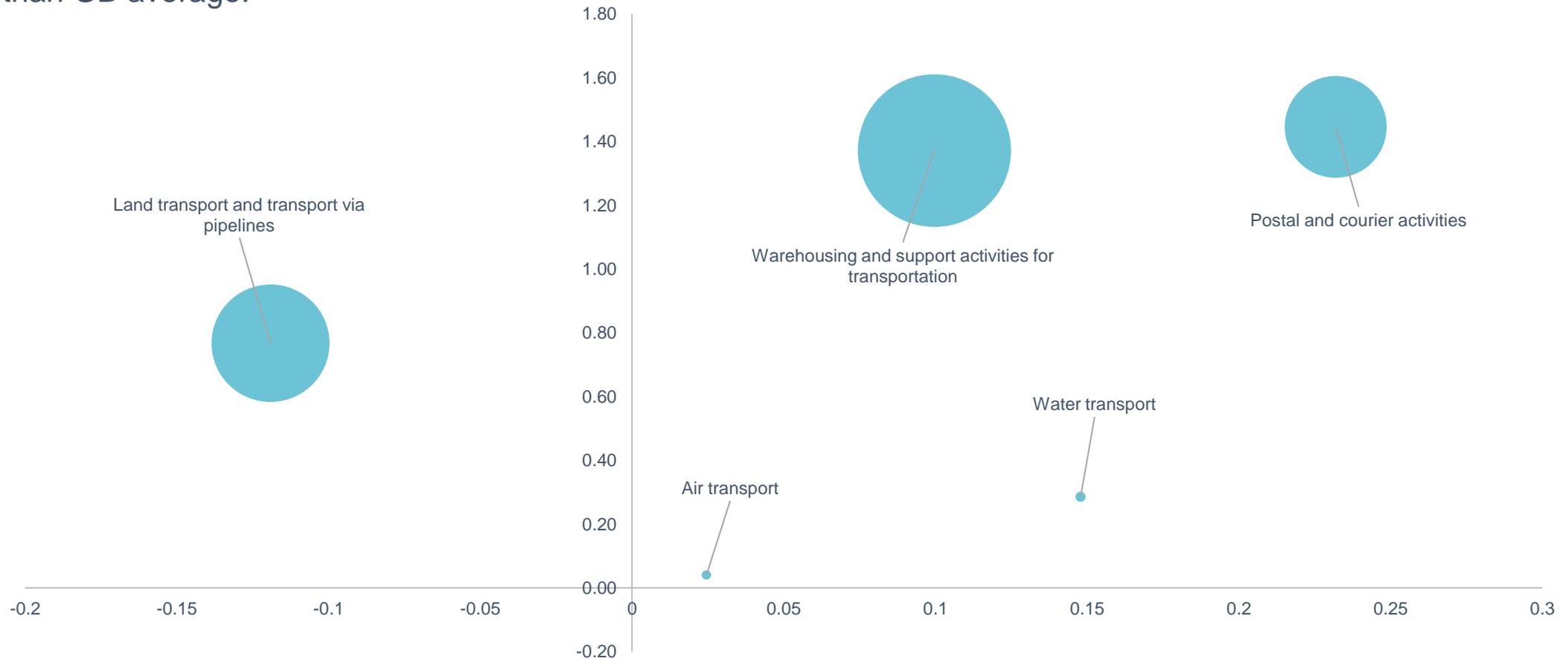
SIC 5 – LQ analysis

The chart shows the Top 20 LQs for SIC 5 sub sectors in Cheshire and Warrington. The most specialised sector is the manufacture of other inorganic basic chemicals, which is 17x more specialised than the average

● Administrative And Support Service Activities
● Agriculture, Forestry And Fishing
● Arts, Entertainment And Recreation
● Financial And Insurance Activities
● Information And Communication
● Manufacturing
● Professional, Scientific And Technical Activities
● Retail And Wholesale
● Transportation And Storage
● Primary industries

151

Source: ONS BRES (2020)

Metro —— Dynamics

SIC 5 – LQ analysis zoom

The chart shows the Top 20 LQs for SIC 5 sub sectors in Cheshire and Warrington zoomed in.

- Administrative And Support Service Activities
- Agriculture, Forestry And Fishing
- Arts, Entertainment And Recreation
- Financial And Insurance Activities
- Information And Communication
- Manufacturing
- Professional, Scientific And Technical Activities
- Retail And Wholesale
- Transportation And Storage
- Primary industries

Definitions

Metro —— Dynamics

Definitions

Knowledge based sectors

This is from the SIC2 ONS definition of Knowledge Intensive Market Services, Knowledge Intensive Financial Services and High-tech KIS. Including the following SIC2s: 50, 51, 59, 60, 61, 62, 63, 64, 65, 66, 69, 70, 71,72, 73, 74, 78, 80.

STEM professionals

This refers to SOC code 21: Science, research, engineering and technology professionals in the area divided by the working age population in the area.

Innovation jobs

The choice of these sectors was based on the OECD sector definition for "high-level Science and Technology" and the UK Innovation Survey industrial category of "high-tech manufacturing. Including the following SICs: 21,26, 62, 72, 271, 273, 303, 325, 582, 631, 33130, 33140, 33160, 33190, 62090, 95110.

Local export data

Data is compiled by merging trade data collected by HMRC with employment data from the Inter-Departmental Business Register (IDBR). A business' trade is allocated to a region based on the proportion of its employees employed in that region. Where a trader is not matched with the IDBR, its trade is matched with Office for National Statistics postcode data to obtain the region in which the Head Office of the VAT registered business (importer or exporter) is based.

Rural economy sources

- *CREDS - DEFA emissions factors (to convert energy consumption into carbon emissions)*
- *MSOA nondomestic electricity, BEIS (2020)*
- *Department for Transport (2022)*
- *Greater Manchester Digital Exclusion Index (2022)*
- *Department for Education (2018/19)*
- *ONS – Health state life expectancies, UK: 2009-13*
- *Ministry of Housing, Communities and Local Government – Index of Multiple Deprivation (2015 and 2019)*
- *ONS BRES (2020)*
- *University of Sheffield (2020), Zoomshock*
- *Onward UK (2021)*