POLICY BRIEF

Local industrial strategies: building on strengths, addressing weaknesses
Local Industrial Strategies: building on strengths, addressing weaknesses

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ABSTRACT
This policy brief draws on reports on Local Economic Complexity (by Penny Mealy and Diane Coyle) and Supply Chains (by Jacob Miller) prepared for the Greater Manchester Prosperity Review: www.gmprosperityreview.co.uk. Looking at examples provided from the research in Greater Manchester this report offers policy makers:

1. New ways for visualising differences in places’ productive capabilities and their opportunities for economic development
2. An exploration of supply chains and what Manchester businesses value, and what has helped them grow in today’s market
3. A set of policy implications for regional growth

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Foreword

This Policy Brief summarises work undertaken for two studies, conducted by colleagues at the University of Cambridge, which formed part of Greater Manchester’s Independent Prosperity Review. The purpose of the Review was to refresh and draw together the evidence base for one of the country’s first modern local industrial strategies, jointly agreed by the UK Government and the Greater Manchester Combined Authority. It adopted a model, first established for the Manchester Independent Economic Review a decade ago, which entrusted independent experts with the task of developing an objective overview of the performance, potential and challenges of Greater Manchester’s economy as the basis on which future policy choices could be made.

In performing their task, the expert Reviewers emphasised the need to provide an objective assessment of the strengths and weaknesses of all parts of Greater Manchester. They also encouraged the use of new and experimental data sources and methods that could shed new light on the challenges that Greater Manchester’s Local Industrial Strategy needed to face. The research on economic complexity and supply chains, reported on here, delivered for the Review emphatically on both of these fronts. The results have already featured in the final Reviewers’ report and will continue to influence the strategy as it moves from headline agreement and into implementation.

As the authors note, the work that has gone into producing the Review, significant and well-received as it has been, could only ever provide a new baseline for our understanding of changes that continue to unfold. One of the most pleasing aspects of the Review has been the enthusiasm with which academics and other research-providers have taken up the challenge of helping with the development of local industrial strategies that can offer something for everyone. The Combined Authority looks forward to deepening its engagement with centres of expertise as Greater Manchester’s strategy becomes a reality.

Professor Alan Harding  
Chief Economic Adviser, Greater Manchester Combined Authority
Introduction

The UK Government launched a national industrial strategy in late 2017. This flagship economic policy statement included the recognition of the importance of place in the strategic management of the economy. This emphasis on geography – the distinctiveness of different parts of the country, the unequal distribution of prosperity and opportunity – marked an important policy shift in a country that has been highly, and increasingly, centralised for at least a century.

The national strategy is now in the process of being filled out with the development of local industrial strategies, agreed between central government and devolved English city regions and Local Economic Partnerships. The Greater Manchester Combined Authority will be the first to publish its strategy, which will build on a recently completed Prosperity Review. The Bennett Institute contributed to this with two research reports. This policy brief draws together insights from them both.

These reports focus on the supply side of the economy. They raise important questions: firstly, what are places currently good at doing, and, secondly, what might they be good at doing in the future? These are central to an effective industrial strategy, but it can be difficult to assess rigorously a place’s key areas of competitiveness and future opportunities for economic development.

The economic complexity framework is a new network-based empirical methodology to study a place’s current comparative advantage and future growth potential. It provides a new tool for visualising differences in places’ productive capabilities (or ‘know-how’) and industrial structures, and it has also provided new insights into development patterns and the growth potential of countries and regions.¹

A second set of questions concerns the structure of supply chains. Firms aim to create value for customers in many ways, ranging from timely delivery of an item ordered online, to non-defective components for engine manufacturing, to a comfortable stay in a hotel. Any firm’s offer of products and services is reliant on a whole ecosystem of buyers and suppliers, a network which contributes to the productivity of an area through its trading links and resilience.

Although research into both complexity and supply chains is constrained by gaps in the available data, it is possible to identify certain strengths and barriers, and these carry important implications for public policy.

The economic complexity of Greater Manchester

Greater Manchester (GM) has 10 component authorities and these differ considerably in their current degrees of complexity and industrial structures, as described below. The key insights for the purposes of the Local Industrial Strategy concern the future potential of each authority for developing higher value activities by building out from their relative strengths. The Economic Complexity Index (ECI) and Product Complexity Index (PCI) are measures of economic activity that have been shown to provide useful insights into the type of activities that distinguish prosperous from less prosperous places. The ECI provides a ranking that places local authorities with similar industrial profiles close together in the ordering, and local authorities with different industrial profiles far apart. This ECI ranking is particularly interesting from an economic perspective because it is strongly correlated with UK local authorities’ earnings per capita.

