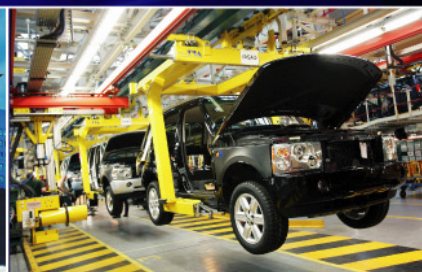




West Midlands  
Regional  
Observatory

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BIRMINGHAM



# **The Functioning Economic Geography of the West Midlands**

## ***Summary Report***

## Document Information

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# Foreword

The West Midlands Regional Observatory (WMRO) was appointed by Advantage West Midlands to carry out three pieces of research (which have been called themes) which form a significant part of the evidence base for the review of the West Midlands Economic Strategy (WMES). The work uses existing data sources to analyse three important aspects of the regional economy. The three themes and the aspects they seek to analyse are: **Theme 1: Regional Economic Context** which looks at projections of the future for the region as a whole. **Theme 2: Drivers of Productivity**, which involves requires a detailed analysis of the region's current economic performance, and **Theme 3: Functioning Economic Geography**.

WMRO has chosen to work with academics from the region's universities on each theme in this project. We have done this in part because of their expertise in the fields under investigation and the credibility that they will add, but also because they can take the analysis further than WMRO alone could do under its remit to remain independent and focused solely on data and intelligence.

The brief for Theme 3 asked us to focus on spatial patterns within the regional economy. In particular we were asked to undertake a structured examination of the economic geography of the region, with data collected to:

- Examine the functioning regional geographical context, existing variations and patterns of the manner in which individuals/ groups operate within the West Midlands (with national and wider links).
- Examine the distinctiveness of the different parts of the region (including urban and rural areas) and the links between them;
- Identify and explain the characteristics and causes of these 'functioning geographic economies' and the challenges and opportunities for them.

We have asked the department of Geography, Earth and Environmental Sciences (GEES) at Birmingham University to lead this work for us.

In addition to commissioning the three themes, WMRO have developed a summary of the outcomes, creating an integrated overview of the important issues raised in the evidence base. We have also reflected comments from regional stakeholder gathered during our consultations on this work. Collectively the output from this work forms the evidence base for the next stage of the WMES review, that of formulating and analysing policy options. It is expected that this next stage will involve the commissioning of additional research possibly to further investigate issues raised during our work.

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# 1. Introduction

The purpose of this study is to describe and explain the functioning economic geography<sup>1</sup> of the West Midlands region. The brief contained six specific aims:

1. Describe and explain the functioning relationships within the economic geography of the region and the attendant strengths and weaknesses.
2. Describe and explain the existence and effects of national and international links upon the regional economy.
3. Describe and explain the distinctiveness of the different parts of the region and the links between them.
4. Identify and explain the reasons for any patterns and their implications.
5. Examine the relevance of the competing views that the region is polycentric, that it is a city region; or that it is a blend of both these concepts (e.g. a polycentric city-region).
6. Identify the challenges that the region's economic geography create for policy formulation.

The approach has been driven by a desire to understand the workings of the regional economy without trying to test the effectiveness of the current regional policy framework. Instead, an attempt has been made to paint a broad-brush picture of the dynamic complexity of the economic geography of the region. The analysis presented can neither be a full working model of the regional economy nor a distillation of encyclopaedic detail.

This report is a summary of the main findings of a much larger report that was published by WMRO in July 2006. The summary, however, develops the report by presenting three additional thematic maps that are not published in the main report. These maps provide a simplified summary of the series of more complex maps that are presented in the main report.

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<sup>1</sup> In this context, economic geography is defined as the analysis of the economic landscape of the West Midlands and the ways in which it is changing.

## 2. Methodology

The report is based on a primary dataset compiled from the Annual Business Inquiry (ABI) survey supplemented by material from the 2001 Census, VAT returns, Labour Force Survey, research undertaken by the Learning and Skills Councils, and Patent Office data. The analysis is also informed by quantitative and qualitative research that has been undertaken by the Service and Enterprise Research Unit, The University of Birmingham, over the last five years. The assembled data are sufficient to identify and analyse the functioning economic geography of the region, although limited data availability at the intra-regional level has restricted some areas of analysis. Comprehensive data on intra-regional connections and trade are particularly lacking, notwithstanding some sector-specific material.

Owing to the short duration of the study, the assembly of data was restricted to available national and regional data sets with only limited use being made of local authority held data. The analysis has been informed by an attempt to highlight and explore the complexity of regional economies, and the relationships that exist between economic sectors. Data for England and the UK have been used to develop comparator statistics.

