

The North West of England's Productivity Challenge: Exploring the issues

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Date:

October 2021

The Productivity Institute

Productivity Insights Paper No.003

Key words

productivity, north west England,

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J. Holden, M. Sensier, R. Allmendinger (2021)

Suggested citation

J. Holden, M. Sensier, R. Allmendinger (2021), *The North West of England's Productivity Challenge: Exploring the issues*. Productivity Insights Paper No. 003, The Productivity Institute.

The Productivity Institute is an organisation that works across academia, business and policy to better understand, measure and enable productivity across the UK. It is funded by the Economic and Social Research Council (grant number ES/V002740/1).

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Abstract

This report provides a state-of-the-art overview of the productivity performance in the North West of England. It finds that the average level of productivity in the North West lags the national average, and for most sub-regions the gap has been widening in the past decade. The primary reasons for this shortfall relate to underinvestment by the public and private sectors in key growth drivers such as hard and soft infrastructure, R&D activity, and human capital. Long-term scarring from the North West's industrial decline is undoubtedly a key factor as well. When the region's economic revival began in the 1990s it was built on weak fundamentals. Local institutions (including local enterprise partnerships, local authorities, and combined authorities) do not have the revenue or capital budgets comparable to the scale of economic challenges faced.

The region's fragmented economic geography and lack of critical mass is also a factor. The report argues that the North West's productivity challenges cannot be delivered with the same historical approach. It will require a sophisticated mix of coordinated policies (incorporating education and skills, R&D, innovation, health, planning, transport, investment and a host of other areas) and long-term commitment that respond to the specific local circumstances. Key priorities should include the following of a digital transformation to support a technologically diverse, sustainable and productive economy.

1. Introduction

- 1.1. Productivity is key to creating a more prosperous and equitable society. Improving productivity will allow the north-west to adjust and grow in the aftermath of COVID-19 and Brexit, providing the foundation to create better paid jobs and improve material standards of living. In recent decades productivity has become a major drag on the UK economy, threatening shared prosperity across the country, and COVID-19 has increased the sense of urgency about the gap because the nation's ability to grow its way out of recession and manage the national debt requires productivity to increase.
- 1.2. There are many dimensions of the UK's productivity puzzle, but one of the most striking is the level, by international standards, of productivity variability between and within regions. The UK has regions that are amongst the most productive in the developed world and others that now have more in common with southern Italy, Spain or Alabama (Carrascal-Incera, et al, 2020). Government has made clear its intent to 'level up' the UK by closing productivity gaps both across and within regions (HMT, 2021). This is a highly ambitious agenda that cannot be delivered with a simple business-as-usual approach. It will require a sophisticated mix of policies and long-term commitment, underpinned by a robust evidence base.
- 1.3. Developing this evidence base by analysing the drivers of productivity growth at a regional level and identifying practical solutions for how policymakers, businesses, and individuals can make changes that enable improvements in productivity is at the heart of the Productivity Institute's approach. This report looks at productivity performance in the north-west of England. It does not seek to provide a comprehensive economic assessment – a full analysis would include much greater exploration of social and environmental factors and wider indicators of prosperity – but rather it aims to summarise existing research and data on productivity relevant to the north-west, highlight areas we still know relatively little about, and identify questions of interest for future work.
- 1.4. It is structured as follows:
 - Section 2 gives an overview of current and historic productivity performance in the north-west of England.
 - Section 3 analyses the potential explanations for the region's productivity performance.
 - Section 4 identifies areas where additional research would be beneficial to help regional and national stakeholders take actions to improve productivity in the north-west.

2. Productivity in the north-west

- 2.1. The UK's productivity challenges are well documented. Since the 1960s there has been a persistent gap in levels of productivity compared to other countries at similar stages of development. While UK output per hour was in line with the EU-15 average in the early-1960s, by the late 1970s it had dropped to 15% below. Although the gap narrowed during the 1990s and early 2000s, it has widened again since the mid-2000s. In the wake of the 2007 to 2009 global financial crisis and subsequent recession, the UK has experienced one of the most extreme slowdowns in productivity growth in the developed world (van Ark and Venables, 2020).
- 2.2. The north-west is a lagging region in a lagging nation. Productivity, as measured by Gross Value Added (GVA) per hour worked, stood at £31.78 in 2019 which was almost 10% below the UK average. This is a significant gap: had GVA per hour matched the national average, the north-west would have contributed an additional £17bn to the UK economy. The north-west's productivity gap with the UK average has widened over the past 15 years, as shown in Figure 1, with the region slipping back from being 93.5% of the national average in 2004 to 90.4% in 2018. London and the South east are the only

regions in the UK that consistently, and very substantially, outperform the UK average. While all other regions as well as the devolved nations performed below the average UK-wide productivity level, by 2019, the North West also found itself well below the levels of Scotland (98%), East of England (95%) and at about the same level as for the Southwest (90.6%).

Box 1: The north-west of England

The north-west of England is made up of five distinct but interconnected sub-regions: the two major cities and urban agglomerations that surround **Manchester** and **Liverpool** and the more rural regions of **Lancashire** and **Cumbria** to the north and **Cheshire** to the south. It has strong economic linkages to its immediate neighbours of Yorkshire and the north-east, north Wales, and the West Midlands.

Over 310,000 businesses generated £177bn in economic output in 2018 (9.6% of the UK total). The majority of firms (83%) in the region are micro-sized with fewer than 10 employees. 16.2% are SMEs employing between 10 and 249 people, and just 0.4% (or 1,300 firms) employ 250+ people. The corresponding figures for GB are 85% micro, 15.1% SMEs, and 0.4% 250+.

The region has a population of 7.3m, which has grown by 567,000 since 2000. 4.6m of the population is of working age which makes up 62.1% of the population, just below the national average of 62.5%. The region has some of the most significant structural deprivation challenges in the country with more than 456,000 people claiming out of work benefits (10.1% of the population, compared to 8.4% in GB), of which more than three-quarters were claiming due to ill health.

Source: <https://www.nomisweb.co.uk/reports/lmp/gor/2013265922/report.aspx> and ONS regional GVA statistics.



- 2.3. These regional disparities are not a new phenomenon with estimates showing a consistent productivity gap between London and the South east and the rest of the country for more than a century – in 1901 London and the south-east’s GDP per worker was 122.5% of the Great Britain average and the north-west’s was 96.7%. Only for around three decades following the end of World War II have regional productivity differentials fallen consistently and regional disparities have been widening more or less consistently since the mid-1970s (Geary and Stark, 2016). As Harding and Nevin (2015) note, the “causal links may be difficult to discern, but the evidence of the last fifty years suggests that periods of relatively high public investment at least coincide with decreases in spatial economic disparities, and periods of low investment with growing performance gaps.”
- 2.4. At an aggregate level the north-west’s productivity performance compared to the rest of the country is far from impressive, but there are also marked differences within the region. As Figures 2 and 3 illustrate, Cheshire performs relatively well (though its level has decreased relative to the UK over the last 15 years), whereas Merseyside, Lancashire, Greater Manchester and Cumbria all lag behind. At a lower geographic level the differences in performance are even more striking: Cheshire East, with its high value cluster of life sciences and chemicals, is the 22nd most productive of the UK’s 167 NUTS3 areas (excluding Northern Ireland), whereas north-east Greater Manchester, within the same travel-to-work area but still grappling with post-industrial decline, ranks 147th. Even within Cheshire East the productivity advantage seems primarily driven by some very large, high value companies, masking underperformance in other sectors and SMEs in particular.

2.5. The 2007 to 2009 global financial crisis and subsequent recession stands out as a turning point for the region (Sensier and Devine, 2020). Between 2005 and 2010 GVA per hour increased by 0.9% per annum on average across the north-west, but the growth rate fell to just 0.2% per annum from 2010 to 2018 and even dropped by 2.3% in 2019. Up until the global financial crisis, productivity in Greater Manchester and Merseyside was improving relative to the national average, but it has subsequently fallen back. After seeing productivity erode relative to the rest of the UK in the lead up to the global financial crisis, in its aftermath Cumbria and Lancashire have started to close the gap, substantially so in the case of Lancashire. Cheshire's relative productivity advantage to the UK has been declining since 2007, although in more recent years it has started to bounce back. This document explores some of the explanations for these regional and sub-regional discrepancies in performance, but it is an area where additional research will be required to get a more comprehensive understanding of the dynamics observed in difference places.

Figure 1: UK regions nominal (smoothed) GVA per hour worked indices, 2004–2019 (UK=100)

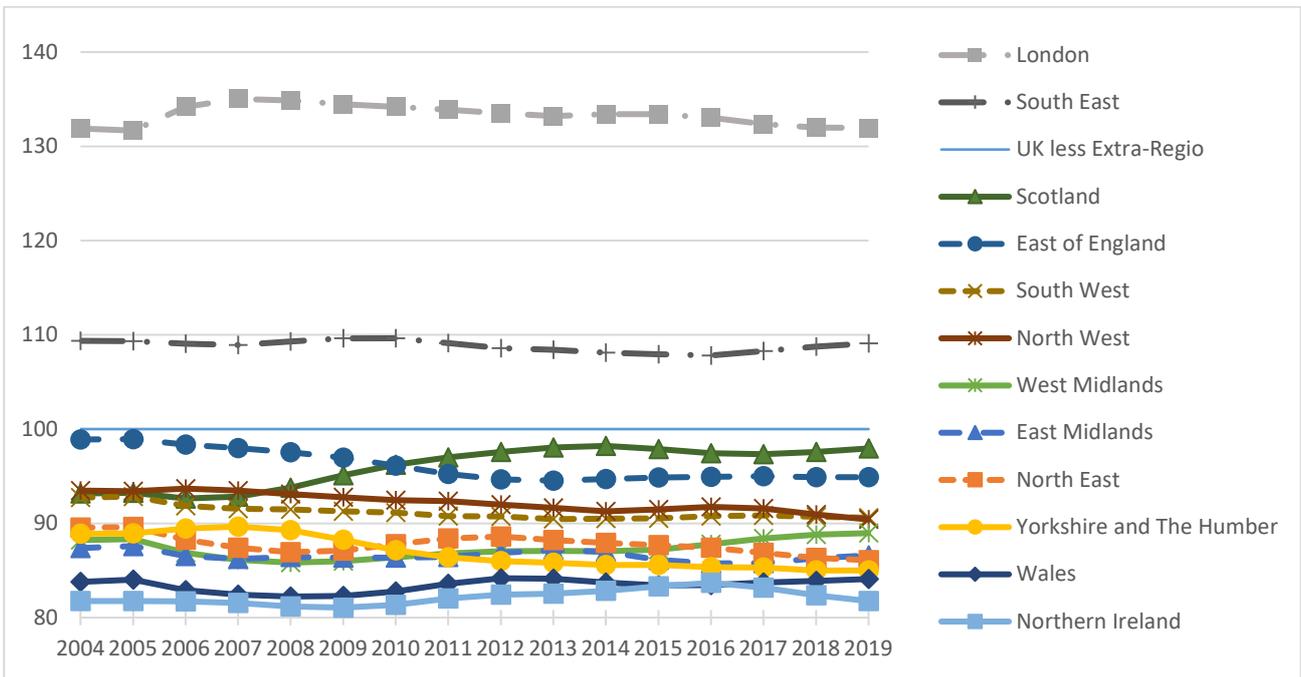
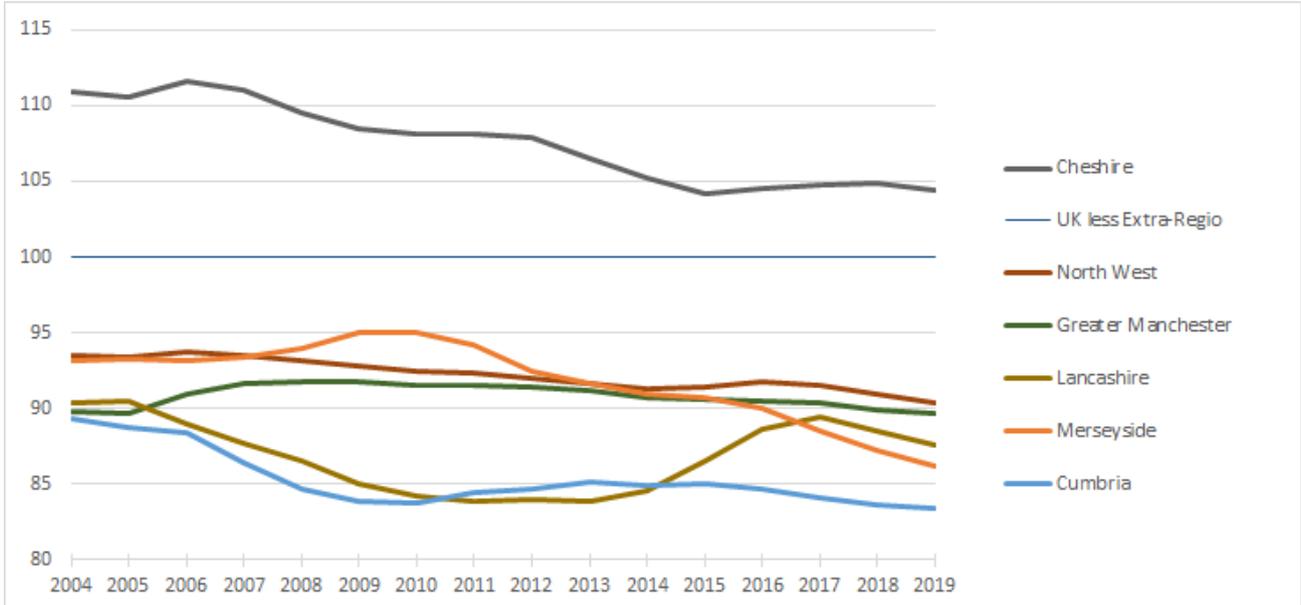


