Greater Manchester: Evidence Review

November 2018

Greater Manchester: Independent Prosperity Review

Background Paper

The Greater Manchester Prosperity Review

In the 2017 Autumn Budget and as part of the city region's sixth devolution deal, Greater Manchester Combined Authority (GMCA) and Government agreed to work together to develop one of the UK's first local industrial strategies. The GM Local Industrial Strategy will reflect the main themes of the national Industrial Strategy White Paper whilst taking a place-based approach that builds on the area's unique strengths and ensures all people in Greater Manchester (GM) can contribute to, and benefit from, economic growth.

A robust and credible evidence base is critical to underpin the Local Industrial Strategy and to make the case for what needs to be done to deliver growth for Greater Manchester and its residents. It will also be critical to ensure buy-in from local and national public and private stakeholders – building on the success of the Manchester Independent Economic Review (MIER)[1] a decade ago.

Development of the evidence base underpinning the Local Industrial Strategy is being taken forward under the Greater Manchester Independent Prosperity Review. The review is being led by a panel of independent experts chaired by Professor Diane Coyle (Bennett Professor of Public Policy, University of Cambridge). The other members of the panel are: Professor Ed Glaeser (Professor of Economics, Harvard University); Stephanie Flanders (Head of Bloomberg Economics); Professor Henry Overman (Professor of Economic Geography, London School of Economics); Professor Mariana Mazzucato (Professor in the Economics of Innovation, University College London); and Darra Singh (Government & Public Sector Lead at EY).

This Evidence Stocktake is a baseline report for the Prosperity Review and represents the first stage in GMCA's development of an up-to-date and compelling evidence base for the Local Industrial Strategy. It summarises the results of a wide range of work that has been undertaken by economic analysts within and beyond Greater Manchester. It is structured under the 'Five Foundations' identified in the national Industrial Strategy White Paper (Place, People, Ideas, Business Environment and Infrastructure) and explores the key themes emerging from the evidence; the gaps that exist in evidence; and highlights further lines of enquiry identified for consideration by the Prosperity Review Panel.

[1] Manchester Independent Economic Review, 2009, http://www.manchester-review.co.uk/

Table of Contents

Executive Summary

In the 2017 Autumn Budget, Greater Manchester Combined Authority (GMCA) and Government agreed to work together to develop one of the UK's first Local Industrial Strategies. Government and GMCA believe that evidence needs to be at the heart of the Local Industrial Strategy and, as a result, the Greater Manchester Independent Prosperity Review has been established to review the evidence available and identify gaps and areas for further research.

It is 10 years since the last comprehensive, evidence-based assessment of Greater Manchester's (GM) economy – the Manchester Independent Economic Review (MIER). Whilst the pattern of economic change anticipated by the MIER has largely come about, the economic and fiscal context, labour market developments and new factors such as Brexit have created a fundamentally different environment to those anticipated in the MIER.

This Evidence Stocktake forms the first stage in the Greater Manchester Independent Prosperity Review. It summarises the existing evidence base developed by economic analysts within and beyond Greater Manchester. This includes:

- Economic and spatial analysis, including the evolving role of the Regional Centre
- Labour market and skills analysis, including the changing nature of the workforce and inequalities within GM
- Productivity analysis, exploring the factors associated with continued slow productivity growth
- Sectoral analysis, highlighting the opportunities/challenges, resources and assets across GM's core sectors
- Infrastructure analysis, including digital and transport.

The stocktake is structured under the 'Five Foundations' identified by the UK's Industrial Strategy White Paper (Place, People, Ideas, Business Environment, and Infrastructure). The evidence paints a positive yet complex narrative.

Place: The past decade has seen strong growth in Greater Manchester's economy and population, reflecting GM's growing attractiveness as a place to live and do business. GM is forecast to outperform the UK in terms of both GVA and employment growth to 2020.[2] However the city region's performance is held back by historically low levels of productivity growth, despite GM's scale and density creating scope for significant growth that exceeds the potential of any other city-based economy outside London. Within GM, economic growth has been uneven, with areas such as the Regional Centre, Oxford Road Corridor, Salford Quays and Manchester Airport delivering accelerated growth and other areas of concentrated employment, including GM's key town centres, experiencing a more mixed pattern of change. Overall growth has been slower in the north and east of the conurbation than in the south and west. As a result, GM's fiscal gap – the difference between its tax revenue and public spending – remains high, with recent reductions being more attributable to constraints in public spending than to increased tax revenues.

[2] UK Regional Economic Forecast, 2017, https://www.ey.com/uk/en/issues/business-environment/financial-markets-and-economy/rebalancing---ey-uk-region-and-city-economic-forecast

People: Greater Manchester is home to the largest labour market outside South East England: There are 2.8 million people living in GM and six million people live within an hour's travel time to the city region. GM is a diverse city region: it is home to a rapidly-expanding ageing population; it has one of the largest student communities in Europe (over 100,000 studying at our universities); over 200 languages are spoken in GM's extensive, diverse communities; while GM's LGBT community is substantial and growing.

But while the past decade has seen strong employment growth (especially in highly-skilled roles) and sharp falls in unemployment, levels of worklessness (particularly for those with health conditions, low skills, and people aged over 50) remain stubbornly high. Poor health is a major factor in GM's worklessness and low in-work productivity. Pay and living standards have stagnated, with a rise in 'atypical' forms of employment which tend to be unstable and low paid. Labour demand is polarising with faster growth in higher skilled jobs, but also more low skilled and elementary roles. And despite improvements in educational attainment, GM's skills profile remains below the national average.

Ideas: The Greater Manchester and Cheshire East Science and Innovation Audit identified that Greater Manchester has globally competitive research strengths and emerging industrial opportunities in health innovation and advanced materials. It also has fast growth opportunities in relation to digital, energy, and industrial biotechnology. The Oxford Road Corridor – with two universities, research hospitals and research, incubation and science park facilities – provides a concentration of science and research assets of international significance.

Other significant science assets in and around Greater Manchester include the Salford Royal University Trust (home to the ground-breaking Salford Lung Study), the Christie Hospital, Sci-Tech Daresbury, and Alderley Park. While the evidence shows that GM is developing human capital at scale (GM creates 8% of England's STEM doctorates), the commercialisation of its science base into products, markets and economic growth could be improved. R&D spending is below comparable city regions, and significantly behind the UK Government's ambitious target of 2.4% of GDP, with the main barriers being finance and in-house knowledge to develop and manage innovation.

Business Environment: The evidence highlights that the strength of GM's business base is its diversity, which brings resilience to economic shocks and the opportunity for GM employers to pursue multiple growth opportunities. However, the absence of major employers headquartered in GM is a notable feature. The evidence highlights GM's key strengths in Advanced Manufacturing, Digital and Creative Industries, and Business, Financial and Professional Services; with emergent strengths in health innovation, and 'green' industries and services. However, in common with other city regions, the majority of GM jobs are in 'foundational' sectors such as retail, hospitality, tourism, construction and care where pay and productivity tend to be low. GM has a strong social enterprise sector, delivering products and services while also creating positive social impacts[3]. But the evidence also demonstrates that although business birth rates have improved, scale up performance and business density is worse than comparable city regions, and leadership and management issues persist. Perhaps the area of greatest opportunity reflected in the evidence is GM's export performance, which is lower than might be expected.

[3] GMCVO, 2017, Greater Manchester State of the Voluntary, Community and Social Enterprise Sector https://www.gmcvo.org.uk/system/files/greater_manchester_state_of_the_vcse_sector_2017.pdf

Infrastructure: Greater Manchester has developed its 'all infrastructure' asset base significantly over the past two-decades. In transport infrastructure, Metrolink light rail system will soon run to 99 stops, Port Salford provides water links to the rest of the world, and Manchester Airport serves over 200 destinations, more than any other UK airport. Significant further upgrades to infrastructure are in the pipeline, most notably HS2 and Northern Powerhouse Rail. Digital infrastructure and connectivity is an increasing priority. Currently GM's full-fibre broadband coverage is low by international standards, although plans are in place to increase this significantly. GM also has an emerging smart cities infrastructure. The role of its 'Green Infrastructure' and the value of the environment to the economy and social wellbeing in creating liveable cities is increasingly recognised. The natural capital account for Greater Manchester shows that it has environmental assets worth £24bn over the next 60 years which deliver approximately £860m in services each year through benefits such as improved health and air quality. Flood defence schemes have been completed in Salford and Wigan which will protect over 3000 properties.

But significant challenges remain. In transport, road congestion is amongst the most severe in the UK, with knock-on impacts to air quality, and the public transport system is not integrated. In energy, the need to decarbonise GM's economy means it needs to look at low carbon energy generation and storage, retrofitting of buildings, and low carbon transport. Historically GM and the wider North West have had lower levels of national government spending particularly on transport infrastructure than London and the South East. Going forward economic and population growth will place significant pressure on all infrastructure, including social infrastructure such as schools and hospitals. Future climate change pressures will also require the city region to adapt to bigger shocks and stresses, such as increased heat, drought and flood risk, which may require new sources of funding to be identified.

Conclusion: GM has a strong evidence base, which provides a solid foundation on which to develop a Local Industrial Strategy and whilst the evidence in this report has been presented against the 'five foundations,' these issues are evidently, all highly interconnected. Common amongst all of the foundations are issues of disparities with national and benchmark averages and unequal spatial distribution of outcomes within the city region, including in healthy life expectancy, business density and in productivity and earning power. Building on this strong evidence base, it is recognised that, in the new local and national contexts there are some areas where additional research would be useful. In summary, the analysis suggests the Prosperity Review Panel consider the following as priorities:

- an Audit of Productivity, understanding GM's productivity performance and identifying the main policy levers that could raise productivity;
- a granular analysis of the "long tail" of low-productivity firms within GM and how productivity could be raised in them. This will include a case study of the social care sector;
- a study to understand Greater Manchester's national and international supply chain and trade linkages;
- an exploration of the city region's innovation ecosystems, analysing the interrelationships between public and private innovation in Greater Manchester;
- analysis of education and skills transitions, reviewing the role of the entire education and skills system in Greater Manchester and how individuals pass through key transition points; and

- a review of the infrastructure needs of Greater Manchester to raise productivity, including the potential for new approaches to unlock additional investment.

1. Introduction and Scope

In the 2017 Autumn Budget and as part of the city region's sixth devolution deal, Greater Manchester Combined Authority (GMCA) and Government agreed to work together to develop one of the UK's first local industrial strategies. The GM Local Industrial Strategy will reflect the main themes of the national Industrial Strategy White Paper whilst taking a place-based approach that builds on the area's unique strengths and ensures all people in Greater Manchester (GM) can contribute to, and benefit from, economic change.

A robust and credible evidence base is critical to underpin the Local Industrial Strategy and to make the case for what needs to be done to deliver sustainable growth for Greater Manchester and its residents. It will also be critical to ensure buy-in from local and national public and private stakeholders – building on the success of the Manchester Independent Economic Review (MIER)[4] a decade ago.

Development of the evidence base underpinning the Local Industrial Strategy is being taken forward by the Greater Manchester Independent Prosperity Review. The review is being led by a panel of independent experts chaired by Professor Diane Coyle (Bennett Professor of Public Policy, University of Cambridge). The other members of the panel are: Stephanie Flanders (Head of Bloomberg Economics); Professor Ed Glaeser (Professor of Economics, Harvard University); Professor Mariana Mazzucato (Professor in the Economics of Innovation, University College London); Professor Henry Overman (Professor of Economic Geography, London School of Economics), and; Darra Singh (Government & Public Sector Lead at EY).

This Evidence Stocktake is a baseline report for the Prosperity Review. Together with an accompanying paper on the impact of devolution to GM, it represents the first stage in GMCA's development of an up-to-date and compelling evidence base for the Local Industrial Strategy. It summarises the results of a wide range of work that has been undertaken by economic analysts within and beyond Greater Manchester, including:

- Economic and spatial analysis, including the evolving role of the Regional Centre
- Labour market and skills analysis, including the changing nature of the workforce and inequalities within GM
- Productivity analysis, exploring the drivers for continued slow productivity growth
- Sectoral analysis, highlighting the opportunities/challenges, resources and assets across GM's core sectors
- Infrastructure analysis, including digital, transport and spatial planning.

This Evidence Stocktake is structured under the 'Five Foundations' identified in the national Industrial Strategy White Paper (Place, People, Ideas, Business Environment and Infrastructure) and explores the key themes emerging from the evidence; the gaps that exist in evidence; and highlights further lines of enquiry identified for consideration by the Prosperity Review Panel.

[4] Manchester Independent Economic Review, 2009, http://www.manchester-review.co.uk/

It is important to note that this paper does not provide a commentary on the impact or effectiveness of GM policy or policy implementation, instead it articulates the evidence as it stands and an assessment of the key themes and gaps in research.

2. Context

Greater Manchester's Local Industrial Strategy will be agreed with the UK Government early in 2019, coinciding with the tenth anniversary of the publication of the Manchester Independent Economic Review. The MIER was a ground-breaking, independent study that provided the analytical underpinnings of successive Greater Manchester strategies for local growth and public service reform (summarised in Figure 1).

The MIER reviewers stressed the need for GM to be equipped with more 'policy tools', noting that it lacked the fiscal and policy levers to build successfully upon the area's strengths and confront the challenges it continued to face. Their recommendations paved the way for the creation of Greater Manchester Combined Authority (GMCA) in 2011, the election of GM's first metro mayor in 2017, and a series of devolution deals with Government that strengthened GM's governing capacities across a range of policy areas.

In essence, the MIER presented a positive picture of the turnaround in GM's fortunes following the long period of structural economic decline and loss of jobs in traditional industries during much of the later twentieth century. Central to this turnaround, the MIER reviewers observed, was the growth of new, higher value, service sector-dominated economic activities concentrated in the core area of the conurbation.

Whilst the pattern of economic change anticipated by the MIER has largely come about (including employment and output continuing to grow, driven by additional high level service sector employment in the core of the city region, and complementary development in, for example, advanced manufacturing and logistics in other key GM employment centres), the majority of GM's workforce continue to work in more routine personal and consumer services sectors (e.g. retail, care, tourism and hospitality) that tend to offer lower quality jobs, lower pay and are characterised by low levels of productivity.

Moreover, globally and nationally, the changing economic and fiscal environment, labour market context and new factors, such as Brexit, have created a fundamentally different picture to those anticipated by the MIER:

- Public resources to support growth and reform have been much more constrained as successive governments have implemented austerity measures in response to the recession triggered by the financial crisis.
- Strong employment growth post the recession has been positive and included high skilled jobs. The general trend of employment and output growth post the recession however, has been characterised by historically low levels of productivity growth and a shift towards employment creation in lower value sectors and activities offering comparatively low paid, less secure employment.
- Earnings and living standards have stagnated, holding back attempts to create a more inclusive, prosperous city region.
- The strength and speed of change in digital technologies and its diffusion across the economy has been rapid, including the extent to which digitisation has been embedded within manufacturing, logistics supply chains and retail.
- The uncertainty created by the UK's impending exit from the European Union has added a further layer of complexity to the challenge of charting a long-term strategy to improve productivity and earnings.

A key feature of GM's strategic response to the more difficult environment experienced in the last ten years has been to emphasise the importance of public service reform as a critical element of economic as well as social policy. Many of the important policy innovations that have been developed in GM, for example in Health and Social Care, have operated on the principle that a more inclusive pattern of growth can only be achieved if public services are re-orientated towards preventative actions that can contain future costs and enable full participation in the economy and society. This people-orientated approach to growth is outlined in the recently refreshed Greater Manchester Strategy[5]; is a continuing theme across GM's multiple devolution deals, such as the multi-million Reform Investment Fund designed to reform services in support of families facing complex challenges; and will be reflected in GM's approach to the Local Industrial Strategy.

As well as a sustained focus on economic growth and public service reform in Greater Manchester, GM has been a driver for the Northern Powerhouse, working closely with northern city-regions to rebalance the historic under-investment in transport and infrastructure in the North compared to London and the South East. Whilst this has achieved notable successes, investment in regional connectivity remains some way off the levels required to bring transport and infrastructure to an optimal standard. In other social policy areas, such as education, outcomes (and funding) remain below levels seen in London.

[5] GMCA, Our People, Our Place, Greater Manchester Strategy, 2017, https://www.greatermanchester-ca.gov.uk/ourpeopleourplace

Figure 1: Summary of MIER recommendations and GM implementation over 10 years

MIER recommendation	Summary of implementation
1) The need for sustained efforts to improve the very early years experience of all young people in the city region, including at school, socially isolated neighbourhoods, and a review of school admissions policy to test the extent to which existing policies reinforce inequalities.	• New delivery model developed and piloted with 1,000 children, and assessment of local impact of integrating interventions.
2) A review of housing strategy is required with the emphasis more on demand rather than supply and the easing of planning restrictions which restrict availability and increase housing costs for skilled workers	• New delivery model for housing and an investment fund developed.
3) A need to review transport planning within Greater Manchester from the perspective of improving productivity and the connection of those areas of the city where employment is concentrated and others.	• SAF model developed to assess transport impacts. • GM Transport Fund developed.
4) Planning policy should be reviewed to acknowledge the reality of economic demand and permit more expansion of suitable business premises in those parts of the city region where demand is strongest – this demand is broadly more apparent in the south of the conurbation.	• GM Spatial Framework being developed.
5) Greater Manchester needs to quickly create a unified regime for planning, regeneration and neighbourhood renewal, with the balance of local and GM roles being further reviewed.	• GM Spatial Framework being developed.
6) Sub-regional, regional and national bodies need to undertake further research into whether there are potential government investments in science and elsewhere in the non-traded sector, including universities and other publicly funded research, in the city region, which could enhance the UK economy as a whole.	• Study undertaken in 2010 identifying opportunities for Science, and Science and Innovation Audit completed in 2016. • Significant investments made in GM by Government and GM funds in areas of strength, e.g. Sir Henry Royce Institute, National Graphene Centre, and GEIC. • Daresbury Science and Innovation Campus Joint Venture, and Enterprise Zone development.
7) Governance is key in driving economic growth – although Greater Manchester has strong leadership, the review identified that the city region still needs to assess how major decisions are undertaken to ensure that difficult decisions, such as those outlined here, are considered more effectively (following the - then - failure to deliver the Transport Innovation Fund).	• Greater Manchester Combined Authority created. • Directly elected Metro Mayor announced in devolution deal and elected in May 2017. • Refresh of Greater Manchester Strategy in 2017 with 2 year Implementation Plan, bringing together GM districts, Mayor, LEP and GMCVO and delivery agencies.
8) Evaluation activity has been limited, and the Review recommended the development of a more effective system of programme and project evaluation. This included regular city region wide evaluations of housing, economic development, planning, skills, regeneration and transport	• Single Assessment Framework designed and implemented. • Cost-Benefit Analysis model developed with HM Treasury.
9) The Review recommended that GM and central government explore the evidence of the costs and benefits of, and the potential for, devolution of powers, including funding. This was important as many of the policy levers for the recommendations were not available to GM.	• City deal, growth deal and devolution deals agreed.
10) The Review found that relatively few Greater Manchester firms had international trading links and were un-ambitious in this respect. In respect of trading links and skills in particular, the review recommended that the response to this issue (and response to the Review recommendations) – should be led by the private sector	• Development of LEP, Manchester Growth Company and Business Growth Hub. • Development of Internationalisation Strategy and Implementation Plan.