Figure 1: Relationship between Local Authorities’ Economic Complexity and average annual earnings

We can get more information about how these local authorities’ industrial profiles differ by looking at the corresponding PCI measure. It provides a particularly useful indicator of what competitive strengths local authorities at either end of the ECI ranking have in common. Almost all the highest PCI industries are skilled professional, financial or information-related sectors that tend to be concentrated in cities and urban areas. The bottom ranked industries largely relate to manufacturing activities that are more likely to be located outside major urban centres.
Applying the technique to GM reveals stark differences between neighbouring GMCA boroughs. Manchester and Salford have the highest ECI, followed by Trafford and Stockport, which indicates they have relatively similar industrial profiles concentrated in higher-skilled service industries. In contrast, Wigan, Rochdale and Tameside have much lower ECI values, suggesting they have quite different areas of competitiveness, more concentrated in manufacturing activities. An effective industrial strategy needs to take account of these differences, as the realistic possibilities for future growth are likely to vary a great deal across these different areas.
The economic complexity measures can also be combined with a further measure known as ‘proximity density’\(^1\) to identify potential future opportunities for economic development. By considering the probability that any two industries will be concentrated in a particular local authority, the proximity density metric captures the likelihood that a new industry could develop there, given its current industrial structure. So for example, if a place is already competitive in industries like accounting, tax consultancy and management consulting, its competitive strengths are likely to be more well-aligned or ‘proximate’ to the development of new industries such as insurance and fund management activities, and less well-aligned to say agro-processing or pulp and paper manufacturing.

The figure below shows the 10 GMCA boroughs. In these plots, green dots represent the local authority’s current industrial strengths, while grey dots are industries in which it is not yet competitive. The horizontal axis shows the distance (calculated as 1 minus proximity density) between a given industry and the local authority’s existing industrial strengths. The vertical axis plots each industry’s complexity (measured by PCI).

The plot for Manchester city for instance (top left of Figure 4), shows a number of green industries in which it is already competitive including advertising, management consulting and computer programming. Industries shaded in purple represent new industrial possibilities that could be advantageous areas of competitiveness in the future. These industries, including market research and public opinion polling, trusts and fund management activities, and motion pictures, video...
and television, are not only well-aligned to Manchester’s current industrial strengths, they also have higher PCI. As discussed earlier, higher PCI industries are concentrated in places with higher average earnings and growth performance.

Owing to its different existing set of capabilities, Stockport (top right plot of Figure 4) has a number of proximate opportunities that have low PCI, such as pre-primary education, landscape services, and residential care activities, but also some with higher PCI such as management consulting, software publishing and head-office activities.

The plots for Wigan and Rochdale shown in the next two panels of Figure 4 both show a distinctly different pattern again. Wigan and Rochdale’s nearest future possibilities have low PCI. For example, Wigan’s closest industrial opportunities include the sale, maintenance and repair of motor vehicles, repairing fabricated metal, machinery and equipment, and wholesale activities. Rochdale’s nearby industrial possibilities include manufacturing structural metal products and furniture, and construction activities. However, Wigan and Rochdale also have competitive strengths in a few industries that are more complex and less typical for their set of industrial capabilities. For example, Wigan has employment concentrated in office administration and business support service activities, while Rochdale has employment concentrated in advertising, software publishing, and wireless telecommunication activities. The presence of these industrial concentrations could represent an opportunity for Wigan and Rochdale to build on these areas as a kernel of activity allowing them potentially to diversify beyond their traditional, low value, manufacturing-oriented industrial base.

Such growth possibilities are sometimes referred to as ‘strategic bets’. Although the probability of development in these areas is lower, their industrial success could stimulate significant future benefits in terms of greater diversification and growth opportunities in the longer term. Of course, given this greater risk of failure, the promotion of these industries needs to be underpinned by careful feasibility analysis and a rigorous assessment of current binding constraints that presently restrict development in these areas.

A similar exercise can be carried out for the other local authorities. Bolton, Bury, Oldham and Tameside also have fairly industrial productive bases, with existing strengths and nearby growth opportunities tending to relate to less complex manufacturing activities. However, each of these local authorities also has a few key strengths in more complex, high-value areas such as management consultancy and telecommunications-related activities. Salford and Trafford have a more diverse portfolio of competitive strengths, with greater ability to leverage existing capabilities in market research, computer programming and financial services into more complex, higher skilled activities relating to data processing, information services, advertising and financial management.