Figure 2: North-west sub-regions nominal (smoothed) GVA per hour worked indices, 2004–2019 (UK=100)



Source: ONS (2021), Sub-regional productivity: labour productivity indices

Box 2: Measuring productivity

Measuring productivity consistency across different firms, sectors, geographies and time periods is challenging and, by necessity, reductive. As the economy has moved further away from traditional manufacturing, which is relatively straightforward to define inputs and outputs, measuring productivity has become even more difficult. It is generally calculated by taking a measure of output (typically GVA, at the sub-national level which is a measure of the value of goods and services produced in an area or sector) and dividing it by a measure of inputs (usually a measure for labour inputs or a combination of labour and capital inputs).

Which measure is chosen matters. For the purposes of this document GVA per hour worked has been used as the preferred measure of productivity wherever possible for a number of reasons:

- It is available at a sub-regional level across the whole of the European Union allowing for UK and international comparisons.
- It is available at a detailed sectoral level with a long (15 year) time series.
- Unlike GVA per resident it is not affected by changes in the composition of the population or labour market, or commuting effects.
- Unlike GVA per job it is not affected by changes in hours worked (under this measure 'productivity' could increase by individuals simply increasing their working hours).
- Measures of capital inputs, which would allow an analysis of total factor productivity which would be preferable, are not available at the sub-national level.

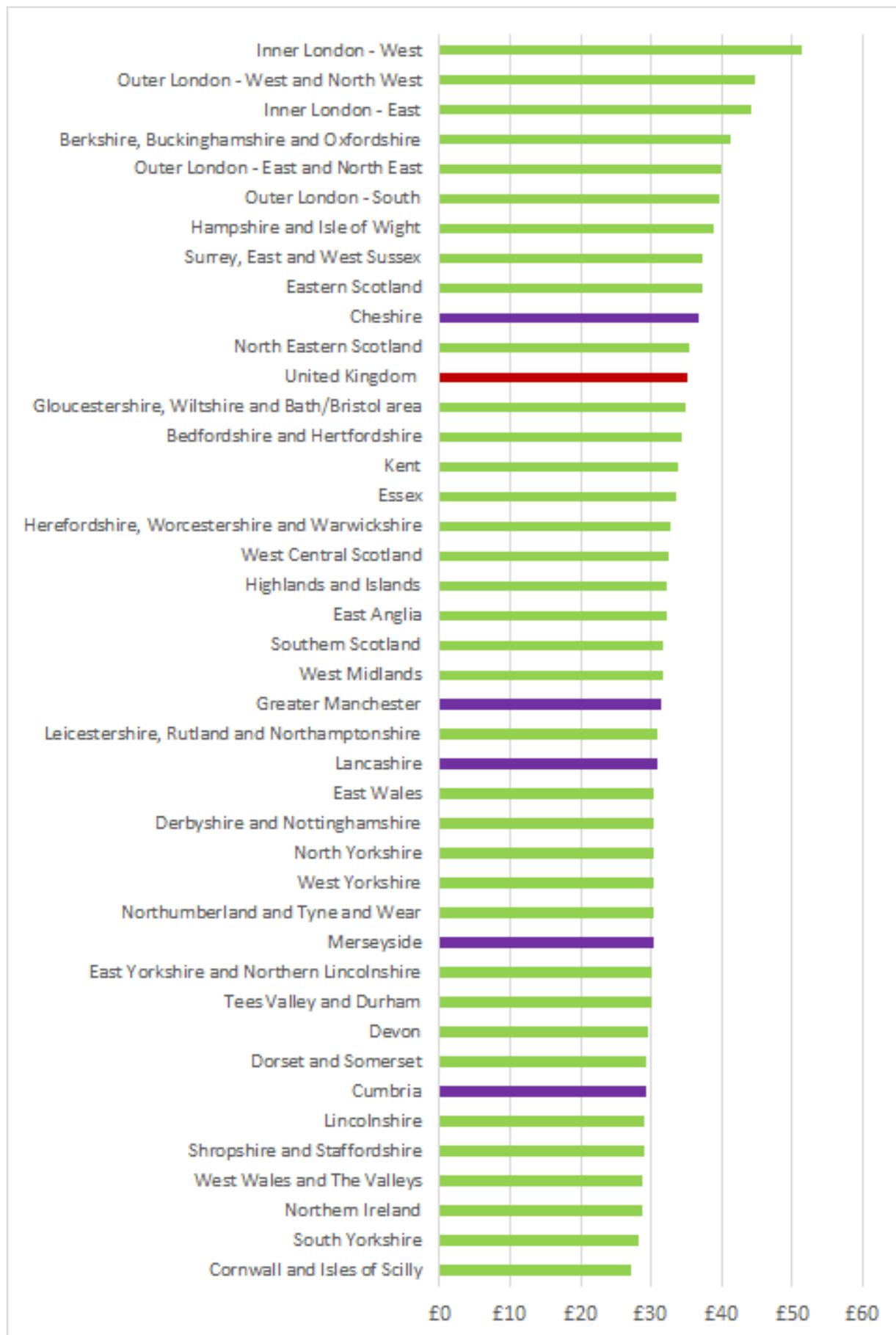
As such, GVA per hour worked is thought to be the best measure available. It does have important limitations, however, including that it does not capture changes to the volume of economic activity that is undertaken. It would be possible for GVA per hour to rise while total GVA collapses and unemployment skyrockets.

More broadly, there are important concerns about the adequacy of GVA as a measure of output. These include criticisms that GVA does not accurately capture the value of services, particularly of public services, of unpaid work, or the importance of the free information inputs to activities enabled by new technologies; and it fails to distinguish between wealth-creating and wealth-extracting activities (see Coyle, 2014 for an overview of the limitations of GVA and GDP as output measures). At a regional level, differences in prices for non-traded outputs and costs of living may overstate differences in both GVA and GVA hour worked.

These concerns suggest that we should not rely exclusively on GVA or GVA per hour worked as a measure of positive economic progress. This paper therefore presents a wider set of measures to put GVA per hour worked data in a broader economic and social context. The Productivity Institute's 'measurement and methods' theme is exploring how to improve existing, and create new and better, measures of productivity.

Source: Adapted from GMCA (2019a)

Figure 3: Nominal (smoothed) GVA per hour worked (£) by NUTS2 area, 2019



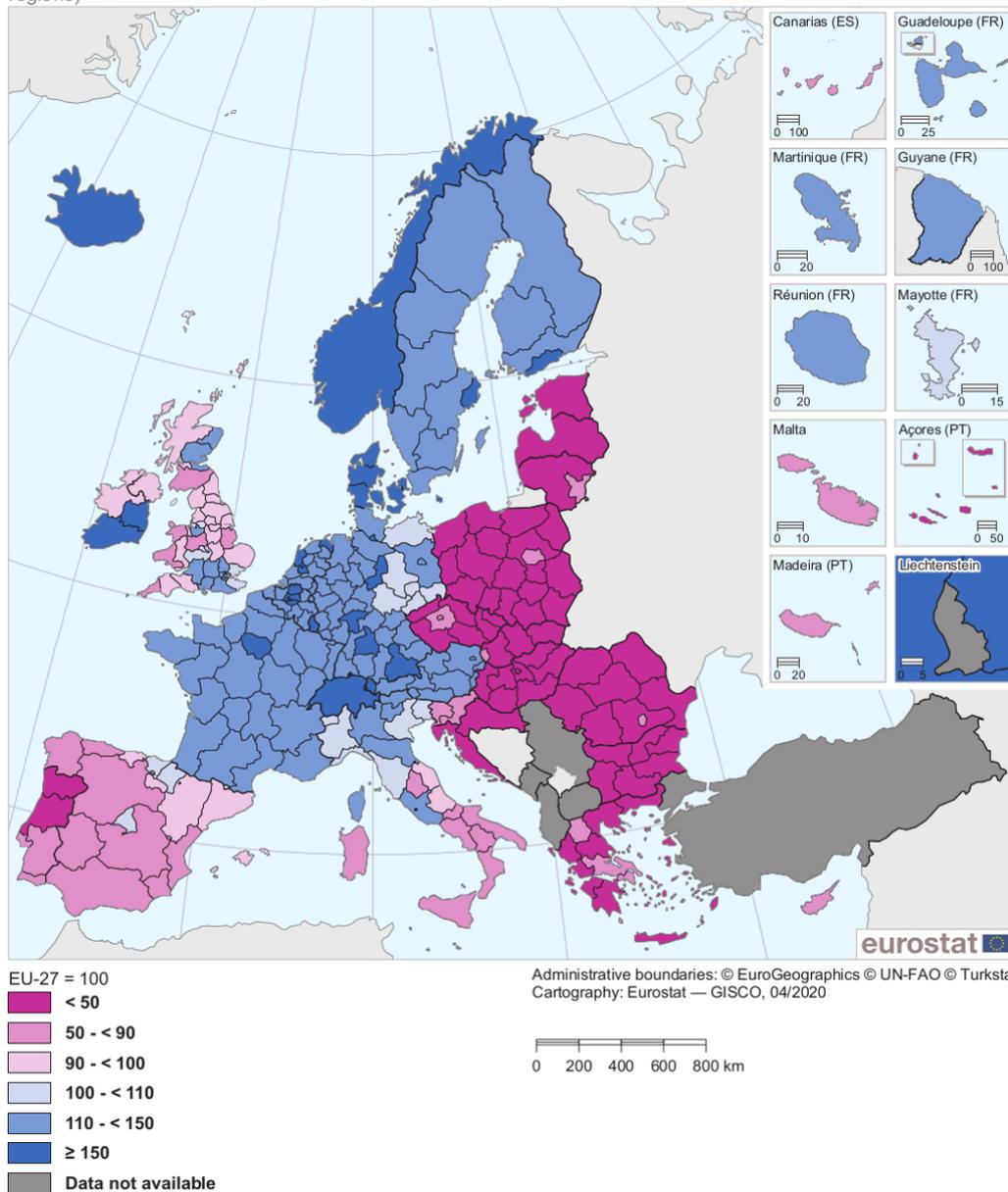
Source: ONS (2021), Sub-regional productivity: labour productivity indices