3. The Five Foundations: Place

3.1 Description

"To have prosperous communities throughout the UK"

Industrial Strategy White Paper (2017)

The national Industrial Strategy White Paper highlighted the central importance of 'place' in shaping and driving growth. This echoes the approach adopted by Greater Manchester in recent years, which has long contended that the unequal spread of growth across the UK needs to be addressed by enabling more places to reach their full economic potential.

This section presents analysis of two scales of 'place', reviewing both how the GM economy (as a whole) and places within GM have fared in the last decade. Analysis of productivity, inequalities and labour market dynamics across and within GM are presented. This section also reviews the important role played by the Regional Centre in supporting the economic wellbeing of GM, its employers and its residents.

3.2 Analysis and research undertaken

GMCA has continued to invest in research that improves its understanding of the nature of growth and productivity in GM and in places within GM. This has included:

- Analysis of the extent and nature of low pay and low productivity in Greater Manchester (2016)[6].
- High quality sectoral analysis of the performance of Greater Manchester's economy through the Deep Dives Phase One[7] and Two (2016-17)[8].
- A review of the findings of the GM Forecasting Model, developed by Oxford Economics[9].
- Research by GMCA into the Regional Centre[10] as a residential and employment hub, drawing on ONS and FAME business database information.
- Data from ONS, FDI analysis by Deloitte and sources utilised in the 'People' section of this evidence review (such as a review of GM's inequalities by University of Manchester's Inclusive Growth Analysis Unit) have also been drawn upon to develop the evidence presented below.
- A wide body of evidence to underpin GMCA's digital and cultural strategies, public service reform, and to inform thinking for the Digital Summits (held in July and December 20-17) and Green Summit held in March 2018.

[6] New Economy, August 2016, Low Pay and Low Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/140/low_pay_and_productivity
[7] GMCA, 2016, Deep Dives Phase 1 – Sector Reports, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[8] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[9] GMCA, Greater Manchester Forecasting Model, https://www.greatermanchester-ca.gov.uk/info/20004/business_and_economy/73/greater_manchester_forecasting_model/1
[10] Research undertaken by GMCA to analyse the Regional Centre as a Residential and Employment Hub. Data sourced from ONS and FAME business database

3.3 Summary of Findings

3.3.1 GM's productivity continues to lag

While GM's scale and density create scope for significant growth that exceeds the potential of any other city-based economy outside London, MIER found that the city region's economy 'punches below its weight' due to low productivity. Ten years on, this picture is largely unchanged. Over recent years GM's economy has tracked the UK-wide trend of stagnant productivity growth rates, while continuing to underperform national benchmarks.

The latest Productivity in GM report shows that GVA per head of the resident population (a measure of the productivity of a place) in Greater Manchester has consistently been around 90% of the UK average since 1991. The report also finds that:

- A small number of locations make a disproportionate contribution to economic growth, particularly the Regional Centre (including Salford Quays), Manchester Airport and Trafford Park.
- 80% of the productivity gap relates to the performance of firms within sectors – i.e. GM firms are, on average, less productive than those located in London and South East.
- Industrial composition (i.e. the sectoral profile of the GM economy) is not a key factor in GM's productivity underperformance[11].

GM's total 'output' gap with the national average is currently estimated at £10bn GVA annually.

There are significant differences in the challenges faced by GM districts:

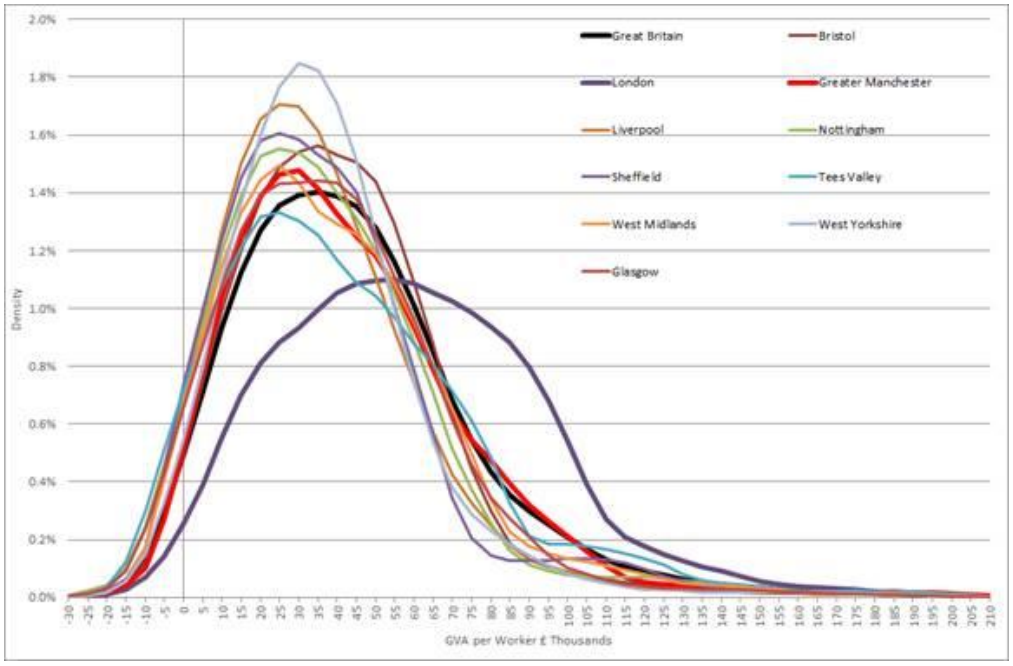
- Manchester and Salford have a concentration of highly productive sectors compared with the national average, but they have significant resident employment challenges.
- Stockport and Trafford have a higher proportion of highly productive sectors than other areas, higher employment rates, and significant in-work productivity strengths.
- Bolton, Oldham and Rochdale have slightly higher proportions of highly productive sectors (particularly in manufacturing), but face significant employment rate and in-work productivity challenges.
- Bury, Tameside and Wigan have employment rates and industry mix broadly in line with national averages, but average in-work productivity is significantly below the national average.

ONS analysis shows there to be a strong presence in GM of firms that typically populate the 'long tail' of low productivity highlighted by the Bank of England as critical to reversing the country's stagnant productivity performance[12]. The ONS data [Figure 2] shows that GM has a high concentration of jobs where GVA per employment is below £30,000 per annum. Furthermore it could be argued that the structure of GM's business population, with a high proportion of smaller employers (who tend to be less productive than larger firms) and

[11] GMCA, 2017, Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/sector_deep_dive_research
[12] Haldane, 20 March 2017, Productivity Puzzles (speech given to London School of Economics), https://www.bankofengland.co.uk/speech/2017/productivity-puzzles

absence of major HQ functions, means that GM faces important challenges in addressing the 'long tail' of low productivity companies.

Figure 2: Proportion of jobs in different ranges of GVA per employment (Source: ONS, 2018)



MIER analysis showed that there was no evidence that clustering of specific industries improves productivity in Greater Manchester. Of more importance is a firm being located within a large urban environment.

Analysis of productivity per employment by sector[13] in GM shows that:

- Manufacturing (and sub-sectors) in GM across all districts performs relatively well, with no district or sub-sector under 80% of the UK average. Productivity is above average in Manchester, Salford and Trafford. Textiles manufacturing (including fabrics, technical materials, clothing) has better productivity than the UK average in 7 of 10 districts.
- Despite the scale of Business, Finance, and Professional Services in GM (it accounts for around 1 in 4 jobs), average levels of productivity within the sector in GM are 85% of the UK average (below 80% for Financial Services). Only in Manchester do Business Services perform above the UK productivity average.
- The productivity of the growing Digital and Creative sector in Manchester and Salford is close to the national average, helped by above-average performance in Digital Industries in Salford.
- Hospitality, Tourism and Sport is the only other sector where GM's productivity performance appears to be at or near the national average – driven by Manchester, Trafford, Stockport and Salford (GM is the 3rd most visited city in the UK, according to ONS). However, Hospitality, Tourism and Sport is one of the lowest productivity sectors nationally.

[13] New Economy analysis using Greater Manchester Forecasting Model. See GMCA, Greater Manchester Forecasting Model, https://www.greatermanchester-ca.gov.uk/info/20004/business_and_economy/73/greater_manchester_forecasting_model/1

The sectors with lowest productivity in GM are Hospitality, Tourism and Sport (£22,800 GVA per employment), Retail (£27,200) and Health & Social Care (£28,000). The total share of employment in these sectors in GM has increased from 38% in 2005 to 42% in 2015.

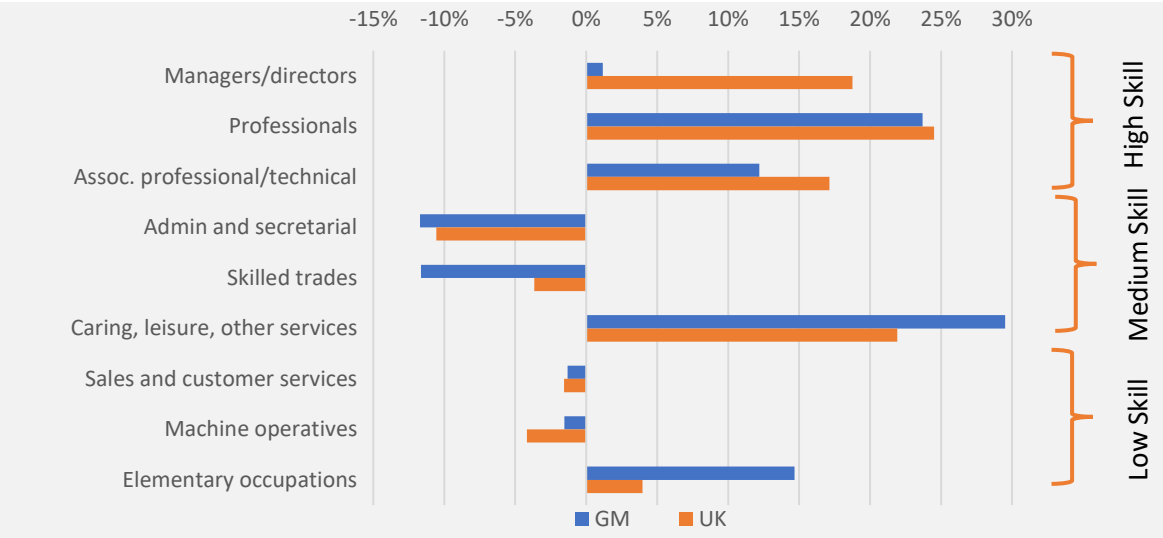
3.3.2 The occupational structure of GM's labour market continues to impact productivity

Despite a continued structural shift in the labour market towards more managerial and professional roles (and fewer machine operatives and administrative jobs), the large proportion of jobs in GM at the lower end of the pay scale remains a key feature of GM's productivity challenge. GM most closely aligns with Glasgow and West Midlands in that the share of its workforce in managerial and professional roles is below the national average (and considerably below London). However at the upper end of the spectrum GM performs better, with job volumes in the £80-100k salary bracket closer to the national average.

ONS data [Figure 3] suggests that labour demand in GM over the past decade has been on a broadly similar trajectory to that of the rest of the country, in that:

- The proportion of all jobs that are in higher-skilled occupations (eg managers, professionals and associate professionals) is growing, albeit at a slower rate than the national average (and especially for managers and directors).
- The number of roles in skilled trades, admin/secretarial and machine operatives is continuing to fall.
- There is strong growth in demand for elementary roles[14] and caring/other service occupations.

Figure 3: Change in employment by occupational group in GM and UK, 2007-2017 (Source: ONS, 2018)[15]



[14] Elementary occupations are defined under SOC Major Group 9. This Includes basic/unskilled jobs in agriculture, manufacturing, admin, cleaning, security, warehousing, and hospitality; occupations classified at this level will usually require a minimum general level of education https://www.ons.gov.uk/methodology/classificationsandstandards/standardoccupationalclassificationsoc/soc2010/soc2010volume1structureanddescriptionsofunitgroups

[15] GMCA, 2018, GM Labour Market and Skills Review, Manchester. Available at: https://www.greatermanchester-ca.gov.uk/info/20175/research/141/labour_market_and_skills_review

Over the last decade the share of highskilled occupations (managerial, professional and technical) in the GM workforce has increased (from 39% to 42%), while the shares of medium-skilled and, to a lesser extent, low-skilled occupations have fallen. While this is an improvement in GM labour market's occupational profile, it still lags behind the UK in the share of highskilled occupations, and this gap has grown from 2% points in 2007 to 3% points in 2017.

Although this suggests that GM still has some way to go to close the gaps in the occupational profile of its workforce compared to the UK average, if recent trends towards higher quality jobs continue, it should be beneficial, in particular, to people in mid-life in GM who have struggled to access high skill and high wage work when compared with England overall. Currently, however, Stockport and Trafford are the only GM districts that have a larger share of residents aged 35-54 in socio-occupational group 'AB' (higher and intermediate managers and professional grades) than the England average. Conversely, in Manchester the proportion of those aged 35-54 in socio-occupational group AB is well below the England average. This disparity is partly explained by the fact that a high proportion of those working in higher paid jobs in Manchester commute in from other local authority areas within or outside GM. The GM district with the lowest proportion of residents aged 35-54 in socio-occupational group 'AB' is Tameside, around 40% below the national average.

Families in GM tend to be over-represented in socio-occupational group 'DE' which covers semi and unskilled manual jobs and the unemployed[16]. For those living in Stockport and Trafford the likelihood of being in a low skill/low wage job is less than the England average. In Manchester, Oldham and Rochdale the reverse is true. The likelihood in Bury is in line with the national average.

3.3.3 More residents and more jobs, with the Regional Centre continuing to drive economic growth

ONS' most recent published population projections for GM estimate that there will be an additional 286,100 new residents by 2035[17], a rise of just over 10%. These new residents will contribute to GM's economic performance.

In employment terms, a further 141,200 jobs are expected under a Baseline scenario and up to 190,000 additional jobs under an Accelerated Growth Scenario (AGS-2017), predicated on Greater Manchester playing a leading role in a strong Northern Powerhouse.[18]

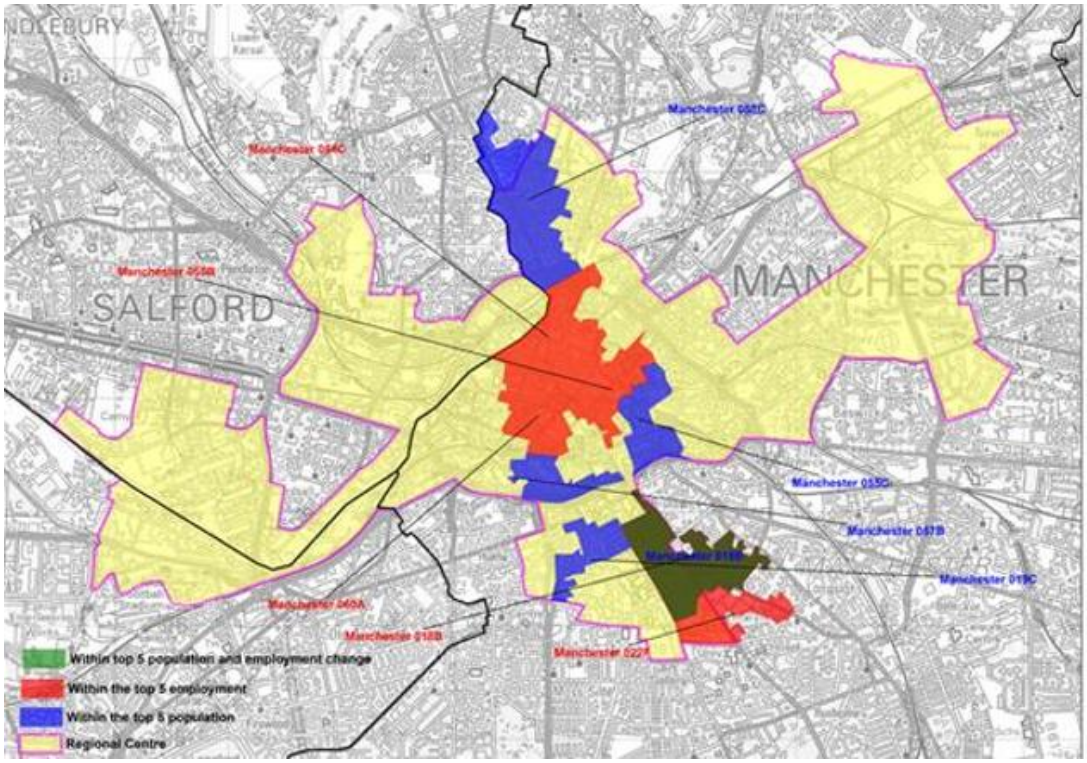
If the trends of the past decade continue, the Regional Centre will play a prominent role in driving growth in GM's overall population, as well as its labour market. Over the past two decades GM's Regional Centre has been transformed into the thriving economic and cultural centre of Northern England. It is home to the city region's largest concentration of economic activity with approximately 10,000 businesses[19], employing over 250,000 people.

[16] Rubery, Johnson, Lupton, and Roman, 2017, Human Development Report for Greater Manchester: Human Development across the Life Course.
[17] ONS, 2018, 2016-based Sub national population projections
[18] GMCA, 2017, Economic Forecasts for Greater Manchester, https://www.greatermanchester-ca.gov.uk/downloads/file/392/report_-_main_findings_from_the_gmfm-2017_and_ags-2017, forecasts commissioned from Oxford Economics – who update and maintain the Greater Manchester Forecasting Model for Greater Manchester
[19] Research undertaken by GMCA to analyse the Regional Centre as a Residential and Employment Hub. Data sourced from ONS and FAME business database

The Regional Centre (shown in Figure 4) comprises three distinct areas, each of which are forecast to continue to grow strongly over the next 20 years:

- City-Centre Manchester: Located within the Manchester Inner Ring Road, and encompassing a part of neighbouring Salford.
- Salford Quays/MediaCity UK: An internationally significant cluster of digital and creative activities at Salford Quays/MediaCity UK.
- Corridor Manchester: A locus for knowledge intensive activity stretching from St Peter's Square to Whitworth Park, containing a world class HEI cluster.