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2 Hausmann et al (2014b)
Figure 4: Identifying new industrial possibilities for the 10 GMCA boroughs
Figure 4 continued
Supply Chains

The complexity analysis sheds light on the structure of production in terms of industrial sectors in a given area. Given that structure, is it possible to assess the strength and resilience of local firms? One way to approach this is to consider supply chain relationships within the area and connecting local firms to trading partners elsewhere in the UK and overseas. In essence, a supply chain consists of links between firms. Modern business relations are highly complex, involving joint ventures, technical agreements, sub-contracts, marketing arrangements and so on. Measuring, tracking and engaging with supply chains is difficult given their complexity, and indeed there is scant data available about them. Many supply chain relationships are treated as proprietary information.

Supply chain relationships have become ever more extended over time, particularly with the opportunities provided by successive communications technologies. As Adam Smith predicted, the growth of the economy has created an increasingly fine-grained division of labour and firm specialisation. Historically, firms like the Ford Motor Company attempted full vertical integration, owning their whole supply chain. While some modern firms are vertically integrated, most focus on maintaining a specific competitive advantage. In his well-known study of competitive advantage, Michael Porter argues that it is a function of either reducing customer costs, so maintaining value through cost leadership strategy, or by charging a price premium for providing a unique product or service through a differentiation strategy.

Businesses are increasingly relying on their suppliers to reduce costs, improve quality, and develop new processes and products faster than their rivals' vendors. To achieve this, businesses need to develop close partnerships with their suppliers and those whom they supply. This creates close-knit networks of firms that can continuously learn, improve, and prosper.

Once a firm has established its competitive advantage and a strategy for maintaining it, one of the most important choices is the “make or buy” decision, much discussed in economics, and at the heart of supply chain management. The distinction between activities and capabilities is critical. Activities relate to market research, research and development, design, physical production processes, the marketing of goods and so on. Capabilities are made up of the appropriate knowledge, experience and skills to perform such activities. Successful companies will tend to focus their activities on areas of their strongest capabilities.

This distinction is one reason many firms have progressively moved away from vertical integration towards specialisation and supplying from other firms. The trend toward specialisation and outsourcing since the 1980s has allowed firms to drive costs down through economies of scale and learning. There are economies of know-how linked to scale and size; essentially the more a firm produces a good, the faster and/or cheaper it becomes for it to
produce. The "experience curve" has allowed firms to focus on their competitive advantage, while benefitting from the competitive advantages of other firms through supplier relations.

Incentive-related issues often arise in supply chains due to asymmetries of information. When companies cannot observe other firms’ actions, they cannot be sure those suppliers are doing their best for the supply network and it is difficult to align interests when one company has information or knowledge that others in the supply chain do not. Incentive systems are hard to design. So for supply chains to operate successfully and enhance a firm’s productivity, a number of criteria need to be in place.

A functional supply chain requires quality, speed and cost-savings. Firms can design their supply chains in numerous ways. Once a firm has made the decision to buy a good or service from outside, its management must decide if it will source from a single supplier or multiple suppliers. There are strategic benefits to both sourcing methods: close relationships can be established with a smaller number of suppliers, foster high quality, reliability, short lead times, and cooperative action while a multiple sourcing strategy allows for healthy competition between the suppliers in order to achieve higher quality and lower price. What’s more, if a company only deals with one supplier they run the risk of losing touch with costs, innovation, and the ability to ensure that suppliers are operating sustainably. Relations with suppliers depend on time, transparency and trust: understanding the time dimension of the supply chain enables everyone in it to know what is going to happen and when confidence is built because of transparency, trust develops between all the firms in the supply chain.

The Greater Manchester context

These are generic issues in relation to supply chains. What is the context in Greater Manchester? Supply chains develop in the context of business ecosystems that are unique to each geographical region or location. Even the individual authorities within GM have highly distinctive industrial networks and comparative advantages. We sought to explore this question through a series of interviews with technology businesses around GM.

One point that stood out in these was the strong identification with the region. This dynamic was important to each of the businesses interviewed. Each has a direct connection to the Greater Manchester community, for instance a founder growing up in the region or having studied at one of the area’s universities.