- 2.6. The future productivity trajectory for the region will be heavily influenced by the Covid-19 pandemic and the UK's exit from the European Union. Recent research by NIESR (2021) has found that UK labour productivity increased during the COVID-19 pandemic as hours worked fell more than output. However, this is expected to be a temporary effect and, over the medium-term, a combination of low or uncertain demand, supply chain constraints, and increased requirements to service debts (especially in those sectors most affected by COVID-19) is forecast to hold back productivity growth. More positively, investments seen into digitalisation during the pandemic could support a long-run increase in productivity. The withdrawal of government support for the economy post-Brexit could lead to an uptick in productivity as a result of the destruction of less competitive businesses. The new Trade and Co-Operation Agreement with the European Union, while significantly better than a 'no deal' Brexit outcome, is expected to result in reduced trade, less migration and lower productivity growth. Across the whole of the UK, it is expected to take productivity four years to return to 2019 Q4 levels following these two shocks. At a regional level, places with large concentrations of manufacturing and public services, such as the north-west, are expected to recover more slowly. The most vulnerable people are at risk of being most affected in the region, particularly those households who are already on low incomes (NIESR, 2021).
- 2.7. While the UK's inter- and intra-regional disparities are not unusual in historical terms, they are by international comparison. Map 1 highlights the level of geographic disparity in the UK, which is not seen to the same extent in other European countries apart from Italy. Outside London and the south-east, only southern Greater Manchester and Cheshire and parts of Scotland have productivity above the EU27 average. This is important because international evidence suggests that this spatial inequality hampers national economic growth (Carrascal-Incera, et al, 2020). It is also significant as it suggests that the north-west has internationally significant strengths to build on which are not present in other regions to the same extent.
- 2.8. What is also striking from the map is that no part of the former East Germany has GVA per hour worked below the EU27 average – a remarkable transformation for a region that was until 1990 a communist country with a significant productivity gap with leading European regions. Closer to home, two of the Republic of Ireland's three regions are amongst the most productive in the EU (although this is overstated due to the impact of the activities of multinational corporations (FitzGerald, 2015)). These international examples – whilst very different in terms of the way productivity has been raised in each instance – tell us that it is possible to close regional productivity differentials, and highlight that there are important lessons that can be learnt from our near neighbours.

Map 1: GVA per hour worked, 2017 (Source: Eurostat)

Labour productivity per hour worked, 2017

(index, based on gross value added per hour worked in EUR in relation to the EU-27 average = 100, by NUTS 2 regions)



Note: Norway and Switzerland, national data. Germany: estimates. Bulgaria, Greece, Spain, France, the Netherlands and Iceland: provisional. Sostinės regionas (LT01), Vidurio ir vakarų Lietuvos regionas (LT02), Warszawski stołeczny (PL91) and Mazowiecki regionalny (PL92): definition differs. France and Italy: 2016.

Source: Eurostat (online data codes: nama_10r_3gva, nama_10_a10, nama_10r_2emhrw and nama_10_a10_e)

3. Explaining the north-west's productivity performance

- 3.1. What explains the north-west's productivity gap with leading UK and European regions? It seems safe to say there is no single explanation, rather it is a result of a complex set of deep-seated and interrelated factors. This section presents the existing evidence, alongside new analysis, on what these key factors are thought to be, structured around five themes. The section also identifies areas where further research would be useful.
- Economic structure and organisation capital
 - Geography and place
 - Human capital, skills and health
 - Investment and knowledge capital
 - Institutions and governance
- 3.2. The analysis suggests that the primary reason for low productivity in the north-west is the same as for the UK as a whole – chronic under-investment in key growth drivers such as hard and soft infrastructure, R&D activity, and human capital. Long-term scarring from the north-west's industrial decline is undoubtedly a key factor for why the region is more affected by these national challenges than other parts of the UK. Deindustrialisation led to an exodus of skilled people (particularly young people) and financial and commercial institutions, stripping out critical parts of the region's economic base, as well as leaving a legacy of long-term worklessness, ill-health and deprivation. When the region's economic revival began it was built on weak fundamentals.
- 3.3. The region's fragmented economic geography and lack of critical mass is also a factor. Liverpool and Manchester, despite having concentrations of highly productive activity and knowledge assets, lack the scale and transport links to drive productivity across the region in the way that London does for the south-east. This has been further compounded by the UK's centralised and functionally fragmented decision-making structures that stifle regional and local initiative and pay too little attention to local circumstances. There continue to be gaps in private sector institutions in the region too – particularly the relative lack of decision making functions of large firms and financial institutions.

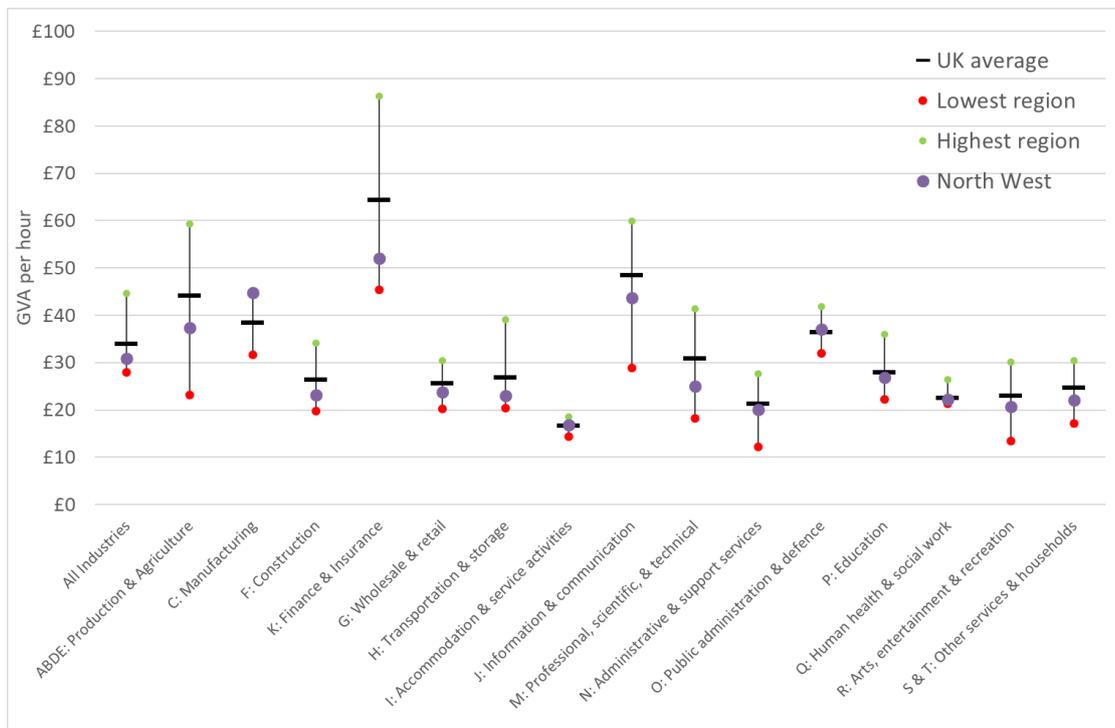
Economic structure and organisational capital

- 3.4. The north-west was at the vanguard of technological and organisational innovation in a wide range of industries for much of the eighteenth, nineteenth and early twentieth century, from textiles, chemicals and heavy industry to finance and commerce. However, like much of the north of England, deindustrialisation in the second half of the twentieth-century hit the north-west hard, as manufacturing employment collapsed and the region struggled to make the transition to a more service-led economy.
- 3.5. This industrial legacy provides the north-west with a distinctive industrial base. It has a large and very productive manufacturing sector (accounting for 9.3% of total jobs compared to 8% for the Great Britain as a whole, see Annex 1 for a breakdown), but has relatively fewer jobs in other high productivity sectors such as information & communications (2.8% compared to 4.3%) and financial & insurance (2.8% compared to 3.5%). It also has a relatively high concentration of employment in sectors such as retail & logistics (20.9% of jobs compared to 19.9% in GB) and the public sector (public administration, education and health account for 26.8% of jobs compared to 26.0% in GB), which are large employers but have fewer outputs that are measured as highly productive on GVA-based measures.
- 3.6. The north-west's sectoral structure accounts for some of the productivity gap seen with the rest of the UK. However, differences in productivity within individual sectors matter more. This can be illustrated with a 'shift-share' analysis: if the north-west's sectoral structure (as measured by the number of hours

worked in each sector as a proportion of total hours worked) was the same as the UK average, the region’s GVA per hour worked would increase by 2.2%. If, on the other hand, the north-west retained the same sectoral structure as it has now but increased productivity in each sector to the UK average then its overall GVA per hour worked would increase by 6.5%, almost three times the effect. Efforts to improve productivity therefore need to focus not only on growing high productivity ‘frontier’ industries such as manufacturing, digital or financial services to improve the sectoral mix, but also on how productivity can be improved across all sectors of the economy.

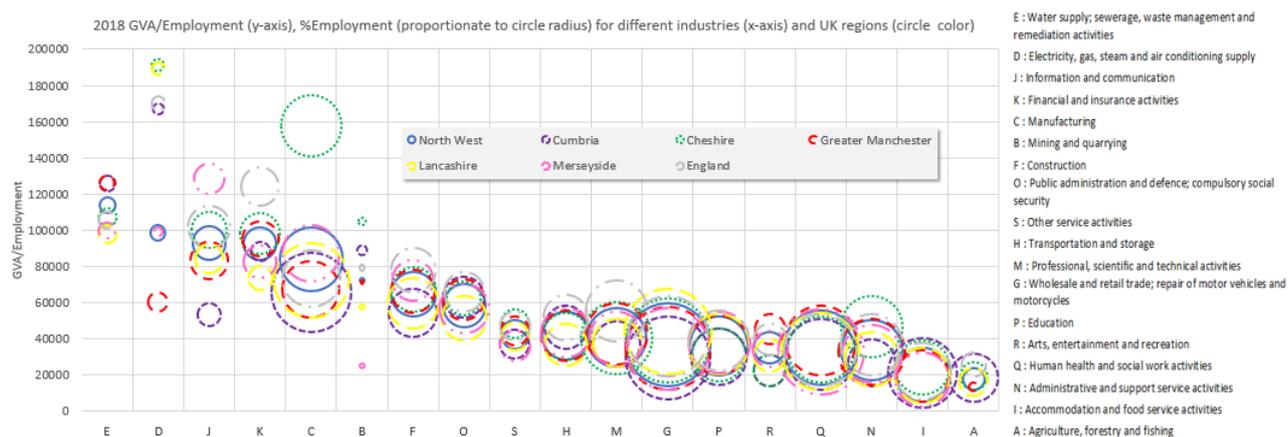
- 3.7. Figure 4 illustrates the north-west’s in-sector productivity challenge by showing where the region sits in sectoral productivity terms compared to other regions in the UK. In only one sector – manufacturing – does the region have a significant productivity advantage. In multiple sectors, which collectively account for more than 30% of employment, productivity is more than 10% below the national average – including finance and insurance; professional, scientific and technical, production and agriculture; transportation and storage; and construction. Common factors identified in the local economic strategies and other plans produced by regional bodies for this low business productivity include: mismatches between skills supply and employer demand; low levels of technological intensity and innovation adoption; deficiencies in business leadership and management; and low levels of engagement with international markets (see for instance HMG/GMCA 2019).
- 3.8. Figure 5 looks at how productivity by sector varies in different parts of the region (based on GVA per job as GVA per hour worked is not available at a sectoral level below the NUTS1 level). It shows that for most sectors productivity levels are relatively close, albeit with important variations in performance. However, setting aside the small sectors of water supply, electricity/gas, and mining/quarrying, there are three clear outliers: manufacturing in Cheshire which is significantly more productive than other parts of the region and UK; information and communication in Liverpool which is also significantly more productive than other parts of the region and UK; and financial and insurance activities where all five sub-regions are significantly less productive than the UK average.