Figure 4: Greater Manchester Regional Centre including areas of high employment and residential growth between 2001 and 2011 (GMCA)



The importance of the Regional Centre to GM's economy was noted in the MIER and has grown further since. It is now home to 1 in 5 GM jobs, accounting for 36% of all jobs growth in GM between 2010 and 2015. There are 59% more jobs in the Regional Centre than in all other GM town centres, Trafford Park and Manchester Airport combined[20]. The number of businesses in the Regional Centre grew by 37% between 2010 and 2015, compared to a growth rate of 17% across the rest of GM. Changes in employment levels in key employment centres in GM are summarized below:

[20] ONS, Annual Population Survey, 2017

Figure 5: Employment change 2010-15 (Source: Nomis, ONS)

Area	Total Employment Change, 2010-15	% Change, 2010-15	Total employment (2015)	Share of Total GM employment (2015)
Greater Manchester	+61,000	+5.2%	1,252,000	100%
Regional Centre	+22,500	+12.1%	252,035	20%
Town Centres	-15,650	-14.3%	94,000	8%
Manchester Airport & Trafford Park	+9,250	+16.7%	64,625	5%

Over 100,000 people lived in the Regional Centre in 2011, marking growth of 120% over the previous decade[21]. There are now around 11,000 new residential units under construction in Central Manchester and Salford[22]. The population is highly mobile: in 2010, 32,000 people moved to live in the Regional Centre, with 26,000 of those coming from the rest of the UK[23].

3.3.4 Some improvement in spatial inequalities but significant challenges remain

Spatial disparities in economic outcomes within Greater Manchester are longstanding and substantial. Ten years ago the MIER examined the characteristics of socio-economic polarisation within GM, noting an improvement in absolute terms in deprivation and worklessness when analysed at the level of local authority districts. In the period since then, deprivation in GM (relative to the national picture) has continued to improve.

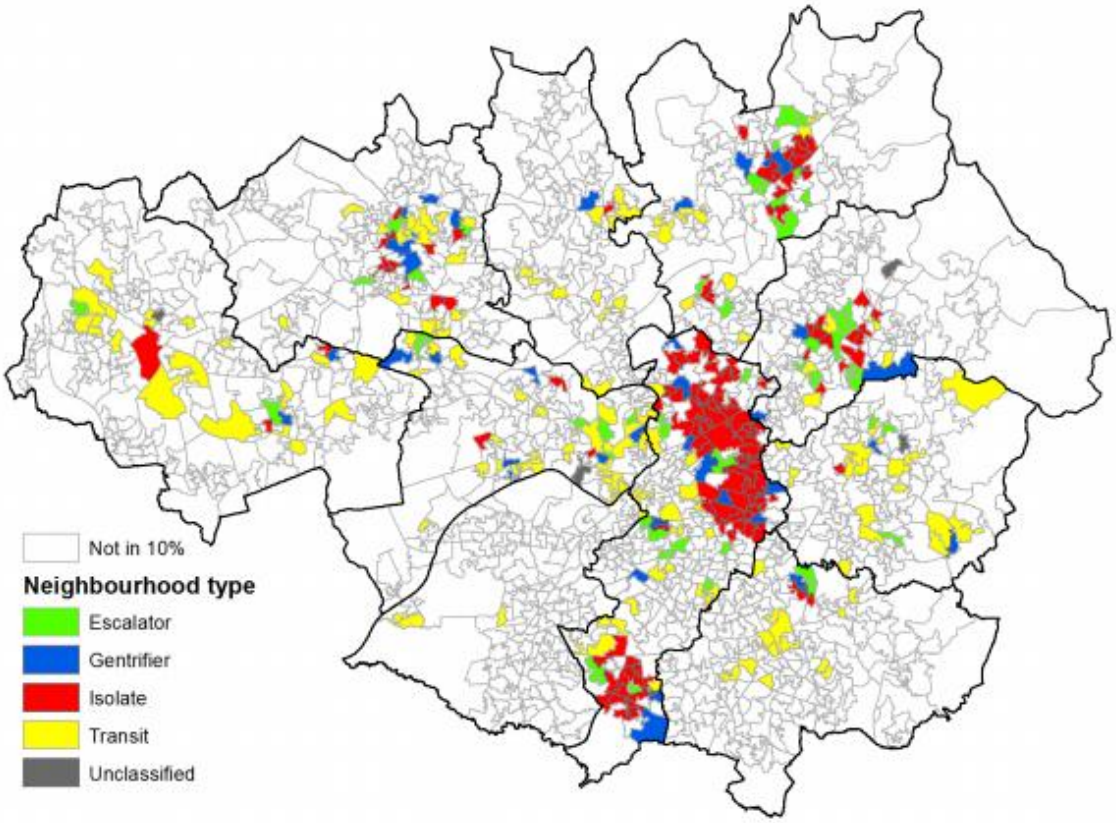
These patterns are reflected in changes in the status of many GM neighbourhoods in the Index of Multiple Deprivation (IMD) between 2004 and 2015. For example:

- In 2004, 396 GM neighbourhoods were included in the 10% most deprived nationally. By 2015, this figure had fallen to 348. Manchester accounted for the bulk of this improvement; the number of Manchester neighbourhoods within the 10% most deprived nationally fell by 40 (from 155 to 115). The number of GM neighbourhoods within the 1% most deprived fell by 38% over the same period with almost all the reduction again coming in Manchester.
- The number of 'isolate' neighbourhoods in GM (those least well linked to wider housing markets with moves only into and out of other deprived areas) fell by 44 between 2004 and 2015 [Figure 6]. 'Isolate' neighbourhoods, arguably the most problematic amongst GM's deprived areas, now comprise 34% of GM's deprived areas, compared to 43% in

[21] ONS, Census 2011
[22] Deloitte LLP, 2018, Living for the City: Manchester Crane Survey.
[23] Research undertaken by GMCA to analyse the Regional Centre as a Residential and Employment Hub

Leeds (unchanged between 2004 and 2015) and 4% in London (which has seen a sharp reduction, linked to population change and gentrification).[24]

Figure 6: GM LSOAs among 10% most deprived nationally by residential typology type 2015 (Source: IGAU)



Deprivation is still spread widely across Greater Manchester. Despite recent patterns of improvement, the main concentrations are still found close to GM's urban core, in central, north and east Manchester and east Salford. Other, smaller clusters are found in Wigan, Bolton, Rochdale and Tameside, typically surrounding town centres. These areas demonstrate persistent high worklessness, commonly 75% above the GM average.

It is important to stress that growth and deprivation patterns vary significantly at a sub-district level – this is not a simple case of growing disparities between areas that are more peripheral to the Regional Centre and those that are not. Employment in Digital and Creative industries has grown by 34% in GM's town centres between 2010 and 2015. Major developments such as Kingsway and Logistics North have brought thousands of new job opportunities to communities in the North of GM. Meanwhile, Trafford Park and Manchester Airport continue to outperform national and regional growth rates.

Spatial analysis of growth over the last 20 years paints a variable picture across GM. Between 1996 and 2016, GVA per working age population grew by 43% in Trafford, 38% in

[24] Hughes & Lupton, 2018, Understanding changes in Greater Manchester 'deprived' neighbourhoods 2004-2015 Using a typology of residential mobility, briefing working paper 01/2018, http://hummedia.manchester.ac.uk/institutes/mui/igau/igau-residential-moves-typology.pdf

Bury and 34% in Salford. Comparable figures for Rochdale and Tameside, by contrast, were 17% and 5%, respectively[25].

3.3.5 The gap between GM public spending and tax income generated by GM is narrowing

A core argument for the devolution of powers and responsibilities from central government to Greater Manchester has been around reducing the fiscal gap – the gap between the taxes generated and the level of expenditure by the public sector within GM.

Analysis by New Economy suggests that total public spending in GM fell by 2.6% between 2008/9 and 2013/14, with severe reductions in local government spending (down by over a third in the period) offset by rises in health (by 5.8%) and pensions, child benefit and maternity pay (up by 18%)[26].

With GM tax income largely stable during this time, the analysis concluded that GM's fiscal gap had fallen from £8.1bn in 2008/9 to £7bn in 2013/14. Subsequent analysis[27] via an alternative methdology, undertaken in partnership with the Local Government Association, suggests that between 2014/15 and 2015/16, the fiscal gap fell from £6.8bn to £6.2bn, driven largely by higher tax receipts.

3.4 Gaps, issues and lines of enquiry

Research undertaken by GM means that it has a robust understanding of how places shape, and are shaped by, economic growth.

Before the GM Independent Prosperity Review begins to consider its conclusions, however, the evidence suggests that more research is required to understand the role of place in addressing GM's persistent low productivity. In particular, the research should aim to advise on the policy levers that local authorities, GMCA and Government can deploy to help the city region make a definitive break from the 'low skills equilibrium' that endures across much of GM. This could include a granular analysis of the nature and extent of the 'long tail' of low-productivity firms within GM.

Furthermore, more analysis may be required to better understand how the economic growth benefits of growth poles, including the Regional Centre, are distributed across GM. This analysis should also consider what else can be done to ensure that more GM residents, particularly those from deprived communities, are better able to access these new economic opportunities.

[25] GMCA, Greater Manchester Forecasting Model, https://www.greatermanchester-ca.gov.uk/info/20004/business_and_economy/73/greater_manchester_forecasting_model/1
[26] New Economy, 2015 ESPRESSO Tax and Expenditure Analysis Tool, http://www.neweconomymanchester.com/publications/espresso-tax-and-expenditure-analysis-tool
[27] New Economy, 2015 ESPRESSO Tax and Expenditure Analysis Tool, http://www.neweconomymanchester.com/publications/espresso-tax-and-expenditure-analysis-tool

4. The Five Foundations: People

4.1 Description

"To generate good jobs and greater earning power for all"

Industrial Strategy White Paper (2017)

People, and the skills they have, are a key driver of productivity. However, research conducted in GM (described in the previous Section 3: Place) highlights the challenging productivity context facing GM. Over the last ten years, GM has seen a very positive jobs growth story which has been characterised by increased polarisation within the labour market and a significant rise in the atypical workforce. GM has been able to attract more highly skilled workers into the city region, but the city region's ability to prepare local residents for those jobs remains a significant challenge.

This section explores the evidence from a series of research studies on the changing labour market and employment and skills characteristics of GM. It highlights the key demographic changes; the evolving labour market and nature of work; and the employment, skills and inequalities experienced in GM.

4.2 Analysis and research undertaken

GM has commissioned a suite of research studies that build on the MIER to analyse and assess the impact of new factors – such as Brexit – and explore particular opportunities and challenges in GM, particularly the employment and skills landscape. This includes:

- The Deep Dives analyses Phase One and Two (2016-17)[28], providing a comprehensive review of GM's key sectors, including employer skills issues and resident employment and skills.
- The GM Labour Market and Skills Review (2018)[29] which provides a comprehensive review of the work and skills landscape in GM, analysing the latest data in labour market demand, skills supply and demand in GM and comparing this with broader regional and national trends.
- A review of GM's labour force in the light of Brexit (2018)[30].

Together the research provides a comprehensive picture of the landscape, performance, key issues and considerations in terms of 'People' for the GM Local Industrial Strategy.

It should be noted that this research has underpinned GM's successful devolution deals which have resulted in the development and expansion of GM's £52 million Working Well service, co-commissioning of the Work and Health programme and devolution of the Adult Education Budget (with an annual budget around £90m).

[28] GMCA, 2016, Deep Dives Phase 1 – Sector Reports and GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research

[29] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis

[30] GMCA, 2018, Greater Manchester and Brexit, https://www.greatermanchester-ca.gov.uk/info/20175/research/181/greater_manchester_and_brexit

4.3 Summary of Findings

4.3.1 The demographic structure and characteristics of GM's population is changing

GM's population is growing, ageing, becoming more diverse and is more unhealthy than the that of the UK as a whole. The total population grew by just under 7% (181,241) between 2009 and 2016[31], but this masks significant variation within GM. Between 2009 and 2016, the Regional Centre's population grew at a faster rate than the GM average, with Manchester's population growing by 14.8% (69,881), Salford's by 12.6% (27,917) and Trafford's by 9.5% (20,385). Boroughs in the north of the city region have experienced slower population growth – Bolton 6.8% (18,002), Bury 3.3% (6,072) and Rochdale 4.1% (8,609).

The age profile of the city region is also marked by contrasts. Manchester has a fast growing young and working age population, with the number of 0-14 year olds growing by 31.8% (24,909) and the 15-64 age group by 12.7% (43,559) between 2009 and 2016, compared to the average for the rest of the city region of 9.3% and 2%, respectively. Stockport, Tameside and Wigan all experienced marginal decline in their working age populations during this period. The population aged over 64 has grown by 13.8% (51,996) in the same period across GM, with Bolton, Bury, Rochdale, Stockport and Wigan experiencing growth of more than 16%.

Twenty years from now, 37% of GM's population is expected to be aged over 50 – 1.1 million people, compared to around 900,000 now[32]. However, GM has a poor track record of labour market participation by the over-50s; whilst overall ESA claimant numbers have fallen slightly in GM (from 133,390 in 2016 to 128,480 in 2018), the number and proportion of ESA claimants over 50 has steadily risen, from 59,200 (44%) in 2016 to 62,130 (48%) in 2018[33]. It has been estimated that if GM's over-50 employment rate matched the UK average, an additional £900m of GVA would be generated in GM annually[34].

Health remains a very significant barrier to growth and economic opportunity. Levels of health-related worklessness in GM remain well above national averages. Tameside and Manchester were identified by ONS as two out of seven local authority areas with the worst levels of Healthy Life Expectancy (HLE) in the UK.[35]

Around 680,000[36] Greater Manchester residents live in areas that fall into the 10% most deprived areas in the country. Life expectancy varies between local authorities, but also within them. There is considerable variation between relatively small areas (middle super output areas or MSOAs) within each local authority. The MSOAs with the highest and lowest life expectancies within each local authority are shown below [Figure 7].

Figure 7: Life expectancy variance across GM (GM Population Health Plan 2017-2021)

[31] ONS, Mid-2016 Population Estimates for 2016 Wards (Experimental Statistics), compared to Census Area Statistics (CAS) Ward population estimates, mid-2009 (Experimental Statistics)
[32] ONS Population Projections, 2016-based sub national population projections, 2018 accessed via NOMIS
[33] ONS, 4th September 2018
[34] Centre for Ageing Better, March 2016, Partnership to tackle inequalities in later life in Greater Manchester https://www.ageing-better.org.uk/news/partnership-tackle-inequalities-later-life-greater-manchester
[35] ONS, An overview of lifestyles and wider characteristics linked to Healthy Life Expectancy in England: June 2017
[36]GM Health and Social Care Partnership, "GM Population Health Plan 2017-2021" (2017)

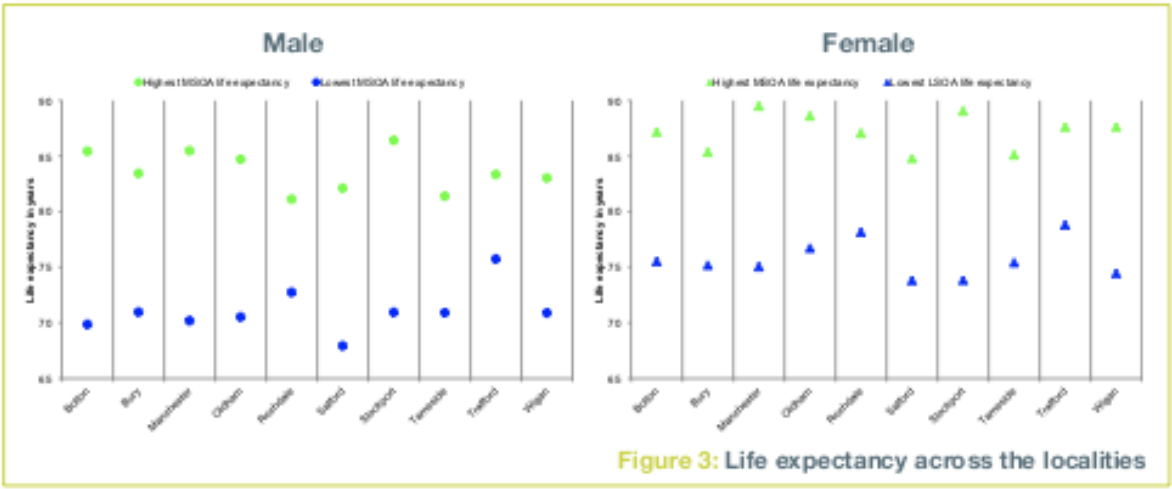


Figure 3: Life expectancy across the localities

Across almost all public health measures GM lags behind the UK. For example, around two-thirds of adults in Greater Manchester are overweight or obese: the proportion varies from 61.5% in Manchester to 69.7% in Rochdale. A similar picture of poor health is consistent across other health outcomes:

- One in five adults in Greater Manchester smokes; smoking prevalence in 2015 ranged from 15% in Stockport to 23% in Manchester. In 50% of Greater Manchester local authorities, smoking prevalence is significantly higher than the England average of 17%.
- Across almost all standard published measures of alcohol harm, including alcohol-related mortality and alcohol-related hospital admissions, Greater Manchester local authorities have significantly worse figures than the respective England averages.
- According to the ONS, in 2016, Manchester had the highest rate of preventable mortality in the UK, almost two and a half times higher than the area with the lowest rate[37].

4.3.2 A positive jobs growth story but an uneven distribution of employment

GM is currently experiencing decade-high levels of employment, with unemployment now at pre-recession levels. 1,255,000 GM residents of working age (16-64) were in employment in June 2017 (71% of the working age population), the highest employment rate seen in the last decade.

Unemployment (measured according to the International Labour Organisation definition) in GM stood at around 75,000 residents in June 2017. Equal to 6% of the economically active working age population, this unemployment rate is the lowest seen since June 2007[38].

Around 438,000 working age residents in GM were economically inactive in June 2017 (nearly a quarter of the working age population). The size of this group has remained relatively similar over the last decade, and it includes the retired, the temporarily or long-term sick, and those looking after the family or home.

[37] ONS, An overview of lifestyles and wider characteristics linked to Healthy Life Expectancy in England: June 2017
[38] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis

4.3.3 GM is experiencing increasing job polarisation in the labour market

Over the last decade the share of high-skilled occupations (managerial, professional and technical) in the GM workforce has increased (from 39% to 42%), while the share of medium-skilled occupations has fallen.

Whilst this is an improvement in GM labour market's occupational profile, it still lags the UK in the share of high-skilled occupations, and this gap has grown from 2 percentage points in 2007 to 3 percentage points in 2017. Over the same period, medium skill roles in GM have declined faster than the UK average with employment in skilled trades in GM dropping by 12% (compared to the UK average of -4%) over the decade, employment in administrative and secretarial roles in GM also dropped by 12% (compared to a UK average of -11%). In contrast, elementary and caring/leisure roles have grown in GM more rapidly than in the rest of the UK[39].