The complexity of the standard industrial classification (SIC) has meant that the SIC codes had to be grouped to produce a manageable dataset. First, retail and public sector services were removed from consideration as the primary focus of the analysis is on the productive elements of the economy. Second, 54 functionally related categories were developed which, on the basis of analysis, were compressed to 20 working groupings (Table 2.1) The analysis of these groupings informs the main part of this report, but analyses of the more detailed categories are also used.

**Table 2.1: SIC Industrial Grouping deployed as the primary analytical framework**

SIC Code	Industrial Grouping
010-050	Agric, forestry and fishing
100-145	Mining and quarrying
151-160	Food manufacturing and processing
171-183	Textiles and clothing
191-193	Leather and leather products
201-223	Timber, paper, printing and publishing
231-247	Fuel, chemicals & chemical products
251-252	Rubber and plastics
261-268	Glass, ceramics & building materials
271-297	Metal, engineering and machinery
300-335	Electrical, medical and domestic equipment
341-355	Automotive and transport (train, aerospace)
361-366	Furniture, jewellery, sports and toys
371-455	Gas, water, construction and recycling
501-555	Wholesale/retail sales, hotels and restaurants
601-634	Transport/logistics
641-642	Post and telecommunications
651-703	Finance, Insurance, Real Estate (FIRE)
722-725-726-731	R&D, office equip., computing
741-745,748	Business services

The focus of the primary analysis is to explore the intra-regional geography of the West Midlands regional economy. Location Quotients (LQ) are used to identify concentrations of economic activity by sector and place within the West Midlands. The LQ is a well known and used analytical tool for identifying concentrations of economic activity by sector and place. This LQ compares a local economy to a reference economy and in the process attempts to identify specializations in the local economy. The location quotient technique is based upon a calculated ratio between the local economy and that of the reference unit

LQs are generated by calculating the percentage of the national total of a particular group of workers found in a given area, and the percentage of the national total for all workers found there. The former is divided by the latter. A quotient greater than 1.00 means that the area's labour force is more biased towards that particular group while a quotient of 2.0 means that the area has twice as many people as expected and a quotient of 0.5 means only half as many. The analyses compare data for sub-regions (down to the super output area (close to ward) level) within the West Midlands or for the West Midlands as a whole with equivalent data for England. The results, however, demonstrate the localisation of an activity in a place relative to the significance of that activity in England. It is a precise index of the extent to which a place specialises in a particular activity. The degree of localisation associated with LQ score can be classified as follows:

<1	No localisation (under-represented compared England as a whole)
1-<1.5	Weak localisation
1.5-<3.0	Strong localisation
3.0-<6.0	Very strong localisation
6.0+	Extreme localisation

The thematic maps provided in the summary report (Figure 5.1-5.3) have been derived from mapping LQ scores for the 20 working groupings that are over 1.5. It is perhaps worth noting that many of the scores are much greater than this with some being over 40. Some activities are, by definition localised and place specific, for example, agriculture, mining and quarrying. Other activities, especially the more generic or standardized services, are more evenly spread and are extremely localised only in exceptional circumstances. In many cases, and for some business and professional services, localisation may be more related to concentrations of clients rather than the existence of a set of social and cultural drivers that encourage firms to cluster together. Manufacturing patterns are more complex. Some manufacturing activities are relatively dispersed and some are strongly localised. Strongly localised manufacturing is often associated with specialisms in commodities or services. Traditionally, concentrations of some manufacturing processes were related to the requirement for proximity to materials and suppliers to reduce costs or to take advantage of externalities such as knowledge spill-overs<sup>2</sup>. Equally, geographical inertia, sunk costs, commercial 'lock-in' and path dependency<sup>3</sup> may discourage a firm or even group of independent firms from altering the location of their activities. These processes play an important role in the established economic geography of the West Midlands regions. Previous investment

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<sup>2</sup> A knowledge spill-over is an un-priced effect that is restricted to a particular locality or area, which enables firms operating in the locality to have access to sources of knowledge that might enhance innovation and competitiveness.

<sup>3</sup> Path dependency and lock-in are terms used to explain a set of processes or events that once set in motion tend to influence and in some cases determine future courses of action.

decisions provide the backdrop to understanding the location of established economic activity.



### 3. The Economy of the West Midlands

The section provides an overview of some of the key characteristics of the West Midlands region. The West Midlands is an extremely complex economic region that includes the UK's second largest city, Birmingham. It is important not to confuse Birmingham's economy with that of the wider region of which it is part. Birmingham plays a major role in the regional as well as the national economy, but the region also includes important concentrations of activities that are located elsewhere and that are not part of the Birmingham economy. Equally, it is important to remember that companies and people located on the margins of the regions administrative boundaries can have greater affinities with adjacent administrative areas, e.g. Stoke on Trent to Manchester, Burton on Trent to Derby or Stratford on Avon to the M40 corridor.