Figure 4: GVA per hour by sector (excluding real estate), 2018 (experimental data)



Source: ONS (2020a), Industry by region, output per hour (current price)

Figure 5: GVA per job by sector (excluding real estate), 2018



Source: ONS (2020b) and Business Register Employment Survey.

- 3.9. Another important consideration is that the North West, as with the UK as a whole, is a predominantly SME-based economy (only 0.4% of firms in the area employ more than 250 people) with relatively few headquarters of national or major international companies. Just four FTSE 100 companies are headquartered in the region (Auto Trader, B&M, JD Sports, and United Utilities). While it is difficult to directly measure, it is also thought the activities of national and international firms in the region are disproportionately in lower productivity ‘back office’ type functions and are more likely to serve regional rather than national or international markets (Transport for the North, 2016), which have lower productivity enhancing spill-over effects to proximate industries.
- 3.10. This would help to explain why the north-west exports less than would be expected for a region of its size, particularly for service exports – the latest data show that the region accounted 9.6% of UK GVA but just 9.0% of goods exports and 7.0% of service exports. Firms that engage in international markets tend to be more productive and resilient to economic shocks. Foreign-owned firms also tend to be more productive (and export more) and levels of inward investment to the region are significantly below the highly productive London and south-east – the north-west attracted 73 inward investment projects in 2019 which was broadly in line with Scotland (101) and the south-east (83), but far behind London (538) which is Europe’s standout performer particularly for the fast growth, high productivity technology and innovation sectors (EY, 2020). Anecdotal evidence suggests that inward investment in the region has disproportionately gone into lower productivity sectors (hotels, leisure, call centres and so on) and residential property which provide important jobs but do little to enhance productivity.
- 3.11. The low productivity seen across sectors may also reflect lower levels of entrepreneurialism, risk taking and innovative culture compared to higher performing regions. While business start-up and failure rates are broadly in line with national averages, they lag significantly behind the rates seen in London. There is also some evidence that recent increases in business start-ups have been driven by a shift to the ‘gig economy’ and involuntary self-employment which is creating more significant volumes of low productivity, low growth potential start-ups than in other parts of the country (UoM, 2020b). Further work into the types of business that are starting up is required to understand the extent to which this is the case.

Frontier and foundational sectors

- 3.12. Looking to the future, it is important to understand areas where the north-west has comparative advantage and where there is the potential to create new, good quality jobs at the productivity frontier. It is also important to understand which parts of the economy are so important to shared prosperity that they cannot afford to be ignored.

- 3.13. At the frontier, the 2016 Northern Powerhouse Independent Economic Review identified four ‘prime capabilities’ where the north of England has existing highly productive sectoral strengths and R&D assets which are, or have the potential to be, internationally significant: advanced materials and manufacturing, health innovation, energy, and digital industries. Figure 6 provides a snapshot of some of the strengths and specialisms that were highlighted in each north-west Local Enterprise Partnership (LEP) area in these prime capabilities, as well as other strengths that are more niche specialisms for individual areas.
- 3.14. Concentrations of advanced forms of manufacturing, energy (particularly nuclear energy), chemicals, and life sciences are spread widely across the region. Digital and creative industries were identified as being of particular importance in the major cities of Liverpool and Manchester – although the rapid digitalisation of all parts of the economy has seen digital become a key theme for all the region’s LEPs in recent years. Niche strengths include port and maritime activity in Liverpool (Liverpool City Region has recently been announced as one of the UK’s new Free Ports), aerospace in Lancashire, and agri-food in Cheshire & Warrington and Cumbria. Verifying and building on these areas of comparative advantage, and understanding how they can be better joined up and integrated into an innovation ecosystem, will be important in ensuring that the region’s frontier industries are able to maintain and increase their competitiveness.
- 3.15. COVID-19 has shone a new spotlight on the ‘foundational economy’. Foundational economy sectors (such as retail, hospitality, transport, education, health and other public services) are essential for the functioning of society and the economy – evidenced by their ‘key worker’ status in the current pandemic (UoM, 2020c) – but they tend to be locally orientated and non-tradable. There is significant diversity between and within these sectors but collectively they also tend to be low productivity (as measured by GVA) and are growing as a share of total employment. One part of the foundational economy that has seen reductions in employment over the past decade is the public sector. Between 2009 and 2019, public sector employment – generally stable jobs on above average incomes that can act as anchors for the local economy with significant local multiplier effects – fell by 133,000 in the region (IPPR, 2019). Improving the quality of jobs and outputs in foundational economy sectors will be essential for future prosperity, which may require new measurement methods to ensure that productivity impacts are effectively captured. Public sector productivity, particularly in the health sector (Coyle et al, 2021), is an area of keen interest in the region, given the disproportionate share of employment it accounts for and the poor health outcomes prevalent in the region.
- 3.16. Finally in this section, the need to decarbonise all aspects of society presents opportunities for the region to build on existing assets and sources of comparative advantage to move into new sectors. Several of the region’s LEPs and local authorities have set ambitious carbon reduction targets for their areas to reach net zero ahead of the UK’s 2050 target. The Net Zero North West programme has recently been awarded funding by the UK government to develop its ambitious plans to create a low carbon industrial cluster by 2030 with a focus on renewables, hydrogen, carbon capture usage and storage, nuclear and smart grids which is a major regional focus of activity. However, the shift to zero carbon creates challenges for the existing carbon-intensive sector to rapidly decarbonise their operations, particularly in the region’s high emitting industrial and domestic energy sectors (UoM 2020d). Further work is required to understand the impact on productivity of an accelerated shift towards net zero in the region.

Figure 6: Example sectoral strengths and specialisms in the north-west

	Cheshire & Warrington (C&W)	Cumbria	Greater Manchester (GM)	Lancashire	Liverpool City Region (LCR)
Manufacturing	Adv engineering, esp automotive	Adv manufacturing, inc nuclear submarines	Adv manufacturing - inc. engineering, materials textiles, food/drink	Adv manufacturing, esp aerospace and automotive	Adv manufacturing, inc. automotive, food/drink, glass and shipbuilding
	Chemicals			Chemicals	Chemicals
Health innovation	Life sciences, inc. pharmaceuticals	Biopharma manufacturing	Life sciences, inc. pharma, biotech, cancer		Life sciences
			Health system reform inc. clinical trials, analytics, devices		Digital Health Systems
			Health and biomedical academic and clinical research		Health research - inc. infectious and pancreatic disease and paediatrics
Energy	Energy, inc. nuclear	Nuclear power	Nuclear (research)	Nuclear	Nuclear
		Offshore wind	Low carbon goods and services	Offshore wind	Offshore wind and tidal
					Hydrogen
Digital			Creative industries		Advertising and marketing
			Digital and ICT		Digital and ICT
Other	Financial & professional services	Tourism	Financial & prof services, inc. legal, accounting, consulting, finance	Legal and accounting	Port activity - freight, logistics, maritime
	Agri-tech and food	Agri-Food		Tourism	Legal, maritime insurance & wealth management

Source: Adapted from Transport for the North (2016).

Geography and place

3.17. Map 2 shows how GVA per hour productivity is distributed across the region. It is striking that differences in productivity within the north-west, as with the UK as a whole, do not conform to international patterns of large productivity gaps between high performing cities and lagging towns and rural areas (McCann and Vorley, 2021). High and low productivity areas are distributed across the region and frequently sit side by side with each other. In what is a highly fragmented economic geography, the key features to note are:

- The most productive local authority districts in the north-west are in semi-rural and urban fringe locations – Cheshire East (£42.20), South Ribble (£40.50), Halton (£39.40) and Pendle (£37.60) – which are areas with concentrations of very high value but relatively low employment advanced manufacturing, life sciences, aerospace and chemicals industries. The location of these industries reflects the presence of natural resources, economic and strategic legacies, and a legacy of contingent past decisions, though they have diversified from these initial starting points. Often this high productivity performance can be ascribed to a small number of highly productive companies that masks underperformance in other sectors and SMEs.
- There is a large band of medium to high productivity activity running east-west broadly along the path of the Manchester Ship Canal, covering central and southern Greater Manchester, large swathes of Cheshire and Warrington, and southern Merseyside. This captures many of the region’s industrial strengths in chemicals, life sciences and advanced manufacturing, as well as the concentrations of high productivity services in and around the cities of Manchester and Liverpool.
- All four of the region’s worst performing districts in productivity terms are within the boundaries of the major city regions of Greater Manchester and Merseyside. Together with parts of southern Lancashire, these districts form a parallel east-west band of low productivity post-industrial towns and semi-rural areas that stretches from Oldham in the east to West Lancashire on the coast.
- Coastal areas in the north-west tend to have medium to low levels of productivity, with the very notable exception of Barrow-in-Furness where the submarine and naval building industry pulls up overall productivity levels.

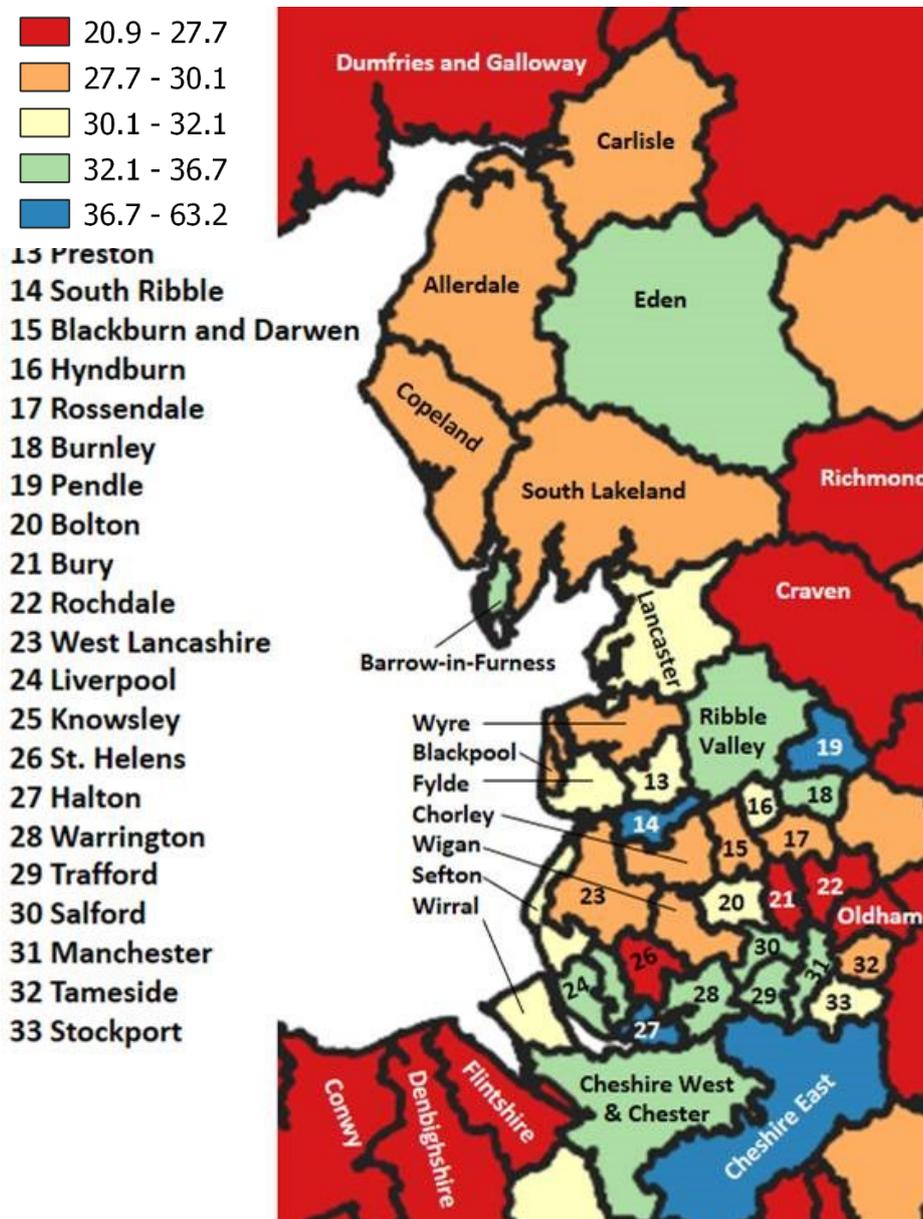
3.18. A key factor in explaining low productivity in the north-west is that Manchester and Liverpool lack the economic mass to drive growth across the region in the same way that London does for the south-east. Proximity to ‘economic mass’ is a key factor in explaining regional variations in productivity in the UK, accounting for up to two-thirds of the variation seen between areas (Rice and Venables, 2004). Outside the two major cities, this lack of agglomeration is compounded by the region’s population being spread out across a number of poorly connected smaller cities, towns and settlements, limiting access to opportunities for residents and restricting access to skilled labour and markets for employers – both of which hold back productivity growth. Moreover, many of the north-west’s most highly productive industries are located in peripheral locations that restrict the potential for them to create productivity-enhancing spill-over effects to the rest of the region.