When combined with growth in demand for high skilled roles, these trends point to a continued 'hollowing out' of the labour market, whereby growth in demand for high skilled and to a lesser extent elementary occupations occurs, while the number of people employed in mid-skilled roles declines. The consequences of this development include the continued displacement of workers (typically from routine intermediate jobs, often as a result of technological change) and concerns about the impact on progression from entry level to mid-ranking jobs if demand for the latter is falling and the former is rising.

4.3.4 A rise in atypical employment is changing the type and nature of work in GM

Full-time employment remained the most common type of employment in GM in 2017 (with 946,400 residents working in full-time employment), followed by part-time employment (306,200), self-employment (158,700), and non-permanent employment (which includes agency, temporary, casual and fixed term work (73,700)[40].

However, only 10% of all the new jobs created since 2007 have been in full-time employment, while part-time employment accounted for nearly half, self-employment for just under a third, and non-permanent employment for 10%. Just over 96,000 new jobs have been created in these less-typical types of employment since 2007 in GM, suggesting that employment previously defined as 'atypical' is fast becoming the "norm" for new entrants to the labour market. As a result, 21% of the labour force in GM are now self-employed or employed on a temporary basis or zero-hours contract.

Whilst the economic downturn has affected the type of work undertaken, including this increase in 'atypical' forms of work, there is a general trend towards increasingly flexible forms of work. However, it is difficult to know the extent to which this is due to an individual's choice or conversely, a lack of choice or employment options.

4.3.5 Low pay continues to hold back productivity in GM

Low pay is a major issue in GM, whether from the perspective of low pay holding back productivity improvements (or vice versa), the contribution of low pay to worker poverty, or the paucity of good routes to pay progression and skill development. Almost one in four

[39] Ibid
[40] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis

employees in GM in 2017 were low paid (24%) - a significantly higher figure than for the UK (21%).[41]

In 2015, 23% of the jobs performed by residents of GM paid less than the UK Living Wage (£7.85 per hour at the time). Low-pay is a particular issue for people in part-time work, which is predominantly performed by women. In 2015, close to half the part-time jobs performed by women in Manchester, Salford and Bolton paid less than the Living Wage.

Median hourly resident wages in Greater Manchester (£13.13) are also 9% lower than the UK average of £14.37 and in real terms remain far below the level witnessed prior to the recession. Compared with 2008, real median pay in GM was over £1,500 a year lower in 2017.

The sectoral distribution of low pay generally reflects the lower productivity sectors in GM such as administrative and support services; human health and social work; arts, entertainment and recreation; accommodation and food services; and retail. Jobs in low productivity sectors are typically people-facing, interactive service tasks that are difficult to automate (and to a lesser extent to standardise) in order to drive productivity improvements.[42] The proportion of GM jobs in these sectors has grown from 35% in 2000 to 40% in 2014. Employment in these sectors also grew faster in GM than in the UK as a whole, up 5% in the period compared to 4% countrywide.

Across GM, median pay varies across each locality, broadly reflecting the occupations and skill levels of each borough. The table below [Figure 8] illustrates median hourly resident pay and percentage change by authority between 2013 and 2018[43]:

Figure 8: Median Hourly pay by local authority (ASHE 2018)

Local Authority	**Median hourly pay (£)**	**Nominal Growth (%), 2013-18[44]**
Tameside	11.90	8.9
Oldham	11.93	8.8
Salford	12.35	4.2
Bolton	12.40	7.8
Rochdale	12.52	9.7
Manchester	12.84	5.4
Greater Manchester	**13.13**	**7.8**
Wigan	13.32	10.8

[41] ONS, Annual Survey of Hours and Earnings, 2017
[42] New Economy, August 2016, Low Pay and Low Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/140/low_pay_and_productivity
[43] ONS, Annual Survey of Hours and Earnings, Dataset: Place of Residence by Local Authority – ASHE: Table 8 (provisional 2017 and revised 2012)
[44] Note that figures in this column have not been adjusted for inflation and therefore do not represent increases in real terms

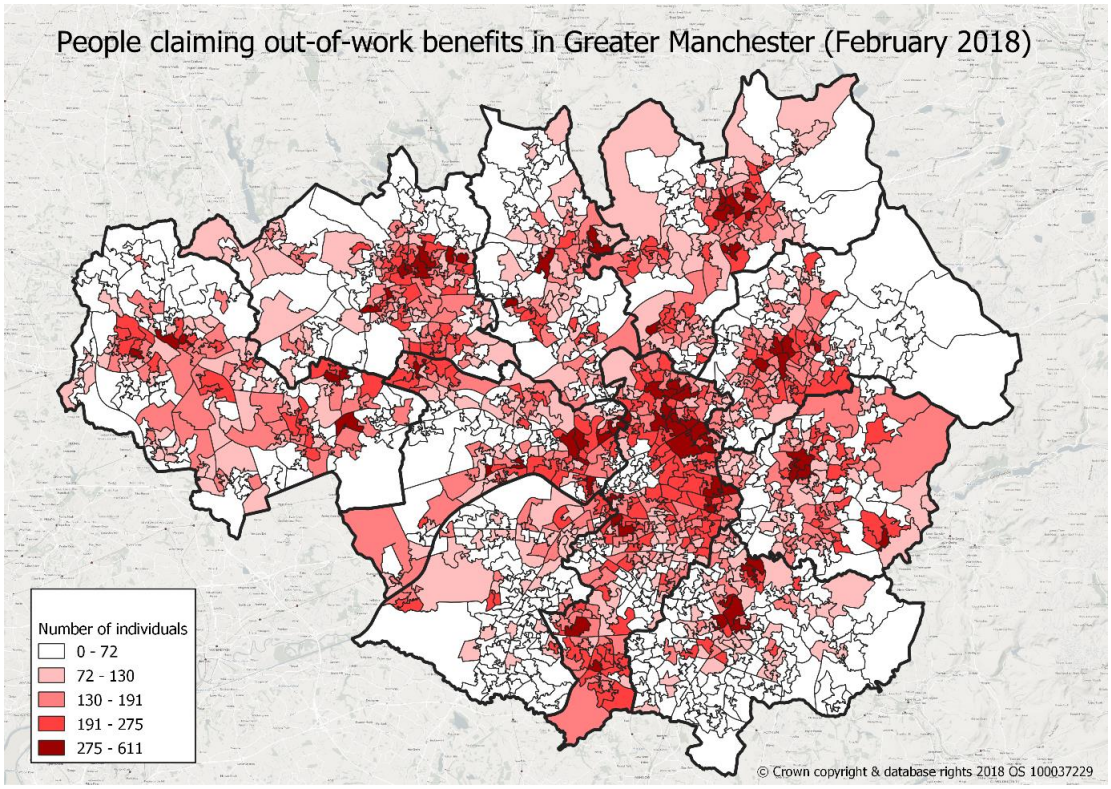
Bury	14.16	13.7
United Kingdom	**14.37**	**9.4**
Stockport	14.67	5.6
Trafford	17.19	16.8

The issue of low wages is further exacerbated when comparisons are drawn between 'workplace wages' and 'resident wages.' In Manchester, the average job paid £78 more than the average wage for a resident in 2014, suggesting that those with higher paid jobs commute in to the regional centre. This gap in Manchester (local authority) remains the highest of England's Core Cities (Nottingham, Newcastle, Liverpool, Bristol, Birmingham, Leeds, Sheffield and Manchester).

4.3.6 While there is overall economic growth in GM, high concentrations of worklessness and economic inactivity remain in a small number of local communities

There are significant concentrations of economically inactive residents in GM, most of whom are unevenly distributed across localities in north and east Manchester and localities in the north and east of the city region, particularly Rochdale and Oldham. [Figure 9].

Figure 9: People Claiming Out of Work Benefits[45] (NOMIS, February 2018)



[45] Out-of-work benefits includes: JSA, ESA/incapacity benefits, Income Support, Universal Credit in the searching for work, planning for work and preparing for work conditionality regimes

39 (out of 215) wards in GM account for 70% of the employment rate gap between the GM and UK average[46]. GM wards with higher levels of worklessness are significantly more likely to include residents that:

- have poor skill levels and lower prior educational attainment
- work in low-skill jobs and industries
- have lower levels of fluency in English
- are lone parents
- are from certain ethnic minority communities e.g. residents with Pakistani heritage are more likely to claim Employment Support Allowance (ESA) than other BAME groups
- are young (aged 16 to 24 years old) or older (over 50 years old)
- have a long-term illness and disability.

Of these factors, the proportion of residents with no formal qualifications is the key factor associated with low rates of employment. Indeed, the MIER identified raising skills to Level 3 was a key way of addressing deprivation (alongside housing and proximity to economic growth), with the proportion of residents with no formal qualifications the key factor associated with low rates of employment. One-in-ten working age adults (177,000) in GM have no formal qualifications. The resident employment rate in GM rises from 38% for those with no qualifications to 64% for residents with a formal (Level 1) qualification, 62% with a Level 2, 68% for those with a Level 3 qualification, and to 84% for those with a level 4 (degree level) or above.

4.3.7 Resident skill level in GM is typically lower than the UK average

Whilst the qualification profile of the resident age working population in GM continues to improve, GM still lags behind the UK average[47]:

- 35% of the working age population in GM were qualified to Level 4 and above in 2017, compared with 38% in the UK.
- The proportion of residents with no qualifications is also higher in GM (10%) than the UK (8%).
- Greater proportions of residents with no formally recognised qualifications tend to be more marked amongst particular groups, including: women, residents aged over 50 years old, 40 to 64-year olds, and in some local authority districts 16 to 24-year olds.
- There are also large variations in the qualification profile of residents in different GM localities. In Bury, Manchester, Stockport and Trafford the proportions of Level 4 qualified residents are relatively high, whereas the proportions of residents with no qualifications are highest in Rochdale and Oldham. Notably all areas in GM apart

[46] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[47] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis

from Trafford, Stockport and Bury have higher levels of residents with no qualifications than the UK average.

- In 2015, 37% of residents in Oldham and 34% of residents in Rochdale had qualifications below NVQ Level 2, compared to 19% in Stockport and Trafford, reinforcing the issue of persistent spatial inequalities across GM.

4.3.8 The skills system is failing to match supply and demand effectively

Weak employer skills investment and concerns over the quality and relevance of publicly-funded training delivery are commonly cited as key reasons why skills gaps and shortages persist in local economies such as GM. 58% of all course starts in further education (colleges and training providers) in GM are at Level 2 or below.[48] In part this reflects the poor prior attainment of many young people (who leave school without key qualifications) and adults. It arguably also reflects the nature of employer demand, with much of the GM economy remaining in the 'low skills equilibrium' identified by the MIER reviewers. For adults, this pattern may also reflect Department for Education funding eligibility rules, with loans replacing public funds for much provision at Level 3 and above.

This pattern of supply appears at odds with the aspirations of GM's economy and, in particular, its growth sectors. Analysis by GMCA has identified misalignment between learning provision and sector requirements most clearly in Digital and Creative, and Business and Professional Services.

Despite an overall increase in the skill levels of the GM population, the key challenges that confront the GM skills system remain similar to those set out in MIER in 2009:

- Persistent low skills levels across the whole GM workforce – amongst young and old (ie both 'stock' and 'flow' of skills)
- Skills gaps and shortages in key sectors – especially at higher technical/technician levels
- Significant and ongoing mismatches between supply and demand
- Lack of networks, relationships and institutions bringing supply and demand sides together
- Particular weaknesses in higher skills and specialist/key sector levels.

4.3.9 The potential impact of skills migration caused by Brexit could reinforce current skills shortages and low productivity across GM

GMCA's analysis[49] suggests that Brexit will play out differently across the UK and within GM. The composition of local economies, in terms of both industry sectors and local workforce, means differential impact and risks. Headline analysis shows four sectors in GM that are more likely to be exposed to any potential changes in migration policy due to the proportion of migrant workers within them, including:

- Distribution, Hotels and Restaurants (26,000 EU workers in GM)

[48] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis
[49] GMCA, 2018, Greater Manchester and Brexit, https://www.greatermanchester-ca.gov.uk/info/20175/research/181/greater_manchester_and_brexit

- parts of Manufacturing (Textiles and Food and Drink - 14,000 EU workers)
- parts of Banking, Finance and Insurance (Shared Services - 13,000 EU workers)
- parts of Public Admin, Education and Healthcare (in particular Social care – 12,000 EU workers)

However, these figures are likely to under-represent the potential impact as many workers are seasonal/contracted through agencies and therefore not included in available data. The analysis also shows low skilled jobs are most vulnerable to future changes in migration as the majority of EU8[50] workers are in lower-skilled jobs. Whilst uncertainty remains surrounding the Government's post-Brexit immigration policy, based on current policy towards non-EU migrants, it is reasonable to assume that labour supply for low-skilled jobs could be put at risk if visa restrictions are introduced.

4.3.10 GM has more to do to prepare its children and young people for life and work in GM

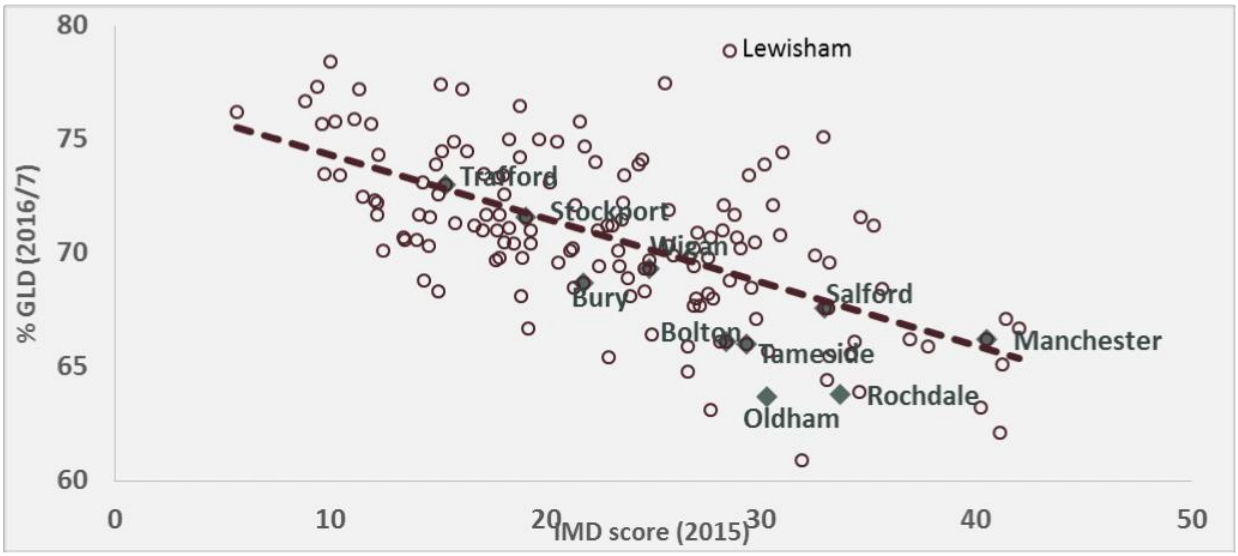
Children in GM are less likely than the England average to have reached a good level of development (GLD) by the end of reception (seen as an indicator of school readiness), with a persistent gap since 2012/13, although the gap had slightly narrowed by 2016/17[51].

In 2016/17, 33% of children (12,100) in GM had not achieved a GLD by the end of reception. If GM were to close the gap with the England average, then the number of children not achieving a GLD would be reduced by 1,200.

The proportion of children achieving a GLD varies considerably between GM districts and is affected by deprivation levels. Figure 10 illustrates the inverse relationship between the level of deprivation and school readiness for local authorities across the UK. The trend line shows the national average GLD rate given any level of deprivation and illustrates that half of GM's local authority areas (Oldham, Rochdale, Tameside, Bury and Bolton) sit below the national average based on their IMD scores.

Figure 10: Good Level of Development by IMD (2015) score - Labour Market and Skills Review (2017)

[50] Countries that joined the European Union at the same time and share characteristics: Poland, Lithuania, Czech Republic, Hungary, Slovakia, Slovenia, Estonia and Latvia (ONS definition)
[51] GMCA, 2018, Greater Manchester Labour Market and Skills Review 2017-18, https://www.greatermanchester-ca.gov.uk/info/20175/research/141/skills_analysis



In 2016/17, GCSE and 'A' Level school attainment figures for GM were below the English national average; primary school performance, by contrast, was slightly higher[39]. A key factor underlying these statistics are relatively high rates of disadvantage seen in parts of GM – with well over a third, and in some areas about half, of children from disadvantaged backgrounds. That said, London has higher rates of educational disadvantage, but achieves significantly higher scores, most notably at GCSE.

Spatial patterns in educational attainment are correlated with deprivation. For example, both Early Years and GCSE outcomes in Rochdale, Oldham and Manchester are consistently lower than Stockport and Trafford. Very high proportions of schools in Oldham and Salford – almost three quarters – achieved "Attainment 8" average scores that are below the English average. Deprivation is considerably and consistently lower in Stockport and Trafford than Rochdale, Oldham and Manchester.

Pupils from Black, Asian and Minority Ethnic (BAME) backgrounds at GM schools slightly outperform White British pupils.[52] However, in the labour market, all BAME groups are less likely to be employed than white people. Residents with Pakistani and Bangladeshi heritage were the least likely to be employed, particularly women.[53] Girls also outperform boys at every stage in education. However, women make up the majority of the low paid workforce.[54]

4.4 Gaps, issues and lines of enquiry

GM demonstrates a positive growth story: it has experienced strong employment growth, a sustained reduction in unemployment, and increasing numbers of higher skilled workers and occupations. However, GM's labour market continues to be characterised by low productivity, low pay and low skills. Too many residents remain in poverty – but more are likely to be in-work through unstable, low paid and 'atypical' employment. The hollowing out of the labour market suggests both opportunity, with growing numbers of more productive

[52] Lupton, MacDougall, IGAU, 2018, Inequalities in Greater Manchester
[53] Elahi, IGAU, 2017, Addressing Ethnic Inequalities in the Greater Manchester Labour Market, briefing paper 7, December 2017, http://hummedia.manchester.ac.uk/institutes/mui/igau/briefings/IGAU-Briefing-7-Ethnicity.pdf
[54] Resolution Foundation, 2017, Low Pay Britain 2017, https://www.resolutionfoundation.org/publications/low-pay-britain-2017/

and higher skilled jobs, and risk, with fewer progression routes through the labour market hampering social mobility.

Spatially, deprivation remains a key determinant in GM's underperformance in Early Year's outcomes, educational attainment and delivering good employment opportunities.

Building on this context, the evidence suggests (as per Section 3: Place) a detailed review of productivity is undertaken, including a focus on the productivity of the workforce (inclusive of the public sector).

A continued focus on inclusive growth and equality is also needed, particularly given the marked shift in the labour market towards atypical working including a more detailed analysis and assessment of the future of work, to ensure the implications in the changing workforce are better understood.