The interviews reflected a debate in the literature about the importance of specialised clusters versus economic diversity. The distinction may be overdone in any local economy of any size. Both clustering and diversity played out in early Silicon Valley, for example. Successful firms located in their regions strive to develop competitive advantage based on distinctive production
capabilities and productive structures that cannot be purchased or easily imitated as individual firms focus on their own core capabilities and on their network for complementary capabilities.

This twin dynamic is at work in Greater Manchester. The value and importance of talented people being located close to each other was a recurring theme in the interviews. Trafford Park is a few miles from the city centre. As the world's first-planned industrial park, it has historically been diverse. While the city centre was a focused factory on producing textiles, in the early years Trafford Park had an array of businesses including steel, biscuits, oil works and cars. During wartime, it became a key site for producing and maintaining Britain's war machine. Trafford Park went through a deep period of decline until the Trafford Park Urban Development Corporation formed in the late 1980s and, through a mix of advocacy and government funding, turned the site around to a current level of approximately 35,000 employees (Herron 2015). Interest in Trafford Park remains high with its advantage of access to numerous other cross-sector businesses. One of the main reasons for its surge in popularity has been the benefit of the physical proximity to other businesses that Trafford Park offers its occupants.

Summing up the key findings from the interviews:

- Each firm has a strong business and personal connection to Greater Manchester. There is a clear sense that each values being a "Northern" business, partly because of the ethos it conveys, and partly because of the presence in GM of the talent pool essential to compete in high value knowledge markets.

- Interviewees commented that business is changing radically with technology and globalization, yet still relies on human relationships. Each firm remarked that although a great deal of their business could in theory be done from a garage, in practice the importance of business relationships meant that personal contact was important.

- Most firms interviewed do not supply or sell to other Greater Manchester-based companies. There is a sense, from the interviews and also workshop events, that there is not a clear central place for businesses to meet and network. Some commented that the city has geographic and business silos, for example Media City firms not having a reason to interact with firms in the Northern Quarter.

- Talent, cost of business, lack of venture capital, and weaknesses in infrastructure were the constraints consistently mentioned. Every firm interviewed mentioned the lack of start-up funding, in contrast to London.
Policy implications

The advantage of a local industrial strategy is the scope for taking into account the specifics of a given area. This brief, and the underlying reports, demonstrate the importance of a granular approach to understanding the economy of Greater Manchester, and indeed any other area. Even within the city region, there are marked differences in the economic structure of its different parts, with correspondingly different opportunities for future growth.

Similarly, although often ignored in conventional economic analysis of regional or local growth dynamics, supply chains and supply chain management are critical to economic success. Seemingly messy and complicated supply chain connectivity creates spinoffs and innovations which can generate greater prosperity and higher wages. The absence of firm-level data on supply chains is a real constraint on the analysis, and it might be desirable to explore these in greater detail for a few key sectors. By understanding the key components of certain supply chains, Greater Manchester could strengthen its business ecosystem.

There are some clear policy implications:

- There should be a focus on "horizontal" economic policies creating the environment for businesses to thrive in a serendipitous manner. Clustering and "vertical" policies carry greater risk, and there is evidence they can be counter-productive.

- There is a specific barrier to the GM tech sector in the form of an absence of start-up or venture capital, which itself often depends on personal relationships and access to networks. In the UK these are located mainly in London. Given the number of start-ups in GM, this may be a co-ordination failure policy could address.

- Some types of GM businesses could benefit from the creation of opportunities for face-to-face networking; the interviews suggest this might increase the density of the ecosystem within GM.

- Constraints that business cited include access to a skilled pool of talent and infrastructure shortcomings such as heavily trafficked roads and both intra-city and intercity rail links.
The analysis summarized in this policy brief only represents a first take on the economic strengths and future possibilities.

**Further analysis would need to explore:**

- Whether efforts to encourage the development of a new area of activity in any specific location makes sense in terms of that sector's broader growth prospects and demand profile.

- Whether there are binding constraints limiting growth in more complex areas of activity that policy is able to address - such as skill shortages, lack of infrastructure or unfavourable regulatory environments.

- The extent to which the activity is *tradable* and can serve markets beyond the local authority's domestic demand. Tradable industries tend to have a stronger influence on a region's growth and development, because unlike non-traded activities (such as barber shops, grocery stores, retail and other services, which tend to grow in proportion with the size of a local authority's population), tradable industries are subject to competition from other regions or overseas. As a result, tradable industries tend to have higher wage growth, higher productivity and patenting rates.³

³ See for example Porter (2003)
References