3.19. Improving transport connectivity to better connect settlements and generate agglomeration benefits by increasing the effective size of the region’s cities and towns is therefore thought to be critical to raising productivity in the north-west and wider north of England (Transport for the north, 2019). Greater Manchester’s existing scale, assets, and location makes it best placed to generate enhanced agglomeration effects and drive growth in the region (MIER, 2009). These agglomeration arguments underpin plans for High Speed 2, which will significantly reduce journey times to London and between large urban areas in the north and Midlands. It is argued that this will improve productivity by allowing “businesses across the North West to collaborate with supply chains and research and development partners, draw on a deeper pool of skills, access new sources of finance and support networks and

secure new customers in regions across Britain” (HS2 Ltd, 2017). Strengthening agglomeration effects is also a key part of the rationale that sits behind the Strategic Transport Plan for the north, which sets out proposals to better connect the major urban areas (including through northern Powerhouse Rail) across the region as well as to improve local transport connections to make local journey times more reliable (Transport for the North, 2019).

3.20. The shift to more remote and virtual ways of working which has been accelerated by the Covid-19 has the potential to radically change the economic geography of the region. During the pandemic fewer people have been travelling to work, which has had a major negative impact on city centre economies but has led to increased spending in suburban areas (Centre for Cities, 2021). The widespread adoption of new digital technologies offers new opportunities to overcome geographic fragmentation and better join up industries and assets across the north-west. Regional disparities could reduce if more people are able to work from home on a permanent basis and higher productivity jobs become more evenly distributed. However, there are risks that more homeworking results in less innovation, lower rates of informal skills accumulation and ultimately lower productivity in the long-run. Further research is required to understand the short, medium and long-term productivity impacts of changing ways of working as a result of the pandemic.

Map 2: Productivity per hour (£), 2018

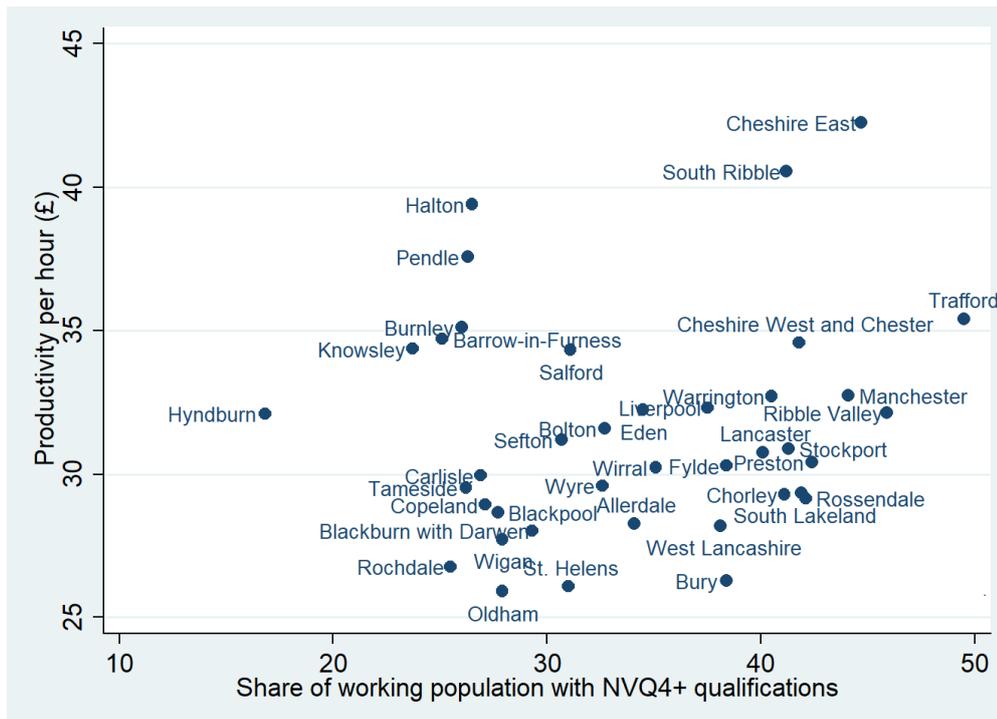


Source: ONS (2020c)

Human capital, skills and health

- 3.21. Human capital can be defined as the stock of knowledge, skills and other personal characteristics embodied in people that helps them be productive (Jong et al, 2021). It can be created through formal education but also through informal and on-the-job learning and life experience. Despite challenges with measuring human capital on this broad definition, it seems clear that the north-west has lower stocks of human capital than higher productivity parts of the country. Using qualifications as a proxy, for example, the region has fewer people trained to level 4 and above (the equivalent of a first year of a degree) than the national average (36.1% compared with 40.2% respectively). Conversely, it has a higher number of residents with no qualifications (8.7% compared with 7.9% respectively). However, whether this is a cause rather than a consequence of economic underperformance is contested (Carneiro, et al 2020).
- 3.22. Improving the performance of education and skills systems has been, and continues to be, a major part of efforts to improve productivity in the region (see HMT, 2021). Issues exist on both the supply-side (education and skills systems that are complex, fragmented and do not coordinate with demand-from employers) and the demand side (the business model choices made by employers and failures to effectively capitalise on the skills that are available to them). National and local policy has focused heavily on supply side reforms and attempting to strengthen the linkages between education and training systems and employer demand, with limited success. Much less attention has been paid to the demand-side despite mounting evidence for underemployment in the north of England (see Rafferty et al, 2013). Moreover, the UK's centralised education and skills system means that the same supply-side issues are seen across both high and low productivity regions, and are not unique to the north-west or other underperforming regions (see D'Arcy et al, 2019) further strengthening the case for the skills issue in the region being more on the demand-side than the supply-side.
- 3.23. Differences in human capital is also an explanatory factor in differences in productivity seen at a sub-regional level. Figure 7 illustrates how, in general, GVA per hour increases with the share of the working population with a degree level or above qualification at a local authority level. In the north west the correlation is relatively weak (a correlation co-efficient of 0.15 compared to 0.46 for the whole of Great Britain) which is thought to be a result of the impact of high productivity manufacturing sectors (which do not always require degree level qualifications), cross border commuting patterns (qualifications are recorded based on where an individual lives whereas productivity is recorded at the place of work), as well as potentially this lack of demand for higher level skills from employers in the region.

Figure 7: Local authority productivity and share of population with above degree level qualifications, 2018



- 3.24. There is increasing recognition of the role of poor physical and mental health on productivity in the region. It has long been known that people with ill health are much more likely to be out of work, but recent research by the Northern Health Science Alliance has shown that working people in the north of England who experience a spell of ill health also have lower wages and are more likely to lose their jobs in the future than similar individuals in the rest of England (NHS, 2018). There is also evidence of a more adverse effect to the northern population from COVID-19 (UoM, 2020a). This aligns with the conclusion of the Greater Manchester Independent Prosperity Review that health needs to play a much greater part of the discussion around productivity (GMCA, 2019). More broadly, issues of employee wellbeing and productivity are of increasing interest for businesses and policymakers, and an area where further research is required to identify best practice approaches.
- 3.25. Finally, businesses and policymakers in the north-west are increasingly taking an interest in issues around diversity in the workforce. While improved diversity is an end in itself, there is a growing body of research nationally and internationally on the impact of diversity on growth and there are plausible arguments that greater diversity can be both beneficial and harmful (Lee, 2011). There is little research on how issues of diversity play out in the north-west and what types of intervention are successful in improving productivity and diversity in tandem. This is an area where further research is required.

Investment and knowledge capital

- 3.26. Low levels of investment by the public and private sectors are thought to be another significant explanation for the north-west's poor productivity performance. The UK is in the bottom third of OECD countries for the share of income going to fixed capital formation, R&D spending, and hard and soft infrastructure investment (Mason et al., 2018) and the North West Business Leadership Team's 2016 review of productivity argued that "decades of underinvestment in the North West's infrastructure, skills base and business support and innovation networks has left much of the region struggling to compete in a rapidly advancing global economy" (NW BLT, 2016).
- 3.27. The Northern Powerhouse Independent Economic Review found that the 'investment gap' (measured by per capita fixed capital expenditure in the public and private sectors) between the north and the rest of the UK had widened notably since 2008. The Review also argued that lack of access to private sector investment funds held back productivity growth and that there was an under-representation of investment executives and venture capitalists in the north, in part because market demand is insufficient to attract and support these activities (Transport for the North, 2016). Research undertaken in 2021 by the North West Business Leadership Team came to a similar conclusion highlighting that, while most national institutions such as retail banks have a presence in the north-west, providing a sufficient supply of capital, there is more limited capacity in terms of skills and expertise to research, engage and complete deals, particularly for early stage and angel finance (NW BLT, 2021).
- 3.28. The extent of the discrepancy in the level of public investment between regions is contested. Data released by HM Treasury show that in terms of overall public spending per head, the north-west sits behind the three devolved administrations and London at £10,204 per head in 2019-20. Total public spending per head in the north-west was 3% above the UK average. However, there is a much wider discrepancy in capital spend between the regions, with capital spend in the north-west falling below the UK average and being around a third lower than that seen in London and Scotland. Other approaches to allocating spending, focused on transport, identify even greater discrepancies, particularly between London and the other English regions (Coyle and Sensier, 2020).
- 3.29. The reasons for the different spending levels seen between regions are complex, but there is a very plausible case that government spends too much on dealing with the costs of low productivity in the North West (through higher welfare and healthcare costs in particular) and not enough on productivity enhancing investments into areas such as infrastructure, skills, and innovation. Research by Harding and Nevin (2015) concludes that "(a) the Barnett formula, which sets patterns of public expenditure allocations to the devolved territories, continues to benefit Scotland, Wales and northern Ireland relative to English regions, (b) spending flows to regions within England remain nominally 'fair' in that public spending per head is weighted towards regions in which economic performance is poorer and demand for welfare spending higher, but (c) London, which is simultaneously a rich AND poor 'region' is a significant exception to this rule." For the north-west their analysis shows that in 2012/3 public spending on welfare services (health plus social protection) was 8% higher than the UK average, but spending on economic affairs and education was 4% below.