Finally, it is recommended from the evidence that a detailed analysis is undertaken focused on the critical education transition points in GM and likely trajectories of GM residents. The performance challenges facing GM's secondary education system should be seen in the context of high demand for 'second chance' skills training among young people and adults among post-16 providers in the city region.

5. The Five Foundations: Ideas

5.1 Description

"To be the world's most innovative economy"

Industrial Strategy White Paper (2017)

Ideas in the context of the GM Local Industrial Strategy means the extent to which GM can innovate; create new ways of doing things; develop new products and services, new technologies and new business models. This can be from radical transformation or incremental improvements; from within a GM business or from a new insurgent; from a major scientific advance; from one of our global research institutions; the application of a known technology in a new process; and greater collaboration between academics and business to foster market-led collaborations. The collective ideas of GM's people, businesses and institutions are critical to the productivity improvements needed in the city region.

This section identifies the key innovation/ideas/themes from research and analysis undertaken in the past 10 years to better understand the innovation landscape in GM. It details the investment in research and development and innovation by GM firms, the city region's assets and strengths, as well as the particular gaps and challenges to boost investment in innovation/R&D.

5.2 Analysis and research undertaken

Over the past decade, GMCA has undertaken a detailed analysis of research, development and innovation in the city region:

- Firstly, through the Deep Dive Review process, over two phases (2016 and 2017)[55], designed to strengthen GM's evidence on the strengths and weaknesses of the local economy and develop plans in response to the economic issues and opportunities found in all parts of GM.
- Secondly, a thematic focus through the Greater Manchester and Cheshire East Science and Innovation Audit (SIA)[56] which assessed the key science and innovation strengths, assets and capabilities in the region, and set these in the context of an analysis of gaps and opportunities.
- Thirdly, GMCA captures the opportunities and barriers to growth that GM firms face through the annual Greater Manchester Business Survey[57] across a range of themes including innovation.

Together, this research base provides a compelling picture of GM's core strengths and assets, the significant opportunities for GM if it is able to leverage its innovation potential, the particular challenges to growing innovation in GM, and the considerable gap between GM and peer city regions.

[55] GMCA, 2016, Deep Dives Phase 1 – Sector Reports and GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research

[56] Greater Manchester Cheshire East Science and Innovation Audit,2017, https://www.greatermanchester-ca.gov.uk/news/article/97/greater_manchester_and_east_cheshire_a_science_and_innovation_audit_report_sponsored_by_the_department_for_business_energy_and_amp_industrial_strategy

[57] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1

5.3 Summary of Findings

5.3.1 GM has a critical mass of acknowledged Science and Innovation assets

The Greater Manchester and Cheshire East Science and Innovation Audit identified two areas of focus:

1. 'Core strengths' in health innovation and advanced materials, where GM has existing, internationally-recognised excellence:

- *Health* – a globally leading centre for clinical trials. GM has the largest concentration of excellence in health research nationally outside South East England. Key facilities in support of cutting-edge research and innovation are set in the context of a large and stable population exhibiting significant health challenges. Health devolution to GM (£6bn pa.) has created an opportunity for a concerted push towards innovation for both health and economic benefit. This strand builds on excellence in precision medicine, health informatics and bringing clinical research excellence and innovation into practice.

- *Materials* – rapid accelerator to application. In advanced materials, the opportunities to develop 'Graphene City' highlight the presence of world-leading science (eg National Graphene Institute) engaged with business and producing start-up companies. This strand will drive innovation in sectors such as environment, manufacturing, housing, transport, and biomaterials (to address health and well-being challenges), and maximise the capabilities and networking of the key national assets in this domain situated in our region.

2. 'Fast-growth opportunities' focused on the future potential of digital, energy, and industrial biotechnology, where GM's assets and capabilities offer real scope for future development:

- *Digital:* This is a key enabling technology for the other sectors, and there are specific opportunities in Big Data, in GM's extended programme of demonstrator and test-bed projects in the domain of smart cities/Internet of Things (IoT), and via the dynamic creative, digital and media economy in the region.

- *Energy*: Opportunities arise from GM's leading position in nuclear research, and in low carbon energy generation, transmission and storage.

- *Industrial biotechnology:* The concentration of this sector in the North of England provide opportunities to drive technological advances in molecular biology and biotechnology to support drug discovery and development, as well as sustainable and clean production of chemicals for use in manufacturing.

The SIA also highlighted the importance of strengthening GM's innovation support eco-system, through enhancing collaboration, nurturing talent, and improving business support.

Assets across these core strengths/high growth areas include the following:

- *AI and Data:* the European Big Data Laboratory (home to Hitachi's Global Centre for Innovative Analytics and the Cisco Create UK R&D team), located at Corridor

Manchester, University of Manchester's Data Science Institute, The UK National Advanced Robotics Research Centre based at University of Salford.

- *Health Innovation*: Biomedical Research Centre, Academic Health Science Centre, Manchester Cancer Research Centre, Alderley Park Science Park, Medicines Discovery Catapult Hub, Antimicrobial Resistance Research Centre, Citylabs, Precision Medicine Catapult Spoke, and the Salford Lung Study (the world's first digitally enhanced randomised clinical trial of a drug for chronic obstructive pulmonary disease (COPD).
- *Advanced Materials:* Sir Henry Royce Institute, National Graphene Institute, Graphene Engineering Innovation Centre, BP International Centre for Advanced Materials (BP-ICAM), Cockcroft Institute.
- *Digital:* MediaCityUK, Farr Institute, CityVerve, Jodrell Bank, Hartree Centre (Sci-Tech Daresbury), University of Manchester's School of Computer Science and Data Science Institute, and associated tech cluster.
- *Energy:* National Nuclear Laboratory, Dalton Nuclear Institute, National Grid High Voltage Laboratory, Birchwood nuclear cluster, Amec Foster Wheeler's High Temperature Facility.
- *Industrial Biotechnology*: Manchester Institute of Biotechnology, Waters Corporation's Mass Spectrometry Facility, AstraZeneca's R&D facility, Antimicrobial Resistance Centre.

5.3.2 GM has strategic, place-based science and innovation assets

As well as sector/theme-specific assets, the SIA highlights that the following sites offer significant innovation potential:

- *Corridor Manchester:* is home to an exceptional group of knowledge-intensive organisations and businesses. The area has consistently generated 20% of the city's GVA, employing over 63,000 people within this large scientific and digital community, with over half these in knowledge-related sectors.
- *Sci*-tech Daresbury: has over 1,200 people on-site including >400 scientists working in fields including accelerator science, high-performance computing, simulation and data analytics and sensors and detectors. It operates large-scale facilities used by many UK universities and increasingly to industrial companies (eg IBM, Unilever, Bentley Motors, and BAE Systems).
- *Alderley Park:* Alderley Park in Cheshire East (1.5m sq.ft. office and laboratory space), owned and operated by Manchester Sience Parks, is home to over 150 bioscience companies with specialist industry facilities and equipment for chemistry, bioscience, drug metabolism, mass spectrometry and nuclear magnetic resonance. Alderley Park is also home to important national assets such as the Medicines Discovery Catapult.

In addition, a number of sites in GM provide world-leading innovation/research such as The Christie NHS Foundation Trust (Europe's largest cancer centre and the largest early-phase clinical trials unit in the world).

5.3.3 GM is developing human capital at scale

GM's four universities were home to almost 100,000 students: 82% were UK domiciled, 13% international (non-EU), and 5% from the EU. Together, GM's universities generated almost 20,000 first-degree graduates (STEM and non-STEM) in 2013/14. GM accounts for 7% of UK's doctorates overall, and almost 8% of England's STEM doctorates (11,000 students). The universities have over one million alumni across the world, and are in contact with a very large proportion, many of whom are in prominent positions in business, universities or governments. In STEM subjects, there are a total of 43,000 students in GM (32,000 undergraduates and 11,000 postgraduates)[58].

5.3.4 Innovation is a key driver of long-term growth in GM

The GM Business Survey compares the profile of innovative firms with non-innovative firms. Innovative firms are defined as those that have developed new business models which have resulted in major competitive advantage for the business and/or those that have actively engaged with Universities or other Higher Education Institutions to transfer knowledge. Innovative firms in GM are more likely to have reported[59]:

- Increased turnover, employment and exports in the last 12 months, compared with non-innovative firms.
- Greater levels of confidence about future turnover and employment growth and were more likely to access finance.
- Awareness of – and taken advantage of – local business support programmes and to have used R&D tax incentives.

The survey also highlighted that Manufacturing and Digital and Creative Industries, and firms located in Manchester and Trafford, were more likely to be recorded as innovation-active firms.

Volterra's Innovation, Trade and Connectivity (ITC) report[60], that informed the MIER, suggested that innovations spread more easily within a supply chain with trading links than amongst a group of competitors. However, a large number of firms in GM identify themselves as having no trading links with other firms in the city region. Whilst these firms are an important conduit for innovations from elsewhere, this suggests that the spread of innovations within GM is slow or limited.

Better linking the large proportion of firms with no trading links within GM could therefore have a large impact on the diffusion of innovations and facilitate long term growth. Furthermore, GM's universities (and others across the North) could act as a better bridge connecting parts of GM's business community, enhancing the city region's capacity to innovate, re-doubling their efforts in their historic role as important institutions where ideas can be exchanged freely.

5.3.5 Despite its assets and potential, GM could improve commercialising research into products

[58] Greater Manchester Cheshire East Science and Innovation Audit,2017, https://www.greatermanchester-ca.gov.uk/news/article/97/greater_manchester_and_east_cheshire_a_science_and_innovation_audit_report_sponsored_by_the_department_for_business_energy_and_amp_industrial_strategy
[59] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1
[60] Volterra, 2009, Innovation, Trade and Connectivity, https://volterra.co.uk/wp-content/uploads/2013/02/Innovation-Trade-and-Connectivity-MIER.pdf

While there is a critical mass of research institutions in GM, the track record on translating this research excellence into marketable products is comparatively modest. While there are questions about direct comparability, proxy indicators of innovation such as patent applications per million inhabitants (2008 to 2012) show that GM (37) falls well below that seen in both other UK core cities such as Bristol (168), Sheffield (105), and also London (95)[61].

5.3.6 Spending on R&D is lower in GM than comparable city regions

Across all key measures for public and private sector investment in R&D (e.g. patent box, R&D tax credit take up, InnovateUK funding and university R&D spending), spending is lower in GM than might be expected for a city region of its size. Analysis of total intramural R&D expenditure (i.e. R&D undertaken 'within the walls of firms') shows that R&D spending has fallen since the recession in GM and the total spend in GM as a proportion of total UK spend has also fallen. With R&D expenditure of just 0.9% of GVA, GM ranks in the bottom ten equivalent areas in the UK when R&D spend is expressed as a proportion of total GVA[62]. Data on the uptake of R&D tax credits also shows that the region is fifth in the UK rankings in 2016 on R&D tax credit claims, with £130m compared with £725m in London[63].

5.3.7 Significant barriers to innovation and R&D remain

Almost a third of firms which participated in the GM Business Survey (2017)[64] reported barriers to growing innovation. The main challenges identified were a lack of:

- Finance to support innovation
- The in-house knowledge and skills to develop and manage innovation
- Knowledge of funding available to support innovation

However, those firms that did report making improvements across the four pillars of innovation – product, service, process and business model innovation – demonstrated key characteristics such as:

- SME (11-199 employees) with strong turnover and employment performance
- Being a skills active business with a commitment to workforce development
- More likely to consider relocation and to recognise finances and workforce skills as barriers to growth
- More likely to export with a particular focus on support for training, leadership and management and access to finance
- Highly active in seeking business support

5.3.8 International investment and innovation in GM

According to Government's national Industrial Strategy White Paper, 17% of total UK R&D investment is financed from abroad, with half of UK R&D being performed by overseas-

[61] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[62] Eurostat, 2014 Regional R&D spending
[63] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[64] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1

owned businesses. However, there is limited evidence to demonstrate the role and impact that FDI has on business innovation in GM and at a national level.

Furthermore, whilst UK funding of businesses' expenditure on performing R&D has increased by £6.5 billion to £18.7 billion since 2010, overseas funding has declined with a drop of £301 million to £3.5 billion in 2016[65].

5.4 Gaps, issues and lines of enquiry

A review of current evidence suggests that the 'Ideas' theme represents a big opportunity for GM. By almost all measures of R&D and innovation, GM is punching below its weight given the city region's significant assets and resources. Further analysis is required to understand what is driving the persistent innovation-light growth. Similarly, given the well-rehearsed global opportunities/challenges facing GM (rising automation, robotisation, digital connectivity, disruptive business models substituting labour), GM would benefit from learning from thinking more carefully about how to improve its innovation/R&D performance.

There is a significant challenge in measuring investment in innovation (and R&D) within the UK. Whist surveys typically capture the value of inputs to products and processes, much less is known about the outcomes from investment.

Further mapping of science, research and innovation assets and strengths in the private sector and how these can be brought together with university and public sector assets is needed. More work could also be done to understand the effectiveness of commercialization strategies.

Further improvement in understanding supply chain-linkages could be made. This could include if, and how, international supply chain linkages inject dynamism, innovation and knowledge transfer into the local economy, particularly in the context of Brexit.

Finally a better understanding of the impact of Foreign Direct Investment (FDI) on innovation in GM would be valuable. This could include understanding how FDI supports innovation in GM and identifying the common traits of firms that grow innovation by investing in GM.

[65] ONS, 2016, ONS Statistical Bulletin: Business enterprise research and development, UK, https://www.ons.gov.uk/economy/governmentpublicsectorandtaxes/researchanddevelopmentexpenditure/bulletins/businessenterpriseresearchanddevelopment/previousReleases

6. The Five Foundations: Business Environment

6.1 Description

"To be the best place to start and grow a business"

Industrial Strategy White Paper, 2017

Greater Manchester's emergence as the largest city-based economy outside London is testament to its success as a place to do business. GM's ability to attract investment, enable more new business start-ups and grow existing employers will be critical to its future economic fortunes. As noted in previous sections, MIER emphasised the importance of a firm being located within a large urban area, with a business environment that supports growth.

This section provides a review of Greater Manchester's key enterprise, trade and growth dynamics, drawing on a wide range of data and analysis to present key findings. Key opportunities and challenges within sectors and across GM's business base are highlighted, along with areas where further research is required to improve understanding.

6.2 Analysis and research undertaken

Greater Manchester's business environment has been the focus of extensive recent research and analysis. The slow economic recovery following the recession, the implications of Brexit and opportunities arising from devolution – including commitments to develop the Northern Powerhouse – have formed the backdrop to the broad range of research that has been drawn upon to develop this review of the GM business environment. This includes:

- 'Deep Dive' phases 1 and 2 explain and explore the issues and opportunities within nine key sectors in GM.[66]
- Segmentation analysis of 96,000 companies that comprise GM's business base undertaken by GMCA, identifying (amongst other things) GM-based employers operating in high value sectors, achieving high growth rates, as well as those in foreign ownership[67].
- Analysis of the 'scale-up' performance of GM firms, assessing the prevalence of successful scale-ups by companies in key sectors[68], alongside parallel national research by the Scale-Up Institute[69].
- The Greater Manchester Business Survey[70] which has provided data, particularly in relation to export barriers, enabling greater understanding of the issues and opportunities in relation to exports, building on HMRC Regional Trade Analysis[71].

[66] GMCA, 2016, Deep Dives Phase 1 – Sector Reports and GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research
[67] Research undertaken by GMCA, 2017, Business Segmentation analysis using FAME business data, Bureau Van Dijk
[68] Research undertaken by GMCA for the Growth Company, 2018, scale ups in Greater Manchester
[69] Scale-Up Institute Annual Scale Up Review, 2018, http://www.scaleupinstitute.org.uk/scaleup-review-2018/
[70] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1
[71] HMRC, 2018, Regional Trade Statistics, https://www.uktradeinfo.com/Statistics/RTS/Pages/Analysis.aspx

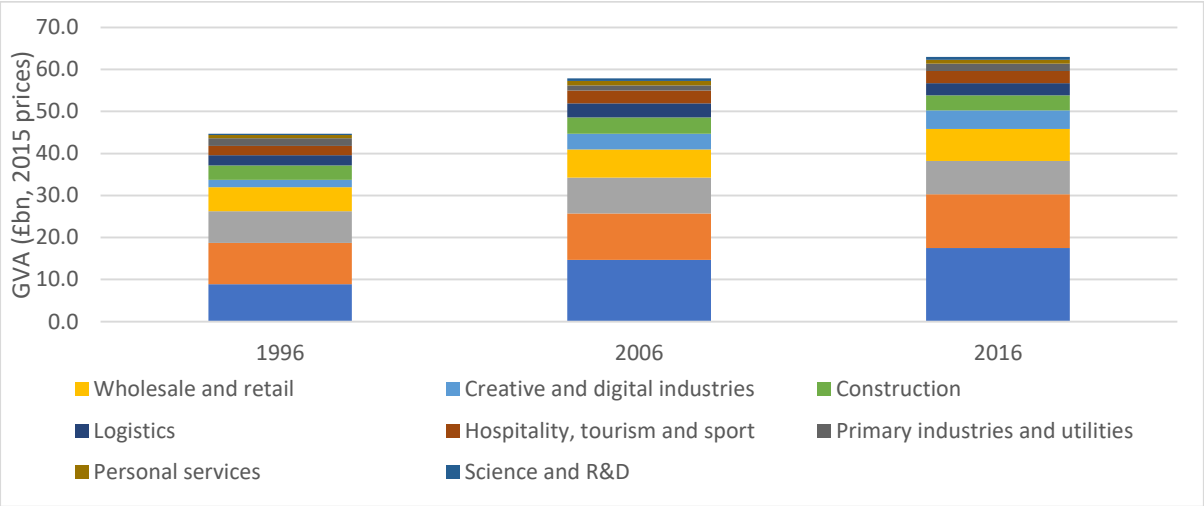
- Data from GM's inward investment agency (MIDAS)[72], alongside a report by EY[73], provided the bedrock for analysis of foreign direct investment in the city region.

6.3 Summary of Findings

6.3.1 The strength of GM's business base is its diversity

The MIER noted that GM is home to one of the most diverse business bases of any major UK city. This brings resilience against sector-specific economic shocks and the opportunity for GM to pursue multiple growth opportunities. As Figure 11, below, illustrates, this continues to be the case. Each of GM's main sectors has continued to grow in value over the last two decades.

Figure 11: GM Economy Sector Breakdown by GVA - £bn, 2015 prices (GMFM, 2016)



The absence of major employers headquartered in GM is a notable feature – only six companies registered in GM have an annual turnover in excess of £1bn, led by the Cooperative Group, Lookers (car dealerships) and JD Sports (retail)[74]. Nonetheless, GM's Deep Dives highlight key strengths in high value sectors. These include:

- Advanced Manufacturing, which employs 55,000 people and is the most productive GM sector (£72,000 GVA per employee). Jobs in Advanced Manufacturing are widely dispersed, with modest concentrations in Trafford Park, Manchester Airport and Irlam/Cadishead.
- Digital and Creative industries, employing 54,000 people, concentrated in Central/East Manchester, in and around MediaCityUK, and near Manchester Airport.
- Business, Financial and Professional Services, employing 225,000, focused in Salford Quays, Manchester city centre, Trafford Park, with smaller town centre clusters[75].

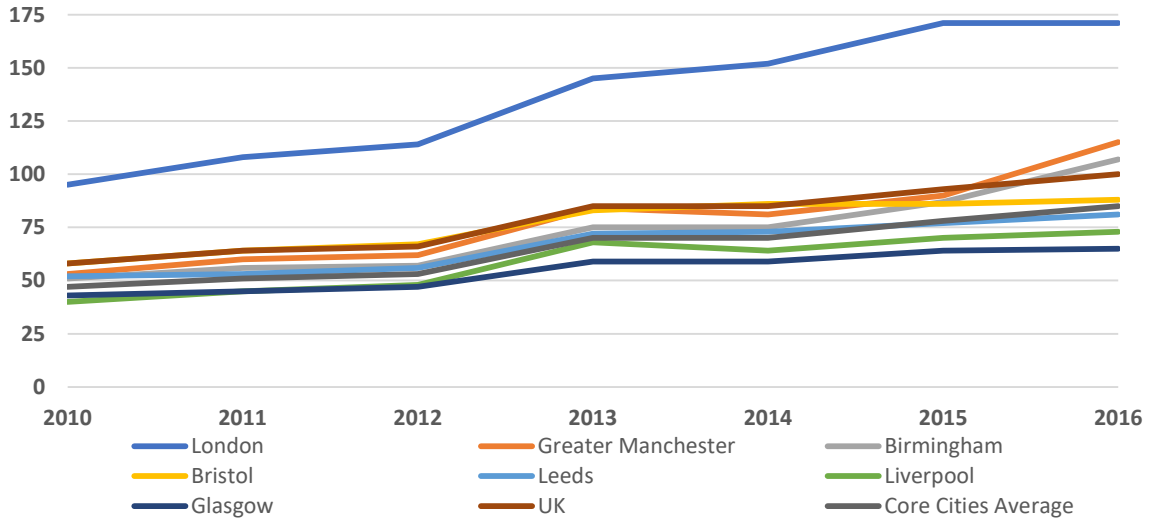
[72] MIDAS, 2017,End of Year Report 2017/18
[73] EY, 2018, UK Attractiveness Survey, https://www.ey.com/uk/en/issues/business-environment/ey-uk-attractiveness-survey
[74] Research undertaken by GMCA, 2017, Business Segmentation analysis using FAME business data, Bureau Van Dijk
[75] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research

6.3.2 Scale up performance in GM is below average but business birth rates have grown

Overall business density in GM is low compared to national and international standards. GM has 550 enterprises per 10,000 adults, lower than the UK average (660) and London (790)[63]. The densest economic activity is in the Regional Centre and, to a much lesser extent, in town centres.

Business start-up rates in GM have improved sharply in recent years, moving ahead of national and peer city levels [Figure 12]. In 2016, there were 115 business births in GM per 10,000 population, making it the best performing city region outside London (171). Matching London's business birth rate over 5 years would add £1.5bn to GM's economy[76].

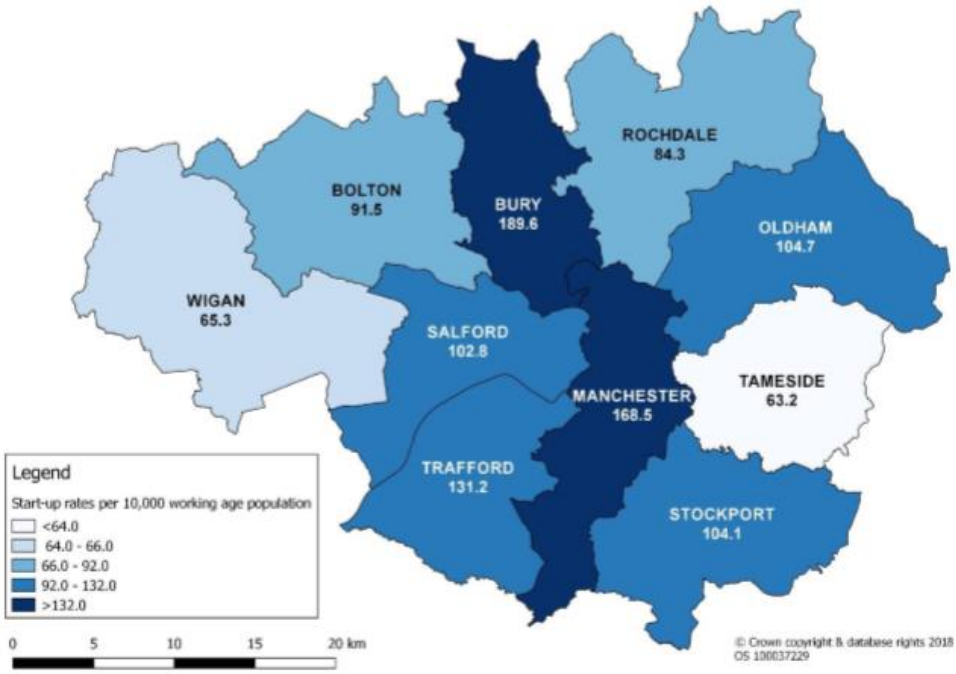
Figure 12: Business births per 10,000 working age population[77] (source: ONS Business Demography, 2017)



Growth in business births across GM masks significant variances between GM districts. In 2016, Bury's rate of business births (190 per 10,000 population) was around three times the level achieved in Wigan (65) and Tameside (63), as the map below [Figure 13] shows.

[76] GMCA, 2018, Scale ups in Greater Manchester. Report prepared for the Growth Company.
[77] Core Cities agreed definitions

Figure 13: Business births per 10,000 working age population in Greater Manchester, 2016[78]



First year survival rates for start-ups across GM have been falling and are below the national average. Three-year survival rates have been steady, but again GM performs below the UK average (58.2%, compared to the 60.8% national average)[79]. London's business survival rates are below those of GM, however its high rate of business births means that the growth in the overall business base has outstripped GM. A similar trend can be seen across GM, whereby Manchester, Trafford and Salford have seen high rates of business birth and low survival rates.

Greater Manchester's performance in terms of 'scale-up' businesses broadly mirrors business births. Scale-ups are defined by OECD as enterprises with average annualised growth in employees or turnover of greater than 20 per cent per annum over a three-year period (and with more than 10 employees at the beginning of the observation period).

In 2016 there were 83.7 scale-ups per 100,000 working age residents in GM. This is:

- Below the UK average (85.0) but above the UK average excluding London (79.8)
- Above the North West (81.4) average
- London (115.5) aside, Bristol is the only city with a higher scale-up rate than GM (98).

Again, there is significant variation between districts in Greater Manchester with rates around twice as high in Trafford (124.0 per 100,000 working age residents) than Wigan (59.3) and Tameside (60.7)[80]. Wigan and Tameside appear to be 'cold spots' in relation to rates of business births and of scale-ups.

[78] ONS, Business Demography, 2017
[79] GMCA, 2018, Scale ups in Greater Manchester. Report prepared for the Growth Company.
[80] ScaleUp Institute, 2017, Annual Scale Up Review 2017, http://www.scaleupinstitute.org.uk/scaleup-review-2017/

GM's scale up ecosystem appears to compare well to peer cities – a GMCA scale-up index (built on Nesta's European Digital Cities Index) rated GM 16th out of 60 cities in Europe, and 5th out of 9 in the UK. Strengths include the business environment and infrastructure. Key GM weaknesses compared to other cities are lifestyle factors and access to skilled labour[67].

A number of national reports have identified the importance of mid-sized businesses (MSB). Definitions do however differ for MSBs, for example, BEIS define MSB's as turnover between £25 and £500m[81]and Grant Thornton as firms with more than 50 employees and fewer than 499. Nationally the number of MSBs has grown from 2007 to 2014, by 8.2% compared to 5.4% for large and 4.6% for small firms. They have outperformed the market in terms of job growth and business growth, productivity growth, and investment in innovation. Despite this MSB's R&D intensity is still below the EU average.[82] In GM, initial analysis using the BEIS definition only, suggests that there are just under 1000 MSBs[83] and they appear to be an important driver within the economy, as nationally. There are a higher proportion of scale ups at MSB level (3.7%) compared to small firms (<1%) and broadly aligned with large firms (3.6%). MSBs in GM are more likely to trade internationally than small or large firms, and more likely than small firms (but less likely than large firms) to invest in R&D as nationally.

6.3.3 GM's export performance is weak and over-reliant on a few specific markets

Greater Manchester's export performance compares poorly to other cities and national benchmarks, despite recent growth. The value of goods exports from GM firms was £6.4bn in 2016, a rise of 16% from the previous year[84]. GM is ranked only 19th out of 40 EU NUTS2 regions in the UK in terms of the value of its goods exports and 5th among major UK cities. In comparison, the value of goods exports from the West Midlands, which has a similar population size to GM, in 2016 was £15.9bn – two and a half times the level of GM.

GM's per-capita goods exports of £2,320 in 2016 was behind most other city regions and the UK average (£4,486 per capita). GM's goods exports are around £5.9bn less than would be expected if the city region matched the national average performance.

The distribution of export activity is uneven across GM. Businesses in Salford and Trafford account for 26% of GM goods exports. In contrast, only 12% of GM's goods exports are derived from Bolton and Wigan[70].

58% of GM's goods exports are to the rest of the EU, compared to an average of 49% nationwide[85]. This means that GM's exporters are more exposed to Brexit risks than other areas.

Data from the 2017 GM Business Survey[86] suggests that exporters are concentrated in Manufacturing (where over half of GM firms export), Logistics and Digital. Exporters are more likely to be high growth companies (24% of which export, compared to 15% of all firms)

[81] BEIS, 2014, MSB Demographics, https://www.gov.uk/government/collections/mid-sized-businesses
[82] Grant Thornton, 2015, Agents of Growth, https://www.grantthornton.co.uk/globalassets/1.-member-firms/united-kingdom/pdf/publication/2015/agents-of-growth-2015.pdf
[83] Bureau van Dijk – FAME database applying BEIS definition of Mid Sized businesses - as turnover between £25 and £500m
[84] HMRC, 2018, Regional Trade Statistics, https://www.uktradeinfo.com/Statistics/RTS/Pages/Analysis.aspx
[85] Greater Manchester and Brexit, https://www.greatermanchester-ca.gov.uk/downloads/file/516/greater_manchester_and_brexit
[86] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1

and are more likely to have grown turnover and jobs – 30% of exporters expect their workforce to grow, compared to 23% of non-exporting firms. Annual GM business surveys consistently highlight regulations as the main barrier to overseas business, followed by political risk, and language and cultural barriers. These factors are not dissimilar to several national surveys over the last five years.

6.3.4 GM's inward investment performance is good but reliant on Manchester

MIER's Inward and Indigenous Investment review[87] found that inward foreign investment into the region does not 'crowd out' local investment and does not need subsidy to attract it. However inward investment overall was not found to have a positive effect on the productivity of domestic firms operating in the same sector in GM, despite a positive effect observed on the productivity of firms in downstream sectors (i.e. those which are buying from the overseas investors).

MIER also showed that large domestic companies are most likely to invest, not foreign-owned companies. Ten years on, data from GM's inward investment agency, MIDAS, shows that investments by large domestic employers continue to generate more jobs than FDI. Between 2015/16 and 2017/18, companies from within the UK accounted for only 37% of all investment projects, but these projects accounted for 55% of all jobs created via all UK and foreign investment[88].

Among those investing from outside the UK, the largest share of FDI investment projects in GM over the past five years have come from within the EU (88 projects), followed by North America (73) and Asia Pacific (67). Notably, the MIDAS data shows that in 2017/18 the number of FDI projects from North America rose sharply to reach 21, while those from the EU fell significantly to 12[89]. The key sectors drawing investment to GM are Advanced Manufacturing, Life Sciences, Financial/Professional/Business Services and Creative/Digital.

The bulk of investment activity reported by MIDAS was in Manchester, which accounted for 55 of the 80 investment projects secured in 2017/18. Manchester's strength in the FDI market was reinforced earlier this year in a report by EY, which concluded that Manchester 'remains the leading city for FDI in the UK outside London', with five-year average annual project numbers (35) well ahead of Edinburgh (24), Birmingham (20) and Leeds (17).[90] This positive analysis is backed up by multiple other surveys and rankings, including the IBM Global Location Trends report 2018, which ranked Manchester 10th globally as an FDI destination.

Another key development in recent years has been the creation of substantial investment funds under management by GMCA. This was developed in response to a MIER finding that firms in the city region were unusually reliant on debt finance, compared to national averages (at a time when the global economy was heading into a 'credit crunch'). The subsequent Greater Manchester Growth Plan[91], published 18 months after the launch of MIER, stimulated work that has resulted in GM building £635m of funds under management

[87] MIER, 2009, Growing Inward and Indigenous Investment, http://manchester-review.co.uk/wp-content/uploads/2015/02/Mier_GrowInwards_FINAL.pdf
[88] MIDAS,2017,End of Year Report 2017/18
[89] ibid
[90] EY, 2018, UK Attractiveness Survey, https://www.ey.com/uk/en/issues/business-environment/ey-uk-attractiveness-survey
[91] New Economy,2012, Greater Manchester Growth Plan http://www.neweconomymanchester.com/publications/greater-manchester-growth-plan

across housing, business and commercial property. The funds came from a variety of sources Regional Growth Fund, Growing Places, European funding, Local Growth Fund and UK government loan. All funds are recycling as they have principally been invested as loans although there are some equity positions as well.

6.3.5 Barriers to growth remain to be addressed

The main barriers to growth identified by firms are consistent in GM Business Surveys between 2012 and 2017[92]. The key issues commonly identified are workforce skills, access to finance, and growing trade and markets.

Workforce skills are a particular issue for firms in Bury, Rochdale and Wigan and among employers in Hospitality, Tourism and Sport, Digital and Creative Industries, and Personal Services. Overall, employers describe around 6% of GM's vacancies as hard-to-fill (2015), compared to the England average of 8%.

Access to finance is seen as a key barrier. Consecutive GM Business Surveys since 2012 have identified accessing finance/finances of the business as one of the top three barriers to growth. Accessing finance/finances of the business was the most commonly cited barrier in 2017 with 30% of businesses surveyed identifying accessing finance/finances of the business to be a barrier to growth[93]. The 2017 GM Business Survey found that business finances were significantly more of a barrier in manufacturing (37% of businesses against 30% on average)[88].

Separate data on bank lending to SMEs in GM suggests a decline in the value of bank lending between 2013 and 2017[94], this was faster than the decline seen nationally. Bank lending also varies by districts with Bolton, Oldham, and Rochdale seeing the greatest decline relative to the GM and national average. Manchester and Salford are the only districts in which firms have experienced (slight) growth in levels of lending.[95]

Growing trade and new markets was more likely to be reported as a barrier by firms in Manchester, Stockport and Trafford, and firms within Manufacturing and Digital Industries. Hospitality, Tourism and Sport, and Construction firms were less likely than the other sectors to report this as a barrier. The main challenges identified were compliance with regulations, finance to support exporting, and taxation/tariffs.

22% of firms which participated in the GM Business Survey reported barriers to growing innovation. The main challenges identified were 'lack of finance' (1 in 10 firms identifying barriers), 'lack of in-house knowledge and skills to develop and manage innovation'; and 'lack of knowledge of funding available to support product and service innovation.'

A fifth (20%) of firms indicated that they face barriers to adopting digital technology, and most cited that this related to 'speed of local connectivity'. Additionally, just over one-in-ten (13%) said that their business faced barriers to increasing resource efficiency with the main barriers being: 'access to finance', 'knowledge of funding' and 'the cost of innovation'.

[92] Greater Manchester Business Survey, 2017, https://www.greatermanchester-ca.gov.uk/info/20175/research/123/gm_business_survey/1
[93] Research undertaken by GMCA, 2017, Access to Finance in Greater Manchester analysis using FAME business Survey
[94] UK Finance, UK Lending by Postcode Sector, Q118, https://www.ukfinance.org.uk/statistics/postcode-lending/
[95] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester, https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research

6.4 Gaps, issues and lines of enquiry

Greater Manchester's business environment has been the focus of extensive recent research and analysis. However, there are a number of gaps in evidence. Prime amongst these is the need to better understand GM's national and international supply chain and trade linkages at a time when GM's overall export performance remains weak and the risks to firms that trade internationally (from Brexit and US-inspired protectionism) have never been greater.

Better intelligence is also required about the nature of low productivity in GM, segmenting and understanding why GM is more affected by the 'long tail' of low-productivity firms than some of its peer cities.

Finally, the evidence suggests that further work is undertaken to better understand the drawbacks of GM's business environment from the perspective of UK and overseas investors who chose to invest elsewhere.

7. The Five Foundations: Infrastructure

7.1 Description

"A major upgrade to the UK's infrastructure"

Industrial Strategy White Paper (2017)

GM's economy and the quality of life of its residents relies on having the right infrastructure in place to create an inclusive and productive city region and to respond to future challenges. Providing the right infrastructure for the future includes not only transport infrastructure, but also digital, energy, green and blue infrastructure (including green spaces, uplands, river valleys and nature reserves), potable (drinking) water, and flooding, surface and waste water management.

Good connectivity is key to enabling residents to access economic opportunities and employers to enjoy the benefits of a large, deep pool of skilled labour.

This section provides a review of Greater Manchester's infrastructure, drawing on evidence from partners including: from TfGM on transport; digital infrastructure requirements from GM's Digital Strategy; and Open Data Infrastructure Map within MappingGM which maps infrastructure and supports in understanding and planning for the future.

It is recognised that within this foundation a significant body of work is currently underway. In particular an Infrastructure Framework is being developed by GMCA to assess the evidence to understand infrastructure demand to 2040. This is informing thinking on a GM Infrastructure Strategy which will set out the strategic direction for the short, medium and long term across six areas: energy, transport, potable (drinking) water, digital, flooding surface and wastewater management, green and blue infrastructure. The Greater Manchester Spatial Framework is being developed and will set out the land GM requires for jobs and new homes. Alongside this, a Greater Manchester Infrastructure Framework is being developed to provide an assessment of the infrastructure required to support the population and economic growth anticipated and to address wider opportunities and challenges including climate change and digital transformation. Given the timing of these pieces of work, they are not discussed in this report, but relevant evidence from each will feed into any subsequent research commission which the Prosperity Review takes forward.