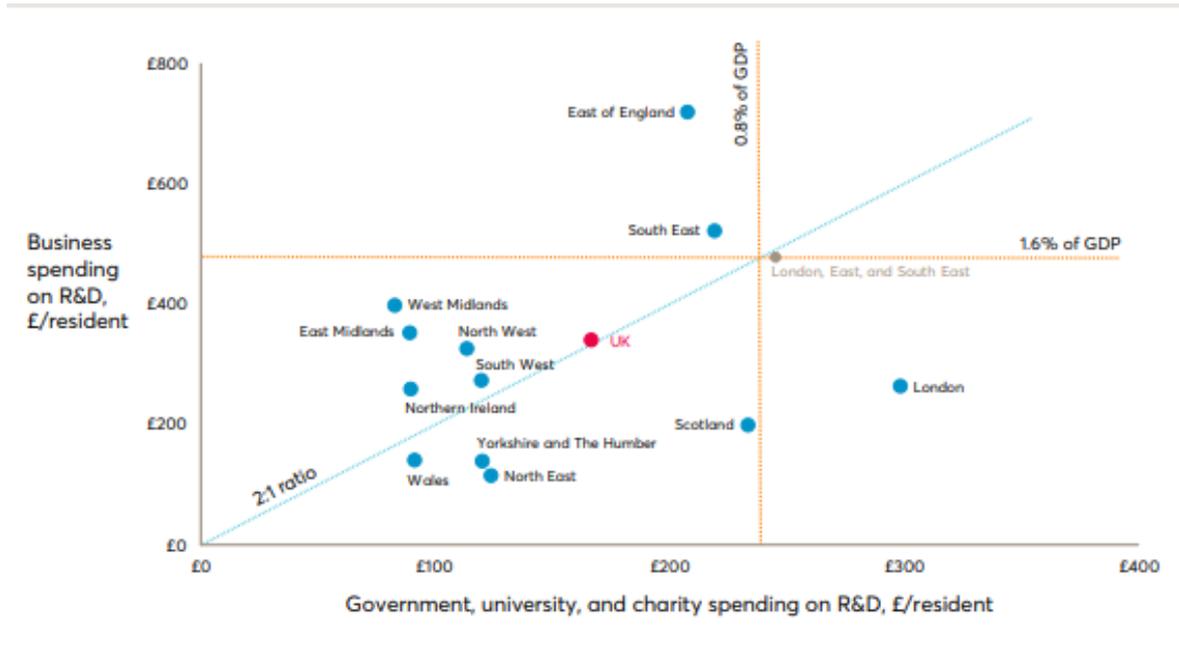
R&D investment

- 3.30. Investment into research and development is a fundamental driver of productivity and future competitiveness. The UK's overall performance with regard to R&D has been described as "mediocre at best" (Forth and Jones, 2020) and, in aggregate, the north-west falls below these mediocre benchmarks. However, there is a notable difference between levels of business and non-market (i.e. government, university and charity) investment, as levels of business R&D spend are in line with the national average but this is not matched with non-market investment which is significantly below the national average and less than half that seen in the 'golden triangle' (London, the south east and east)

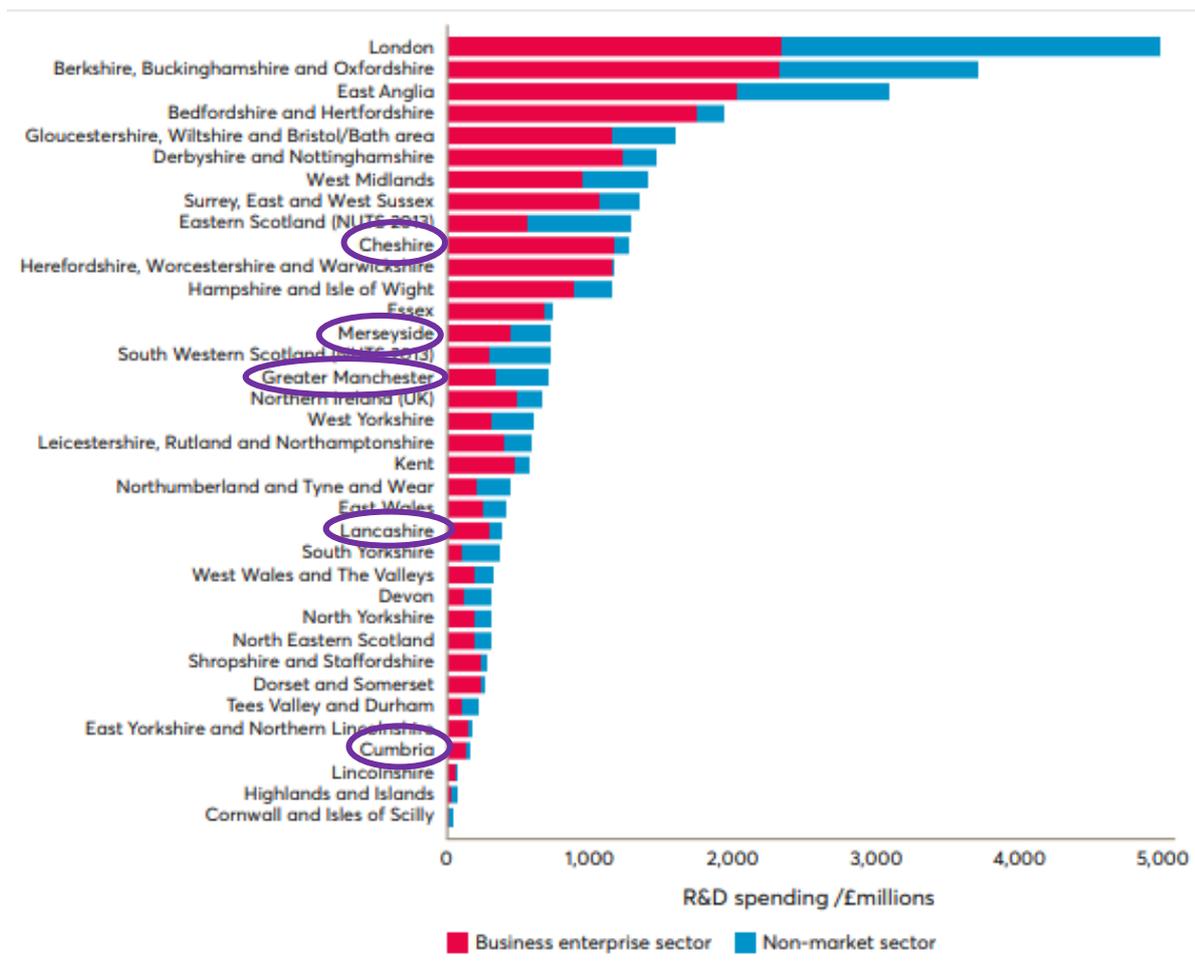
and Scotland. Government has set an ambition to increase the level of public and private sector R&D spending to 2.4% of GDP by 2027. This will require a substantial (41%) increase in overall R&D spending in the UK and implies a significant uplift in public spending to crowd-in private sector investment. Meeting the 2.4% target would be an even more significant uplift for the north-west given its lower starting position, although the high business to public spending ratio suggests that any increase in public spending could generate a higher business investment multiplier in the region.

- 3.31. Looking more deeply, there are again significant intra-regional disparities in performance, with Cheshire (and its concentration of high value chemicals and pharmaceuticals) in particular standing out as a region with very high business R&D spend which drives the performance of the whole region. In contrast, business investment is much lower and public sector investment much higher in the major urban areas of Greater Manchester and Merseyside, which is where the region's main universities and science assets are located. A key risk for the region around R&D spend is the reliance on a handful of large companies who anchor significant high productivity clusters, particularly in the aerospace, life sciences, and energy sectors. Despite the fact that Cheshire retains a strong life sciences-led R&D cluster, AstraZeneca's 2013 decision to relocate its R&D facility in Cheshire to Cambridge is a reminder that these high performing ecosystems should not be taken for granted.
- 3.32. As well as low levels of R&D spend, there is also evidence of slow diffusion of new technologies into SMEs (Jones, 2014 and Jibril et al, 2020). The CBI characterise this as not having enough 'magpies', who search out new technologies and management approaches and readily adopt them, and having too many 'ostriches', who stick with what they know (CBI, 2017). Research undertaken by the North West Business Leadership Team jointly with Innovate UK suggests that the region's businesses punch below their weight when accessing national innovation funding: north-west organisations were awarded 6% of Innovate UK funding between 2007 and 2017, compared to the region's 10% share of UK businesses and 12% share of UK expenditure on R&D by businesses (NW BLT, 2018). While the sums involved are relatively small compared to overall public and private investment in R&D (amounting to around £86m of 'lost' funding over a decade), it is further evidence that the region's innovation ecosystem is not performing as effectively as it might. It is not completely clear to what extent the challenge is on the supply-side (national programmes not meeting the needs of regional business) or demand-side (business models or cultural barriers within firms), and the likely answer is that it is both. The rapid digitalisation of all aspects of the economy clearly presents an opportunity to raise productivity in all sectors and create new industries, but there is a risk that the region gets left behind if businesses do not adopt these new technologies. The Made Smarter programme, being piloted in the north-west, is a major initiative seeking to help manufacturing firms introduce digital tools and technologies to boost productivity and growth and it will be important to take the lessons from this pilot, as well as other local initiatives supporting firms to adopt new technologies such as LCR4.0 in the Liverpool City Region, and apply them to other parts of the economy which are also on the verge of a digital transformation.
- 3.33. One explanation for the poor innovation performance in the north-west and other English regions is the lack of innovation ecosystems that effectively tackle supply side and demand side issues at the same time to translate and diffuse new technologies and approaches into the region's business base (Jones, 2019). Within the region there is increasing focus on how place-based innovation districts can bring together clusters of public and business research and development activity, institutions for skills development, and networks of expertise, to boost innovation, catalyse private sector investment, and lead to productivity growth. For instance, city centre innovation districts are being progressed in both Manchester and Liverpool, the highly successful Advanced Manufacturing Research Centre (part of the University of Sheffield) is establishing a new facility in Lancashire, and the science-focused Alderley Park and Daresbury campuses in Cheshire are both expanding their commercial footprints. It will be important that these developments are able to learn the lessons from successful national and international exemplars of innovation-led growth and regeneration.

Figure 8: R&D spending by region and sub-region, 2016



Regional distribution of UK R&D spending by NUTS1 region, expressed per resident for the market-led and non-market-led sectors.



Source: Jones and Forth (2020)

Institutions and governance

- 3.34. There are multiple aspects of the north-west's productivity challenge that are rooted in the way national, regional and local institutions, policies and governance systems interact. There are three principle components of this: (1) the impact of explicit regional policies that are targeted by the UK government to address regional economic challenges; (2) the implicit regional implications of nominally 'place-blind' mainstream policies whose design rarely takes spatial implications into consideration but whose impacts, by their very nature, are geographically uneven, and therefore affect regions differentially; and (3) the role that regional institutions play, in administrative terms, in the sub-national delivery of public policies and services (Harding and Nevin, 2015).
- 3.35. The highly centralised nature of the UK state means that the implicit regional impact of mainstream policies 'drowns out' the impact of explicit regional policies and the marginal improvements that sub-national delivery of national policies and service can deliver within a highly centralised English governmental system (see eg. Uyarra and Flanagan, 2010 who explore this for the case of the North West). This is a decades old issue in the English regions, but one that has been exacerbated by local government being disproportionately affected by austerity since 2010 (McCann 2016). The result is that all of the main levers the state has over productivity in the north-west (including policies around industry, tax reform, science and innovation, education and skills, infrastructure, and transport) are heavily centrally controlled. At the same time, the UK's centralised policy making is fragmented functionally with a poor track-record of being able to join up decisions and programmes across government departmental boundaries. This over-centralisation stifles regional and local initiative and means that policies pay too little attention to local circumstances (van Ark and Venables, 2020). Recent research by the OECD has found that further devolution has the potential to significantly improve labour productivity in the UK (Jong et al, 2021 and Gal and Egeland, 2018).
- 3.36. Governance in English regions has been described as a piecemeal and inconsistent "patchwork quilt" with the fit between Mayoral Combined Authorities, Local Enterprise Partnerships (LEPs), local authorities, Growth Deal Boards, Towns Deal Boards and other nationally and locally created institutions and programmes "at best confusing and at worst chaotic" (Shaw and Tewdwr-Jones, 2020). Figure 9 sets out the key elements of the sub-national governance structures in the region. An additional layer may be added to this in the near future as the Prime Minister has announced government's intention to create a new Northern Growth Body that will 'work closely with government and champion growth opportunities' across the north-west, north-east and Yorkshire (LGA 2020). At the time of writing it is unclear what the remit of this body would be and there remains a shortage of high quality evidence about what policies should be best managed at what geographic level.
- 3.37. Five Local Enterprise Partnerships are nominally tasked by the UK government to improve productivity in the region. However, they have only ever received lukewarm support from government and have not been provided with revenue or capital budgets, or influence over the relevant policy levers of either national or local government, that are comparable to the scale of economic challenges faced. Indeed, they are funded at a significantly lower level than the North West Development Agency they replaced, which itself only ever received a small proportion of government spending on economic development activity (Forth and Jones, 2020). A form of deal-based devolution has been progressed since 2014 with Greater Manchester and the Liverpool City Region establishing Mayoral Combined Authorities (MCAs) in return for enhanced local powers and resources. Other sub-regions in the north-west are considering local government reform, including potentially adopting the MCA model. MCAs have influence over a wider set of resourcing decisions (including in transport, spatial planning, skills and employment and, uniquely for Greater Manchester, health and social care) and provide a greater capacity to coordinate activity, manage delivery and innovate, albeit within parameters which are still heavily controlled by national government (Holden, 2020). As well as this, limited fiscal incentives, including partial retention of business rate growth and of additional council tax income generated by

new residential development, have been introduced in an attempt to encourage local authorities to prioritise growth.

- 3.38. The result of the current system is that much of the local capacity that exists is spent coordinating multiple agencies, attempting to influence national policies, and bidding to disparate central funding pots based on expectations about what government will fund not what is needed, as well as national and regional strategies routinely not being implemented due to funding not being available or changing political priorities (Seaford et al, 2020). The result is fragmentation, duplication, and short-termism with the effect that interventions deliver less than the sum of their parts and fail to inspire confidence and crowd in investment from the private sector. Equipping places with appropriate institutions and what Andy Haldane, then chief economist at the Bank of England, referred to as the “holy trinity of powers, monies and people” to secure the local foundations for productivity growth will be critical to delivering an effective and long-lasting solution to the ‘levelling up’ problem.
- 3.39. In addition to weaknesses in the public sector institutional framework, there are also less well explored gaps in private sector institutions. The previous section highlighted the relative lack of headquarters of large national and international firms in the north-west which can drive regional productivity through spill over effects. Anecdotal evidence also indicates a lack of mid-sized family-owned ‘mittelstand’ firms that have strong regional ties and take a long-term approach. Industry bodies, such as Chambers of Commerce, and trade unions also have less of a role in local economic policy formulation and delivery than seen in higher performing European economies. The lack of well-functioning ecosystems involving business, governments, universities and other institutions at a local, regional and national level operating in a coherent coordinated and long-term manner is a plausible explanation for the region’s regional productivity problem (Jones, 2016). Further work is needed on how the north-west’s institutions and governance structures can be strengthened to support productivity growth across the region.

Figure 9: Sub-national governance structures in the north-west

	Cheshire & Warrington (C&W)	Cumbria	Greater Manchester (GM)	Lancashire	Liverpool City Region (LCR)
Mayoral Combined Authorities			GMCA		LCR CA
Local Enterprise Partnerships	C&W LEP	Cumbria LEP	GM LEP	Lancashire LEP	LCR LEP
Upper tier and unitary authorities	Cheshire East	Cumbria CC	Bolton	Lancashire CC	Halton
	Cheshire W & Chester		Bury	Blackpool	Knowsley
	Warrington		Manchester	Blackburn w. Darwen	Liverpool
			Rochdale		Sefton
			Oldham		St Helens
			Salford		Wirral
			Stockport		
			Tameside		
			Trafford		
			Wigan		
Lower tier authorities		Allerdale		Burnley	
		Barrow		Chorley	
		Carlisle		Fylde	
		Copeland		Hyndburn	
		Eden		Lancaster	
		South Lakeland		Pendle	
				Preston	
				Ribble Valley	
				Rosendale	
				South Ribble	
			West Lancashire		
			Wyre		
Growth Deal Boards		Borderlands Partnership*			
Towns Deal Boards	Crewe	Barrow-in-Furness	Bolton	Blackpool	Birkenhead
	Runcorn	Carlisle	Cheadle	Darwen	Southport
	Warrington	Cleator Moor	Oldham	Leyland	St Helens
		Workington	Rochdale	Nelson	
			Preston		

* The Borderlands Partnership, created in March 2021, include Cumbria County Council and Carlisle Council in north-west England, Northumberland County Council in north-east England, and the Scottish Borders Council and Dumfries and Galloway Council in southern Scotland.

4. Future research priorities

- 4.1. There are a wide range of areas where additional research could add significant value to local, regional and national efforts to improving productivity in the region. Based on an assessment of gaps in understanding, key north-west challenges, and the potential for business and policy impact, the North West Productivity Forum has identified five areas where further research is required.

Strengthening productivity data in the North West

- 4.2. Developing a stronger understanding of the region's business base, and the key factors that drive and hold back productivity in the region compared to other parts of the UK and global competitors, will be essential to support the development of approaches that are effectively designed for the needs of the north-west. Issues of interest include the balance between 'back office' and 'front office' activities; a possible lack of large company headquarters and 'mittelstand' firms; differences in entrepreneurialism and management culture; low levels of R&D investment and innovation adoption; and low levels of engagement with international markets. ***It will be particularly important to undertake work to improve the quality of regional productivity data to provide a sound basis for 'like for like' comparisons across sectors and geographies and develop a better understanding of what drives business investment decisions and productivity performance.***

Human capital and productivity

- 4.3. Raising human capital has been recognised as a key factor in strengthening productivity in the region for some time. However, there are significant gaps in understanding. Issues of interest include providing evidence on the extent to which low skills levels are primarily caused by supply or demand issues; strengthening the evidence base around 'real time' and longer term employer skills requirement and whether this can improve productivity; developing the evidence base on the impact of diversity on productivity in the region and how diversity and productivity can be raised in tandem; the impact of poor physical and mental health and health inequalities on productivity; and better understanding skills needs to accommodate the growth of the net zero economy. ***It will be particularly important to identify interventions and approaches to raise productivity in frontier and foundational sectors by strengthening human capital, focused on better understanding issues around leadership and management, diversity, health and wellbeing, and net zero skills.***

Future sources of productivity growth

- 4.4. The north-west's economy is not static. Understanding what the region is currently good at, as well as what it has the potential to be good at in the future, and nurturing these capabilities will be critical to future economic competitiveness. Equally, it is also important to have a better understanding of the dynamics within the foundational economy, and the dynamics between frontier and foundational industries, as these sectors are simply too large and important to future prosperity to ignore. Major transitions will shape these future sectoral dynamics, the most immediate one being the restart and recovery following COVID-19 but the implications of the transition to a zero carbon economy and the digitalisation of all sectors also need to be better understood. ***It will be particularly important to develop a stronger evidence base on the potential productivity impacts on the region of the transition on the digitalisation of all sectors and the interventions that can enable a technologically diverse, sustainable and productive business base, particularly in light of the requirements that will be demanded from the move to net zero.***

Geography and place

- 4.5. Manchester and Liverpool 'punching below their weight' and poor connections between the region's smaller cities, towns and rural communities are significant barriers to higher productivity in the region. Government's Plan for Growth sets out a vision for every region of the UK to have at least one internationally competitive city at its heart that drives prosperity in the surrounding region. Together

with regenerating town centres, this is at the heart of government's mission to tackle geographic disparities and 'level up' the country. An updated understanding of the economic geography of the region, and the current and future trends that are shaping it (particularly changing commuting patterns and employment and residential choices post-COVID-19), will be essential to ensure that policies are implemented that fit with the unique characteristics of the north-west. ***It will be particularly important to strengthen understanding of why the region's thriving centres fail to pull up adjacent areas by exploring issues around transport, labour market and supply chain integration, demand links to foundational sectors, and other connectivity issues.***

Governance and productivity

- 4.6. Policy fragmentation and lack of local institutional capacity hold back productivity growth in the north-west. Significant reforms have taken place in recent years (including directly elected Mayors in the two large city regions) and further reform is on the horizon including local government reorganisation in Cumbria and Lancashire, the imminent national Devolution and Levelling Up White Papers, and the potential creation of a new Northern Growth Body. Local governments in the north-west are all working to progress devolution under the current 'deal making' process. However, little is known about the impact of previous reforms, the optimal mix of decision making by different tiers of government, and how the structures, partnerships, and changes needed at the local, regional and national level to create high performing public, private ecosystems that join up policies, interventions and investments and foster a long-term aligned approach to productivity growth. ***It will be particularly important to undertake work to develop case study evidence of what can be learnt from countries (such as Germany) that have successfully raised productivity in previously lagging regions.***

References

- Carneiro, P., Cattan, S., Dearden, L., van der Erve, L., Krutikova, S. and Macmillan, L. (2020). The long shadow of deprivation: differences in opportunities across England, Social Mobility Commission, <https://www.gov.uk/government/publications/the-long-shadow-of-deprivation-differences-in-opportunities>.
- Carrascal-Incera, A., McCann, P., Ortega-Argilés, R. and Rodríguez-Pose, A. (2020). UK Interregional Inequality in a Historical and International Comparative Context. *National Institute Economic Review*, 253, R4-R17. doi:10.1017/nie.2020.26
- CBI (2017). From Ostrich to Magpie: increasing business take up of proven ideas and technologies. Confederation of British Industry. <https://www.cbi.org.uk/media/1165/cbi-from-ostrich-to-magpie.pdf>
- Centre for Cities (2021). Highstreets Recovery Tracker. Centre for Cities. <https://www.centreforcities.org/data/high-streets-recovery-tracker/> Accessed 6th April 2021.
- Coyle, D. (2014). *GDP: A brief but affectionate history*, Princeton University Press: Princeton and Oxford.
- Coyle, D. and Sensier, M. (2020). The Imperial Treasury: appraisal methodology and regional economic performance in the UK, *Regional Studies*, 54:3, 283-295, <https://doi.org/10.1080/00343404.2019.1606419>.
- Coyle, D., Dreesbeimdieck, K. and Manley, A. (2021) Productivity in UK healthcare during and after the Covid-19 pandemic. The Productivity Institute working paper No.002. https://www.bennettinstitute.cam.ac.uk/media/uploads/files/Productivity_in_UK_Healthcare.pdf
- D'Arcy, C., Gardiner, L. and Rahman, F. (2019). Low Pay, Technical Report for the GM Independent Prosperity Review by the Resolution Foundation, <https://www.greatermanchester-ca.gov.uk/what-we-do/economy/greater-manchester-independent-prosperity-review/>
- EY (2020). Building back better: EY Attractiveness Survey. https://assets.ey.com/content/dam/ey-sites/ey-com/en_uk/topics/attractiveness/ey-uk-attractiveness-survey-may2020.pdf
- FitzGerald, J. (2015). Problems Interpreting National Accounts in a Globalised Economy – Ireland, Economic and Social Research Institute, Dublin, https://www.esri.ie/system/files?file=media/file-uploads/2015-07/QEC2015SUM_SA_FitzGerald.pdf
- Forth, T. and Jones, R.A.L. (2020). The Missing £4 Billion: making R&D work for the whole UK, NESTA. https://media.nesta.org.uk/documents/The_Missing_4_Billion_Making_RD_work_for_the_whole_UK_v4.pdf
- Gal, P. and Egeland, J (2018), "Reducing regional disparities in productivity in the United Kingdom", OECD Economics Department Working Papers, No. 1456, OECD Publishing, Paris, <https://doi.org/10.1787/54293958-en>
- Geary, F. and Stark, T. (2016). What happened to regional inequality in Britain in the twentieth century? *Economic History Review*, 69, 1 pp. 215–228.
- GMCA (2019). Greater Manchester Independent Prosperity Review, <https://www.greatermanchester-ca.gov.uk/what-we-do/economy/greater-manchester-independent-prosperity-review/>
- GMCA (2019a). Audit of Productivity. https://www.greatermanchester-ca.gov.uk/media/1911/gmipr_tr_auditofproductivity.pdf
- HMT (2021) Build Back Better: Our Plan for Growth. Available at: <https://www.gov.uk/government/publications/build-back-better-our-plan-for-growth>
- HMG/GMCA (2019). Greater Manchester Local Industrial Strategy. Available at <https://www.greatermanchester-ca.gov.uk/media/2132/gm-local-industrial-strategy-web.pdf>
- Harding, A and Nevin, B. (2015). Cities and public policy: a review paper. Future of cities: working paper. Government Office for Science. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/455888/gs-15-29-future-cities-public-policy-review.pdf