7.2 Analysis and research undertaken

GM has undertaken a number of studies focusing on different aspects of the infrastructure landscape, including the Greater Manchester Transport Strategy 2040 Evidence Base[96] which provides analysis of travelling patterns across the city region. The evidence base gathered in developing GM's Digital Strategy[97] and the wider evidence base to support the development of the Greater Manchester Spatial Framework (GMSF) – the latest published GMSF was the Draft Consultation in October 2016.[98] The Greater Manchester Spatial Energy Plan: Evidence Base Study[99] provides further insight on energy requirements and

[96] TfGM, February 2017, Greater Manchester Transport Strategy 2040, https://www.tfgm.com/2040
[97] GMCA, 2018, Greater Manchester Digital Strategy 2018-2020, https://www.greatermanchester-ca.gov.uk/downloads/file/742/greater_manchester_digital_strategy_2018-2020
[98] GMCA, 2016, Draft Greater Manchester Spatial Framework, https://www.greatermanchester-ca.gov.uk/downloads/20018/greater_manchester_spatial_framework
[99] Energy Technologies Institute, 2017, The Greater Manchester Spatial Energy Plan: Evidence Base Study, https://www.greatermanchester-

the Open Data Infrastructure Map as part of the suite of MappingGM maps produced by the GMCA also supports in a better understanding the infrastructure landscape.[100] Funding and investment mechanisms particularly to support transport infrastructure investment have been developed by TfGM.[101]

7.3 Summary of findings

7.3.1 Mapping infrastructure

GM has a good understanding of the infrastructure that currently serves the city region including: energy, transport [Figure 14], water, green and blue infrastructure [see Figure 15] and digital.

Figure 14: GM's key transport infrastructure networks[102]

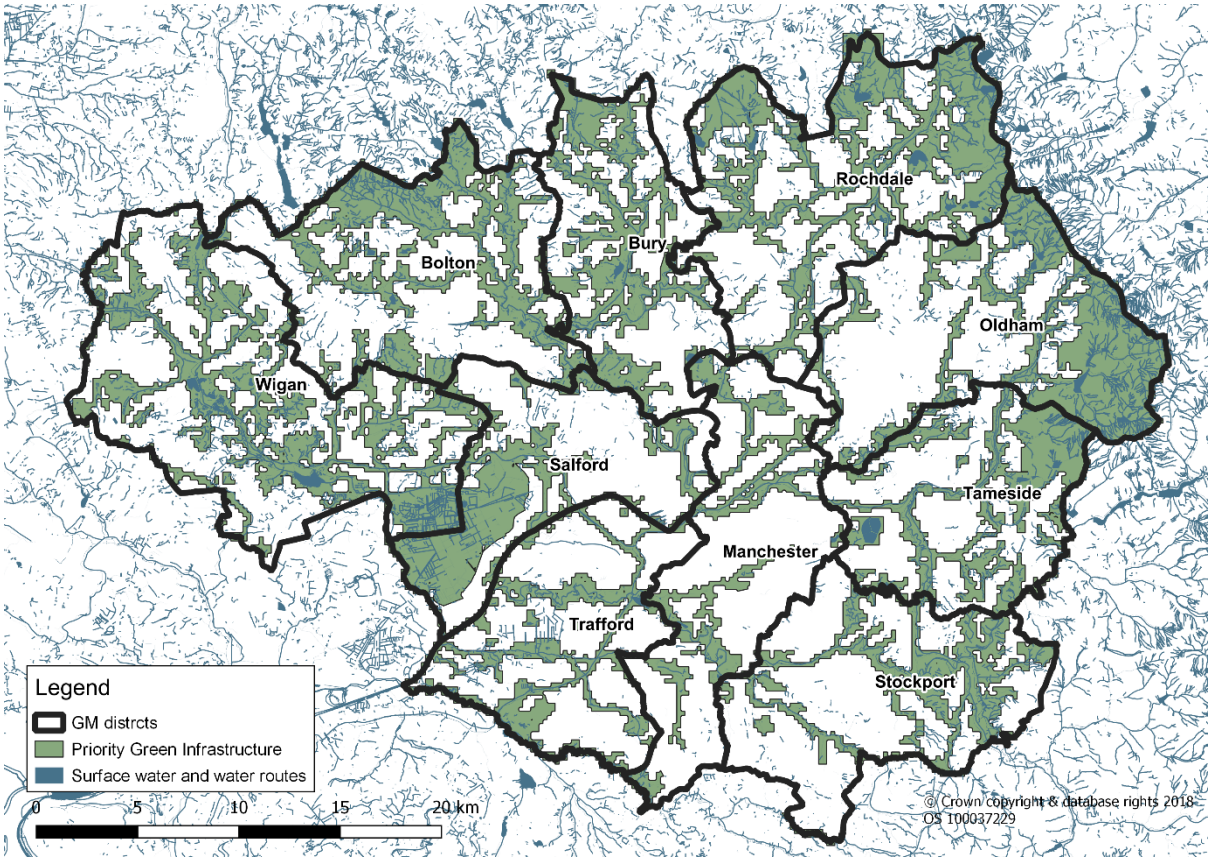
ca.gov.uk/downloads/download/93/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf

[100] MappingGM, https://mappinggm.org.uk

[101] GMCA, 2017, Deep Dives Phase 2 Report – Productivity in Greater Manchester https://www.greatermanchester-ca.gov.uk/info/20175/research/154/deep_dive_research

[102] Ordnance Survey Open Zoomstack; ONS Geography Portal; Transport for Greater Manchester

Figure 15: GM's green infrastructure and surface water/water lines[103]



7.3.2 Economic and social drivers will place increasing demands on GM's transport network which currently remains reliant on the road network

Transport in particular is well evidenced in GM and it is recognised that profound change is already underway in the way people, goods and services move.

The national Industrial Strategy White Paper identified the 'Future of Mobility' as one of its 'Grand Challenges', noting that innovation in engineering and technology is enabling new forms of mobility which will deliver high density use of infrastructure and improved access. The evidence from Greater Manchester, to date, does however suggest that residents still rely on more traditional forms of travel.

The Greater Manchester Transport Strategy 2040 Evidence Base provides evidence on a range of factors including mode of travel from Travel Diary Survey data from TfGM. The evidence shows the continued reliance on the road network in the city region and the use of private transport (cars / vans) as the main mode of travel for Greater Manchester residents. 40% of journeys were made by cars and vans and almost half of these trips were 2km or less.[104] A range of factors explain this modal choice including availability and accessibility of public transport, awareness, cost and perceptions of travel options and choices.

Freight movements also place further pressure on the road network. Data shows that GM is predominantly a net importer of goods. Approximately 50 million tonnes of freight leave GM

[103] ONS Open Geography Portal; Greater Manchester Ecology Unit; Ordnance Survey Open Zoomstack
[104] TfGM Travel Diary Surveys 2013-2015 data included in TfGM, February 2017, Greater Manchester Transport Strategy 2040 https://www.tfgm.com/2040

and 58 million tonnes arrive into the region per year, and with the logistics sector in GM forecast to grow by more than 20% over the next 20 years (GVA is estimated to rise from £3.0bn in 2018 to £3.7bn in 2038) and with increasing development and adoption of new technologies, pressure on the road network and infrastructure broadly is set to rise further.

Congestion has been analysed within this evidence base and the findings suggest that journey times during the afternoon peak period exhibit a greater delay on certain parts of the road network across Greater Manchester with the M56, the A580 East Lancs Road, and the M67 showing the biggest increase in journey times between the morning and afternoon peak periods. Real-time information on congestion and the wider impact on air quality is not readily available and analysed currently for Greater Manchester.

Public transport use has also risen in Greater Manchester over the last decade. Greater Manchester has benefitted from a number of transport improvements since 2000 with the expansion of the Metrolink system, opening of train stations, resurgence in rail travel and the introduction of free concessionary fares, all of which have improved the attractiveness of public transport. Active travel has also increased, there has been an increase in walking trips entering town centres across Greater Manchester between 2009 and 2015. 19% of trips entering town centres across Greater Manchester during the day are made on foot.[105] Cycling has grown too, however the biggest barrier to cycling in Greater Manchester was deemed to be volume of traffic, and consequently the top priority for improvement was the provision of more cycle lanes, twice as important as the second priority - the provision of segregated cycle lanes, followed by safe storage.[106]

Manchester Airport is the UK's largest regional airport providing connections to over 200 destinations and from 2010 air passenger numbers travelling through Manchester Airport have increased surpassing 2006 figures in 2015, when over 23 million passengers passed through the airport.

The transport network evidently has a pivotal role to play in supporting and driving growth and GM's most recent published population projections by the ONS estimate that there will be an additional 286,100 new residents by 2035[107]. These new residents will contribute to GM's economic performance. In employment terms it is anticipated that 141,200 jobs will be added under baseline and up to 190,000 jobs will be added under an Accelerated Growth Scenario (AGS-2017), predicated on Greater Manchester playing a leading role in a strong Northern Powerhouse [Figure 16].[108]

Figure 16: Greater Manchester Economic and population forecasts 2015-2035 (Source: Greater Manchester Forecasting Model)

	Measure:	GMFM-2017 Net increase/ decrease	AGS-2017 Net increase/decreased

[105] TfGM Highways Forecasting and Analytical Services Key Centres Section. Covers: Altrincham, Ashton, Bolton, Bury, Eccles, Manchester, Oldham, Rochdale, Stockport and Wigan. Data included in TfGM, February 2017, Greater Manchester Transport Strategy 2040 https://www.tfgm.com/2040
[106] TfGM, February 2017, Greater Manchester Transport Strategy, 2040 https://www.tfgm.com/2040
[107] ONS, 2018, 2016-based Sub national population projections
[108] GMCA, 2017, Economic Forecasts for Greater Manchester, https://www.greatermanchester-ca.gov.uk/downloads/file/392/report_-_main_findings_from_the_gmfm-2017_and_ags-2017, forecasts commissioned from Oxford Economics – who update and maintain the Greater Manchester Forecasting Model for Greater Manchester

	Period:	2035 vs level in 2015	2035 vs level in 2015
GM	**GVA**	£23,900 million	£32,400 million
	Productivity	£11,800	£16,000
	Employment	141,200	190,000

The evidence underpinning the Greater Manchester 2040 Transport Strategy reflects on the demands that population and employment growth will have on infrastructure requirements.[109]

With employment levels growing fastest in the Regional Centre, the evidence identified that investment is required to ensure that access to the Regional Centre is maintained to avoid severe road congestion and public transport overcrowding during peak periods that could undermine GM's productivity.

GM will also continue to see employment clusters grow across town centres as well as growth at strategic employment sites such as Manchester Airport, Salford Quays and Trafford Park. Significant investment in high capacity, sustainable transport provision will be crucial to support ongoing growth of these existing key employment areas as well as facilitating growth in new areas across the conurbation – these are being identified through the Greater Manchester Spatial Framework process.

7.3.3 Building a digital infrastructure for a successful modern economy in GM

Within digital, GM has a growing offer. The city region is one of the UK's most significant digital hubs through MediaCityUK, Farr Institute, CityVerve, Jodrell Bank, Hartree Centre (Sci-Tech Daresbury), and associated tech cluster. Yet whilst GM has become a leading digital economy over the past decade, rising demand for fast and reliable connectivity means that today's copper network will not be fit to support tomorrow's digital economy.

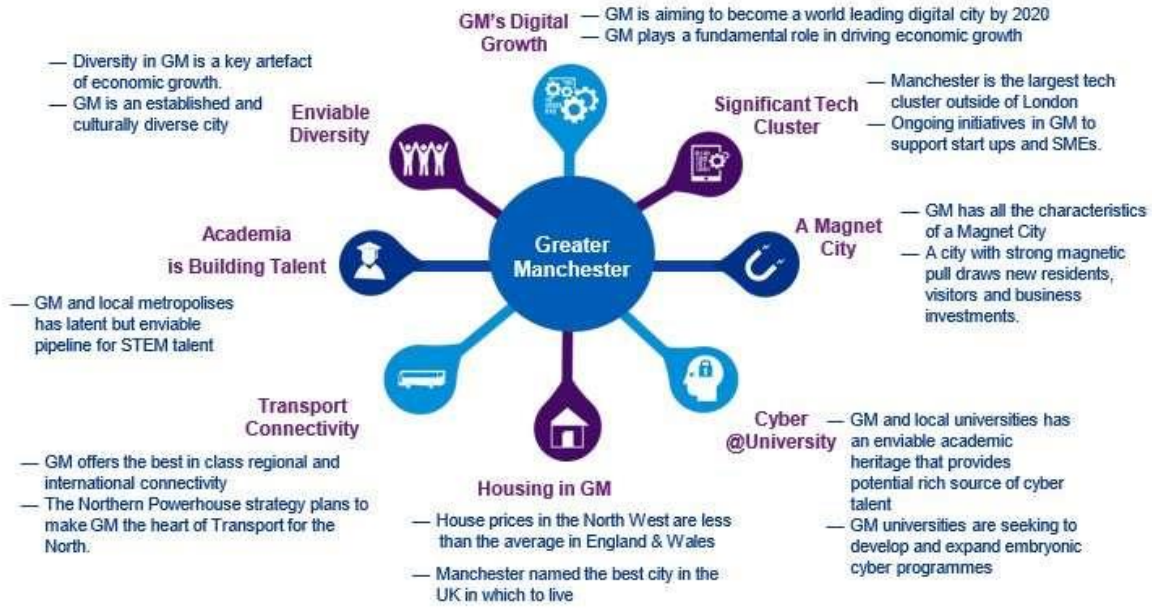
National analysis of the potential economic impact of upgrading to a full fibre infrastructure found a £2.2bn productivity gain for SMEs; £2.3bn in innovation benefits; £1.9bn in flexible working benefits; and £2.3bn from new business start-ups. In addition, full fibre is expected to unlock considerable economic value from wider technological developments: £1.1bn from future healthcare applications; £5bn from smart city infrastructure; and £10bn from the Internet of Things in the manufacturing sector alone. Finally, in a world where fixed and wireless networks will increasingly work together to deliver ubiquitous ultrafast connectivity, full fibre will be necessary to deliver £28bn in 5G benefits[110].

Like the rest of the UK, GM is falling behind international competitors in terms of Full Fibre to the Premises (FTTP) connectivity. Currently FTTP coverage is only 2% in the UK and 4% in GM, yet 60% in countries such as Spain and Portugal[111]. In terms of mobile internet, despite good public WiFi coverage in most public buildings across GM, and on Metrolink and many buses, WiFi provision is patchy in public places and there are still barriers to access (registration requirements and cost) in many parts of GM. Yet GM is well positioned to be a

[109] TfGM, February 2017, Greater Manchester Transport Strategy 2040, https://www.tfgm.com/2040
[110] Regeneris, 2018 The Economic Impact of Full Fibre Infrastructure in 100 UK Towns and Cities, https://www.cityfibre.com/wp-content/uploads/2018/03/The-Economic-Impact-of-Full-Fibre-Infrastructure-in-100-UK-Towns-and-Cities-12.03.18.pdf
[111] GMCA, 2018, The Greater Manchester Digital Strategy 2018-2020, https://www.greatermanchester-ca.gov.uk/downloads/file/742/greater_manchester_digital_strategy_2018-2020

global player on the digital agenda based around a number of local strengths and assets, as outlined in Figure 17.

Figure 17: The GM digital ecosystem (Source: GM Digital Strategy 2018-2020)



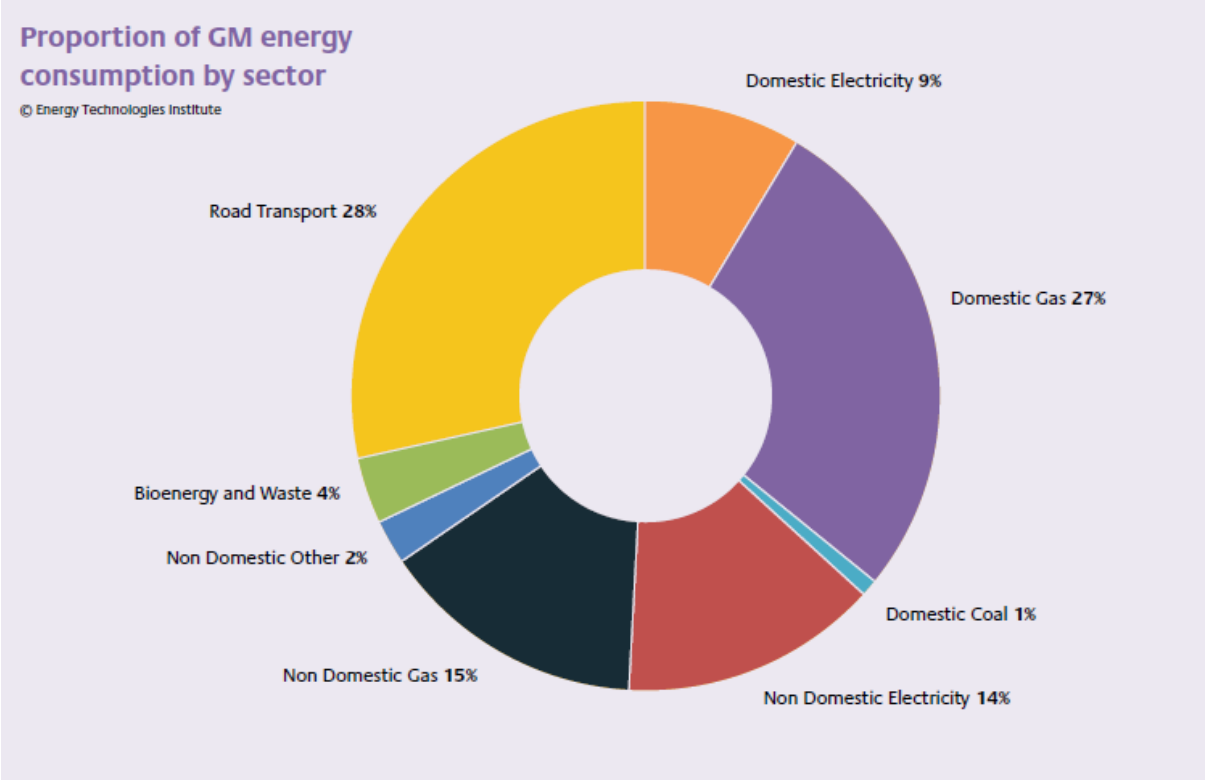
7.3.4 Future energy needs must be delivered in a way that supports GM's decarbonisation ambitions

An understanding of the current energy system in GM and GM's energy use is presented in Energy Technologies Institute evidence base for the soon to be published GM Smart Energy Plan[112]. This shows [Figure 18] that GM uses 51,600 GWh of energy a year, equating to 3% of the total UK energy use. However, energy consumption across the Greater Manchester districts differs significantly with the highest consumer being some 2.5 times more than the lowest.