- Holden, J. (2020). Trailblazing a Local Industrial Strategy for Greater Manchester, Bennett Institute “An Industrial Strategy for Tomorrow” Policy Series paper.
- HS2 Ltd, (2017). HS2: Getting the best out of the North West. https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/663644/CS822d - HS2 Regional Briefing - North West.pdf
- IPPR (2019) 1 in 4 North East Public Sector Jobs Lost Since Austerity Began News Item, available at: <https://www.ippr.org/news-and-media/press-releases/ippr-north-1-in-4-north-east-public-sector-jobs-lost-since-austerity-began>
- Jibril et al (2020). What drives productivity growth behind the frontier? A mixed methods investigation into UK SMEs. ERC Research Paper No 89, Enterprise Research Centre, University of Warwick.
- Jones, R.A.L. (2014). The UK Innovation Deficit and How to Repair It. SPERI Paper No 6, University of Sheffield.
- Jones, R.A.L. (2016), Innovation, research and the UK’s productivity crisis, SPERI Paper No 26, The University of Sheffield.
- Jones, R.A.L. (2019). A Resurgence of the Regions: rebuilding innovation capacity across the whole UK, http://www.softmachines.org/wordpress/wp-content/uploads/2019/05/ResurgenceRegionsRALJv22_5_19.pdf
- Jong, D., Tsvetkova, A., Lembcke, A., and Ahrend, R. (2021). A comprehensive approach to understanding urban productivity effects of local governments: Local autonomy, government quality and fragmentation. 10.1787/5ebd25d3-en
- Kuriakose, J., Anderson, K., Broderick, J., and McLachlan, C. (2018). Quantifying the implications of the Paris Agreement for Greater Manchester. University of Manchester. https://www.research.manchester.ac.uk/portal/files/83000155/Tyndall_Quantifying_Paris_for_Manchester_Report_FINAL_PUBLISHED_rev1.pdf
- Lee, N (2011). “Ethnic Diversity and Employment Growth in English Cities.” Urban studies (Edinburgh, Scotland) 48.2 (2011): 407–425. Web.
- LGA (2020). Government reaffirms its commitment to new northern growth body <https://www.lgcplus.com/politics/devolution-and-economic-growth/exclusive-government-reaffirms-its-commitment-to-new-northern-growth-body-05-10-2020/>
- Mason, G., O'Mahony, M., & Riley, R. (2018). What is Holding Back UK Productivity? Lessons from Decades of Measurement. National Institute Economic Review, 246, R24-R35. doi:10.1177/002795011824600111.
- McCann, P. (2016). The UK Regional-National Economic Problem: Geography, Globalisation and Governance, Routledge, London
- McCann, P. (2019). Perceptions of regional inequality and the geography of discontent: insights from the UK, Regional Studies, DOI: 10.1080/00343404.2019.1619928
- McCann, P. and Vorley, T. (2021). Productivity and the Pandemic: challenges and insights from COVID-19, Edward Elgar: Cheltenham.
- MIER (2009). Manchester Independent Economic Review, <http://www.manchester-review.org.uk/>.
- NHSA (2018). Health for Wealth: Building a Healthier Northern Powerhouse for UK Productivity. Northern Health Sciences Alliance. <https://www.thenhsa.co.uk/app/uploads/2018/11/NHSA-REPORT-FINAL.pdf>
- NIESR (2021). National Institute UK Economic Outlook: Brexit Britain in the Covid Recovery Ward. <https://www.niesr.ac.uk/publications/uk-economic-outlook-february-2021-brexite-britain-covid-recovery-ward>
- NW BLT (2016). Productivity: unlocking our potential. North West Business Leadership Team. <https://www.nwblt.com/wp-content/uploads/2017/07/NWBLT-Productivity-Report-Unlocking-our-Potential.pdf>

NW BLT (2018). Planning for a step change: Informing where the North West should focus innovation to drive up productivity. North West Business Leadership Team. <https://nwblt.com/wp-content/uploads/2018/09/Planning-for-a-Step-Change-North-West-Productivity-and-Innovation-Study-September-2018-002.pdf>

NW BLT (2021). Finance and Innovation Report. North West Business Leadership Team. <https://nwblt.com/wp-content/uploads/2020/07/NWBLT-FINANCE-INNOVATION-REPORT.pdf>

ONS (2020a). Region by industry labour productivity: Dataset ID: INDBYREG, released 5/2/2020, <https://www.ons.gov.uk/economy/economicoutputandproductivity/productivitymeasures/datasets/industrybyregionlabourproductivity>

ONS (2020b). Subregional productivity: labour productivity indices by UK NUTS2 and NUTS3 subregions: Dataset ID: SRPROD01, released 28/2/2020, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/subregionalproductivitylabourproductivitygvaperhourworkedandgvaperfilledjobindicesbyuknuts2andnuts3subregions>

ONS (2020c). Subregional productivity: labour productivity indices by local authority district, released 28/2/2020, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/subregionalproductivitylabourproductivityindicesbylocalauthoritydistrict>

ONS (2021). Subregional productivity: labour productivity indices by UK NUTS2 and NUTS3 subregions: Dataset ID: SRPROD01, released 23/7/2021, <https://www.ons.gov.uk/employmentandlabourmarket/peopleinwork/labourproductivity/datasets/subregionalproductivitylabourproductivitygvaperhourworkedandgvaperfilledjobindicesbyuknuts2andnuts3subregions>

Rafferty A., Rees, J., Sensier, M. and Harding, A. (2013). ‘Understanding the Demand for Skills and Labour in The North of England’, Applied Spatial Analysis and Policy, vol. 6, pp.143-163. DOI 10.1007/s12061-013-9089-4.

Rice, P.G. and Venables, A.J. (2004). Productivity: Understanding Regional Differences, Centre for Economic Performance, CentrePiece, 162, <https://cep.lse.ac.uk/pubs/download/CP162.pdf>

Seaford, C, et al. (2020) Achieving Levelling-Up: The Structures and Processes Needed, LIPSIT Report, November 2020, available at <https://lipsit.ac.uk/project-outputs/>

Sensier, M. and Devine, F. (2020). Understanding regional economic performance and resilience in the UK: trends since the Global Financial Crisis, National Institute Economic Review, Volume 253, pp. R18-R28, <http://dx.doi.org/10.1017/nie.2020.27>.

Shaw, K., Tewdwr-Jones, M. “Disorganised Devolution”: Reshaping Metropolitan Governance in England in a Period of Austerity. Raumforsch Raumordn 75, 211–224 (2017). <https://doi.org/10.1007/s13147-016-0435-2>

Transport for the North (2016). Northern Powerhouse Independent Economic Review, Executive Summary: <https://www.transportforthenorth.com/wp-content/uploads/Northern-Powerhouse-Independent-Economic-Review-Executive-Summary.pdf> and Core Messages: <https://transportforthenorth.com/wp-content/uploads/NPIER-Core-Messages.pdf>

Transport for the North (2019). Strategic Transport Plan, <https://transportforthenorth.com/reports/strategic-transport-plan-2019/>

UK Govt (2020). Country and regional analysis: November 2020 <https://www.gov.uk/government/statistics/country-and-regional-analysis-2020/country-and-regional-analysis-november-2020>

UoM (2020a). Health for wealth: The link between health inequalities and productivity in northern England. Policy@Manchester blog available at <http://blog.policy.manchester.ac.uk/posts/2020/06/health-for-wealth-the-link-between-health-inequalities-and-productivity-in-northern-england/>

UoM (2020b). HereToDeliver: Valuing food delivery workers in the future. Policy@Manchester blog available at: <http://blog.policy.manchester.ac.uk/health/2020/06/heretodeliver-valuing-food-delivery-workers-in-the-future/>

UoM (2020c). Recognising the role of key workers now and in the future employment landscape. Policy@Manchester blog available at: <http://blog.policy.manchester.ac.uk/posts/2020/08/recognising-the-role-of-key-workers-now-and-in-the-future-employment-landscape/>

UoM (2020d). The retrofitting challenge in Manchester. Policy@Manchester blog available at <http://blog.policy.manchester.ac.uk/posts/2020/07/the-retrofitting-challenge-in-manchester/>

Uyarra E, Flanagan K. (2010) From Regional Systems of Innovation to Regions as Innovation Policy Spaces. *Environment and Planning C: Government and Policy*, 28(4) pp681-695, doi:10.1068/c0961

Van Ark, B and Venables, A.J. (2020). A Concerted Effort to Tackle the UK Productivity Puzzle. *International Productivity Monitor*, Number 39, Fall 2020, pp. 3-15.

Annex 1: Workforce jobs by industry section (SIC 2007) (2019)

Industry	Cumbria	Cheshire	Greater Manchester	Lancashire	Merseyside	North West	Great Britain
1 : Agriculture, forestry & fishing (A)	1.5	0.7	0.1	0.7	0.1	0.4	0.7
2 : Mining, quarrying & utilities (B,D and E)	1.3	1.4	1.5	1.2	0.9	1.3	1.3
3 : Manufacturing (C)	16.0	8.5	7.4	13	7.5	9.3	8
4 : Construction (F)	5.5	4.6	4.3	5.6	3.8	4.6	4.9
5 : Motor trades (Part G)	2.5	2.6	1.8	2.3	1.5	2	1.9
6 : Wholesale (Part G)	2.9	4.2	4.7	4.6	3.2	4.2	3.9
7 : Retail (Part G)	10.9	10.1	9.7	10	10.4	10	9.2
8 : Transport & storage (inc. postal) (H)	5.0	5.6	6.1	4.3	6.1	5.6	4.9
9 : Accommodation & food services (I)	11.3	7	6.2	7	6.9	6.9	7.6
10 : Information & communication (J)	1.3	3	3.7	2.2	2.1	2.8	4.3
11 : Financial & insurance (K)	1.1	4.4	3.2	1.4	2.6	2.8	3.5
12 : Property (L)	1.1	1.4	1.8	1.1	1.5	1.5	1.7
13 : Professional, scientific & technical (M)	5.9	12.1	9.9	5.9	7.9	8.8	8.7
14 : Business administration & support services (N)	5.5	9.5	10.1	6.8	7.8	8.6	8.8
15 : Public administration & defence (O)	4.6	3	4.2	4.9	5.9	4.6	4.4
16 : Education (P)	6.3	6.2	8.4	8.7	8.7	8	8.6
17 : Health (Q)	13.0	11.3	12.8	15.8	18	14.2	13
18 : Arts, entertainment, recreation & other services (R,S,T and U)	4.6	4.6	4.3	4.2	5	4.5	4.5

Source: Business Register and Employment Survey (BRES) from Nomis (<https://www.nomisweb.co.uk/>).