Homes in GM account for 37% of GM's energy use and the non-domestic sector accounts for 35% of the use. Gas is the primary heating fuel for homes in GM and 95% of postcodes in GM are connected to the gas grid; however, coal and oil heating form a significant part of the energy mix in some GM districts. These areas often have buildings with poor thermal efficiency and elevated levels of fuel poverty

[112] Energy Technologies Institute, 2017, The Greater Manchester Spatial Energy Plan: Evidence Base Study, https://www.greatermanchester-ca.gov.uk/downloads/download/93/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf

Figure 18: Proportion of GM energy consumption by sector (Source: Energy Technologies Institute)



Future population and employment growth will also bring added pressure for the energy network. Future energy need for GM has been modelled by the Energy Technology Institute and it is forecast growth of new homes and non-domestic buildings in GM could increase energy demand by around 3% by 2035[113].

This future need must also be delivered in a different way if GM is to achieve its long term decarbonisation ambitions and this will require a whole systems approach alongside significant changes to the types of energy we use, and how and when they are used. For GM to continue to grow and thrive during this transition future energy sources must be secure, affordable and sustainable. Business-as-usual will not be sufficient to meet the goals that have been set.

Work undertaken by the Tyndall Centre at the University of Manchester and Anthesis (in collaboration with BEIS and Core Cities UK) has provided a number of potential scenarios for GM around meeting its need to reduce carbon emissions and and meet its future energy needs. The research provides a clear demarcation between technical solutions that could be applied locally and those that are reliant on action at a national scale. Solutions include those to increase local renewable energy generation, shifting to low carbon transport and reducing energy demand from domestic and commercial buildings. Further work is being carried out with Anthesis and the Energy Technologies Institute to further refine GM's future

[113] GMCA, Greater Manchester Spatial Energy Plan Evidence Base Study, https://www.greatermanchester-ca.gov.uk/downloads/file/309/greater_manchester_spatial_energy_plan_evidence_base_study_exec_summary_pdf

energy supply and demand which will form the basis of the development of a 5-Year Environment Plan.[114]

7.3.5 Infrastructure investment in the North and Greater Manchester

The National Infrastructure Assessment (NIA) was published in July 2018[115]. The NIA asserted that for the UK to have world leading infrastructure, significant long-term funding is required. It recommended prioritising major upgrades for cities with the most growth potential and capacity constraints, including Greater Manchester. Importantly, given the number of cities identified, it recommended that:

> "*Government should allocate significant long term funding for major capacity upgrades in selected cities, in line with the funding profile set out by the Commission. Cities benefitting from major projects should make commitments on housing delivery and provide at least 25 per cent of funding. Priority cities should be identified by mid-2019, with long term investment commitments agreed by 2026*." NIA, p.80.

Analysis by IPPR North in 2018 reveals the North West (which includes GM) secures £2,439 of funding per capita, compared to £4,155 in London[116]. Total spend on Crossrail alone will be £4.6bn between 2016/17 and 2020/21, exceeding spend on all projects in the North in that period (£4.3bn).

GM has been successful in leveraging funding, mainly for transport funding. Devolution to GM has included greater local flexibility in transport policy with a longer-term budget and earn-back model.

GM currently has a transport capital programme of between £250 and £350 million per year aimed at improving the transport network for the whole of GM. The programme is multi-modal and ranges from programmes of smaller minor works schemes, costing from tens of thousands upwards, to large individual schemes of over £100 million. Schemes currently in delivery from different programmes include:

- Earn Back, such as
    - £350 million Trafford Park Metrolink extension which will connect Trafford Park and the Trafford Centre with the rest of GM
    - £295 million A6 to Manchester Airport Relief Road Scheme, which will connect from the A6 near Hazel Grove (south east Stockport) to Manchester Airport and hence link road to M56
- Local Growth Deal, such as
    - £106 million across a number of schemes in Stockport town centre including access improvements and a new Stockport interchange.
    - New bus interchange in Wigan, as part the town centre regeneration

[114] GMCA, 2018, Greater Manchester Spring Board to a City Region, https://www.greatermanchester-ca.gov.uk/downloads/file/776/springboard_to_a_green_city_region
[115] National Infrastructure Assessment 2018, https://www.nic.org.uk/publications/national-infrastructure-assessment-2018/
[116] IPPR, 2018, Future Transport In the North Briefing, https://www.ippr.org/research/publications/future-transport-investment-in-the-north-briefing

    - Road improvements to the networks in the Regional Centre, Rochdale and Wigan
    - Minor works improvements to traffic signals across GM to increase the efficiency of operation and reduce congestion
- Transforming Cities Fund, such as
    - £160 million to the Mayor's Challenge Fund for cycling and walking for improvements across GM. These are specifically aimed at providing alternatives to car use and so have direct carbon benefits reduced reductions in vehicles emissions, as well as health benefits through increased physical activity. £46 million across 21 projects has already been approved by GMCA.
    - The purchase of 27 additional trams with associated infrastructure to be deployed across the network to address crowding issues, costing £100 million.

The current funding programmes continue through to March 2021, and then stop, as government funding is only committed within the current Spending Review Period.

In March 2018 Greater Manchester secured the largest UK allocation of £23.8m following an intensive bidding process from the Local Full Fibre Networks Fund (LFFN) from DCMS. It is expected that this programme will lead to GM increasing Full Fibre coverage from 2% now to 25% within three years. £2.5m from this programme is already being invested in Tameside. This means GM has the opportunity to take the lead in the UK in full fibre coverage.

The Programme works by drawing capital contributions from local areas based on revenues on connectivity over the next twenty years (that would be spent anyway) to create a £40m programme which aims to deliver a core public sector network across GM at over 1300 public sites. It is expected to lead to wider market investment in full fibre of up to £250m connecting over 154,000 homes and businesses.

Greater Manchester is also seeking to accelerate investment in full fibre across the market by reducing cost barriers to providers. The Greater Manchester Full Fibre Prospectus will set out how the public sector will support full fibre investment through standardizing wayleaves, applying consistent regulation and a dig once approach. The Prospectus will be launched shortly.

Figure 19: Impact of Local Full Fibre Networks[117]

	Current Full Fibre Coverage (07/18)	Potential FTTP coverage from arising from programme (assuming equal number of sites)	Estimated addition GVA from 25% Fibre Coverage over 15 years
Bolton	0.4%	25%	£168,000,000
Bury	0.09%	25%	£116,750,000
Oldham	0.01%	25%	£122,750,000
Manchester	5.68%	25%	£594.750,000
Rochdale	0.15%	25%	£116,000,000
Salford	7.89%	25%	£218,250,000
Stockport	0.16%	25%	£219,750,000
Tameside	0.15%	25%	£119,250,000
Trafford	1.83%	25%	£277,000,000
Wigan	0.37%	25%	£181,000,000

7.4 Gaps, issues and lines of enquiry

As highlighted, two strategically important strands of work are in progress. Work is underway to develop a GM Infrastructure Strategy setting out the strategic direction for the short, medium and long term across six areas: energy, transport, potable (drinking) water, digital, flooding surface and wastewater management, green and blue infrastructure. This will help to bring together a broader understanding of 'all infrastructure' addressing gaps particularly around our understanding of the issues within potable (drinking) water, flooding surface and wastewater management and green and blue infrastructure. The first stages of this are an Infrastructure Framework being developed by Arup to assess demand to 2040. The Infrastructure Framework is exploring the following key drivers of change on GM's infrastructure:

- Population and economic growth
- Demographic and social change, including an ageing population, shrinking households and domestic migration
- Environment and climate change, including air quality and water quality, the need to decarbonise and adapt to climate change and the increasing recognition of the value of the environment to the economy and social wellbeing
- Technological change and digitisation, including artificial intelligence and disruptive technologies.

Secondly the Greater Manchester Spatial Framework is being developed and will set out the land for jobs and homes across the city region for the plan period, it will identify the need for new infrastructure such as transport, schools, health centres and utility networks required to achieve this growth. Future research commissions need to reflect on the findings of these pieces of evidence in the context of future requirements.

In addition and given the opportunity presented by the work of the National infrastructure Commission, there is a need to review again how GM can most effectively prioritise and fund

[117] Regeneris, 2018, The Economic Impact of Full Fibre Infrastructure in 100 UK Towns and Cities, https://www.cityfibre.com/wp-content/uploads/2018/03/The-Economic-Impact-of-Full-Fibre-Infrastructure-in-100-UK-Towns-and-Cities-12.03.18.pdf

its infrastructure needs. In 2009, GM established the GM Transport Fund and agreed to commit some £800 million of local funding to a total programme of transport infrastructure costing c. £ 1.5 billion, funded by borrowing to be paid back from a levy on council tax revenues and net revenues from the Metrolink tram network. As noted by the National Infrastructure Assessment, city regions should work with government to develop prioritised transport programmes and explore options for funding, including the role of local funding, as part of overall infrastructure strategies. GM is already well placed in this area. It has developed priorities for investment as part of the evidence base that is driving the Greater Manchester Spatial Framework, and is reviewing how the conurbation can further evolve its capacity and capability to deliver its strategy, including the governance and decision making frameworks, and whether the current appraisal processes are fit for purpose

8. Conclusion

This Evidence Stocktake forms the first stage in the Greater Manchester Independent Prosperity Review, summarising a wide range of evidence that has been developed by analysts within and beyond Greater Manchester. This has included:

- Economic and spatial analysis, including the evolving role of the Regional Centre
- Labour market and skills analysis, including the changing nature of the workforce and inequalities within GM
- Productivity analysis, exploring the determinants of continued slow productivity growth
- Sectoral analysis, highlighting the opportunities/challenges, resources and assets across GM's core sectors
- Infrastructure analysis, including digital and transport

The evidence paints a positive yet complex narrative, outlined below:

Place: The past decade has seen strong growth in Greater Manchester's economy and population, reflecting that GM is increasingly regarded as an attractive place to do business and live. GM is forecast to outperform the UK in terms of both GVA and employment growth to 2020.[118] However the city region's performance is held back by historically low levels of productivity growth, despite its scale and density creating scope for significant growth that exceeds the potential of any other city-based economy outside London. Within GM, economic growth has been uneven with areas such as the Regional Centre, Oxford Road Corridor, Salford Quays and Manchester Airport delivering accelerated growth; meanwhile performance in GM's key town centres has been more mixed. Overall growth is slower in the north and east of the conurbation than in the south and west. As a result, GM's fiscal gap – the difference between its tax revenue and public spending – remains high, with recent reductions attributable to constraints in public spending, rather than increased tax revenues.

People: Greater Manchester's labour market is the largest outside South East England. There are 2.8 million people living in GM and six million people live within an hour's travel of the city region. GM is a diverse city region: it is home to a rapidly-expanding ageing population; it has one of the largest student communities in Europe (over 100,000 studying at our universities); over 200 languages are spoken in GM's extensive, diverse communities; while GM's LGBT community is substantial, growing and thriving.

But while the past decade has seen strong employment growth (especially in highly-skilled roles) and sharp falls in unemployment, levels of worklessness (particularly for those with health conditions, low skills, or aged over 50) remain stubbornly high. Poor health is a major cause of GM's worklessness and low in-work productivity. Rises in income and living standards have stagnated, with a growth in 'atypical' forms of employment which tend to be unstable and low paid. Labour demand is polarising with faster growth in higher skilled jobs, but also more low skilled and elementary roles. And despite some improvements in educational attainment, GM's skills profile remains below the national average.

[118] UK Regional Economic Forecast, 2017, https://www.ey.com/uk/en/issues/business-environment/financial-markets-and-economy/rebalancing---ey-uk-region-and-city-economic-forecast

Ideas: The Greater Manchester and Cheshire East Science and Innovation Audit identified that GM has globally competitive research strengths and emerging industrial opportunities in health innovation and advanced materials. It also has fast growth opportunities in relation to digital, energy, and industrial biotechnology. The Oxford Road Corridor – with two universities, research hospitals and research, incubation and science park facilities – provides a concentration of science and research assets of international significance.

Other significant science assets in and around Greater Manchester include the Salford Royal University Trust (home to the ground-breaking Salford Lung Study), the Christie Hospital, Sci-Tech Daresbury, and Alderley Park. While the evidence shows that GM is developing human capital at scale (GM creates 8% of England's STEM doctorates), the commercialisation of its science base into products, markets and economic growth could be improved. R&D spending is below comparable city regions, and significantly behind the UK Government's ambitious target of 2.4% of GDP, with the main barriers being finance and in-house knowledge to develop and manage innovation.

Business Environment: The evidence highlights that the strength of GM's business base is its diversity, which brings resilience to economic shocks and the opportunity for GM employers to pursue multiple growth opportunities. However, the absence of major employers headquartered in GM is a notable feature. The evidence highlights GM's key strengths in Advanced Manufacturing, Digital and Creative Industries, and Business, Financial and Professional Services; with emergent strengths in health innovation, and 'green' industries and services. However, in common with other city regions, the majority of GM jobs are in 'foundational' sectors such as retail, hospitality, tourism, construction and care where pay and productivity tend to be low. GM has a strong social enterprise sector, delivering products and services while also creating positive social impacts[119]. But the evidence also demonstrates that although business birth rates have improved, scale up performance and business density is worse than comparable city regions, and leadership and management issues persist. Perhaps the area of greatest opportunity reflected in the evidence is GM's export performance, which is lower than might be expected.

Infrastructure: Greater Manchester has developed its 'all infrastructure' asset base significantly over the past two-decades. In transport infrastructure, Metrolink light rail system will soon run to 99 stops, Port Salford provides water links to the rest of the world, and Manchester Airport serves over 200 destinations, more than any other UK airport. Significant further upgrades to infrastructure are in the pipeline, most notably HS2 and Northern Powerhouse Rail. Digital infrastructure and connectivity is an increasing priority. Currently GM's full-fibre broadband coverage is low by international standards, although plans are in place to increase this significantly. GM also has an emerging smart cities infrastructure. The role of its 'Green Infrastructure' and the value of the environment to the economy and social wellbeing in creating liveable cities is increasingly recognised. The natural capital account for Greater Manchester shows that it has environmental assets worth £24bn over the next 60 years which deliver approximately £860m in services each year through benefits such as improved health and air quality. Flood defence schemes have been completed in Salford and Wigan which will protect over 3000 properties.

[119] GMCVO, 2017, Greater Manchester State of the Voluntary, Community and Social Enterprise Sector, https://www.gmcvo.org.uk/system/files/greater_manchester_state_of_the_vcse_sector_2017.pdf

But significant challenges remain. In transport, road congestion is amongst the most severe in the UK, with knock-on impacts to air quality, and the public transport system is not integrated. In energy, the need to decarbonise GM's economy means it needs to look at low carbon energy generation and storage, retrofitting of buildings, and low carbon transport. Historically GM and the wider North West have had lower levels of national government spending particularly on transport infrastructure than London and the South East. Going forward economic and population growth will place significant pressure on all infrastructure, including social infrastructure such as schools and hospitals. Future climate change pressures will also require the city region to adapt to bigger shocks and stresses, such as increased heat, drought and flood risk, which may require new sources of funding to be identified.

Conclusion: GM has a strong evidence base, which provides a solid foundation on which to develop a Local Industrial Strategy and whilst the evidence in this report has been presented against the 'five foundations,' these issues are evidently, all highly interconnected. Common amongst all of the foundations are issues of disparities with national and benchmark averages and unequal spatial distribution of outcomes within the city region, including in healthy life expectancy, business density and in productivity and earning power. Building on this strong evidence base, it is recognised that, in the new local and national contexts there are some areas where additional research would be useful. In summary, the analysis suggests the Prosperity Review Panel consider the following as priorities:

an Audit of Productivity, understanding GM's productivity performance and identifying the main policy levers that could raise productivity;

- a granular analysis of the "long tail" of low-productivity firms within GM and how productivity could be raised in them. This will include a case study of the social care sector;
- a study to understand Greater Manchester's national and international supply chain and trade linkages;
- an exploration of the city region's innovation ecosystems, analysing the interrelationships between public and private innovation in Greater Manchester;
- analysis of education and skills transitions, reviewing the role of the entire education and skills system in Greater Manchester and how individuals pass through key transition points; and
- a review of the Infrastructure needs of Greater Manchester to raise productivity, including the potential for new approaches to unlock additional investment.

Glossary

BAME	Black, Asian and minority ethnic
BEIS	Department for Business, Energy and Industrial Strategy
BP-ICAM	BP International Centre for Advanced Materials
Brexit	The withdrawal of the United Kingdom from the European Union
COPD	Chronic Obstructive Pulmonary Disease
ESA	Employment Support Allowance
EU	European Union
Early Years	The early years foundation stage (EYFS) sets standards for the learning, development and care of your child from birth to 5 years old.
EY	Enrst and Young
FAME business database	Financial Analysis Made Easy – financial information database of 7 million companies in the UK and Republic of Ireland
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GEIC	Graphene Engineering and Innovation Centre
GLD	Good level of development – seen as an indicator of school readiness
GM	Greater Manchester
GMCA	Greater Manchester Combined Authority
GMCVO	Greater Manchester Centre for Voluntary Organisation
GM Districts	The ten local authority districts which make-up Greater Manchester: Bolton, Bury, Manchester, Oldham, Rochdale, Salford, Stockport, Tameside, Trafford, Wigan
GMS	Greater Manchester Strategy
GMSF / GM Spatial Framework	Greater Manchester Spatial Framework
GVA	Gross Value Added
H&SC	Health & Social care
HEI	Higher Education Institution
HMRC	Her Majesty's Revenue and Customs
HQ	Head Quarters
IMD	Index of Multiple Deprivation
IoT	Internet of Things
LEP	Local Enterprise Partnership
LGBT	Lesbian, gay, bisexual, and transgender
LIS	Greater Manchester Local Industrial Strategy
MIDAS	Manchester Investment Development Agency Service
MIER	The Manchester Independent Economic Review (MIER) consisted of a Commission of prominent economists and business leaders, supported by a Policy Advisory Group and Secretariat, with responsibility for commissioning high-quality evidence-based research to inform decision-makers in Manchester. The MIER reports were published in 2009.
MSB	Mid Sized Business
NHS	National Health Service
NIA	National Infrastructure Assessment

NUTS	Nomenclature of Territorial Units for Statistics (NUTS) is a geocode standard by Eurostat for referencing the sub-divisions of the UK and Northern Ireland for statistical purposes
OECD	Organisation for Economic Co-operation and Development
ONS	Office for National Statistics
R&D	Research and Development
Regional Centre	Broadly covers Manchester City Centre, inner Salford and Trafford Wharfside. Technical definition includes the Regional Centre planning policy definition used within the Draft Greater Manchester Spatial Framework published October 2016 and the Manchester City Centre definition developed by Manchester City Council.
SAF Model	Strategic Assessment Framework Model
SIA	Greater Manchester and Cheshire East Science and Innovation Audit
SME	Small & Medium-sized Enterprises
STEM	Science, Technology, Engineering and Mathematics
TfGM	Transport for Greater Manchester
UK	United Kingdom