The West Midlands has a workforce of almost 2.6 million employed across a wide range of activities. Traditionally parts of the region are associated with metal-based manufacturing, and the main sectors of activity include automotive, plastics and rubber, software, food and drinks, electronics and telecommunications and a diverse range of business and professional services. Strong competition has brought considerable turbulence and restructuring to the regional economy, undermining some manufacturing activities and also providing alternative employment in the service activities. In the region as a whole, both employment and gross value added in manufacturing began to fall year on year after 1998.

The region is recognised as having an enterprise deficit. Rates of new firm formation are below the national and the West Midlands regional average in the established industrial areas (e.g. Stoke on Trent and Newcastle under Lyme, the Black Country, Birmingham and Solihull, and Coventry). The analyses undertaken for this study show, however, that this deficit is not region-wide and that new firm formation rates are in some places above national rates. The evidence clearly shows that there is an uneven geography of new firm formation and that this geography is partly related to the geography of skills. This is unsurprising as concentrations of highly skilled people are more likely to have the expertise and access to the resources that are required to establish knowledge-based businesses.

The West Midlands has a major problem with skills deficiencies in the working age population, and these deficiencies are again most pronounced in the Black Country and Birmingham. However, there are also parts of the region with highly skilled and qualified populations. The Daniels and Bryson<sup>4</sup> report on skills in the West Midlands noted that the skills deficit needs tackling in collaboration with employers, and courses need to respond to the changing skill demands. In this context the qualification is less important than the attainment of commercially viable skill sets.

Although the on-going restructuring of production in the region might point to a possible *enterprise deficit* and *skills deficit*, the West Midlands region as a whole **does not have** a parallel *innovation deficit*. Data for the period 1999 to 2004 on regional variations in the UK in the granting of patents, registered trade marks and registered designs suggest that, relative to gross value added, the West Midlands is one of the

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<sup>4</sup> Daniels, P.W. and Bryson, J.R. (2006) *Skills Needs of Business and Professional Services in Objective 2 Areas of the West Midlands*, Learning and Skills Council and European Social Fund

more innovative regions in the country that is only slightly behind the East of England (Cambridge's 'Silicon Fen'), the South East (the M4 corridor), and the South West.

## 4. The E3I Belt

Without question, the West Midlands economy is faced with some problems as well as opportunities that can be exploited to further enhance regional and intra-regional competitiveness. However, the functioning economic geography undertaken in this study suggests that within the region there are places beyond the industrial cores of Stoke on Trent, the Black Country and Birmingham and Coventry that would appear to be the sites of future growth. The industrial cores need to capitalise on their existing strengths by encouraging established firms to develop high-added value products as well as attracting inward investment and new firm formation.

From the analysis it is readily apparent that the spatial patterning of economic activity in the West Midlands region is shifting outwards from Birmingham and the Black country to a belt that encircles the conurbation. This means that the regional economy is much more complex than a simple division between urban-based industrial activity and rural-based business. At a very simple level it is possible to conceptualise this as a tripartite economic geography consisting of urban areas, the belt and rural areas (dominated by rural economies). The development of this belt also reflects inward investment from elsewhere in the UK. This belt lies between 20km and 40 km from the conurbation and includes Stratford on Avon, Warwick, Lichfield, Cannock, Bridgnorth, and Bromsgrove. Within the belt there is an important differentiation of activities from centre to centre. This means that the region has developed an increasingly polycentric structure. This structure is being extended by innovative activity (the Central technology corridor (A38); QinetiQ, Malvern) that is occurring in centres beyond the belt including Newcastle under Lyme, Stafford, Telford, Malvern, and Worcester.

It is important to note that the belt only emerges as a visible form in the economic geography of the West Midlands from the superposition of analyses of different industrial sectors, none of which, individually, have a belt-like spatial form. The belt would thus appear to be the result of the aggregate effects of the separate locational drivers acting independently across several sectors. The belt is not the result of a set of coherent drivers that act across all industrial sectors. The implication is that the belt's differentiation must be supported by the development of differentiated policy mechanisms.

The emergence of the belt reflects a combination of factors including lifestyle, accessibility, quality of environment, as well as the existence and development of a range of innovative manufacturing and business and professional service activities. More research needs to be undertaken to explore the causal factors and feedback effects that operate in the belt. For BPS firms it would appear that the residence of the founders plays a critical role in the determining where a new firm will be established. The belt's environment is more than the physical environment it is also the commercial environment of those places. The belt combines 'economic', 'entrepreneurial', 'environmental' and 'innovation' factors and is more conveniently labelled the **E<sup>3</sup>I belt**. The three 'es' reflect a distinctive economy (economic), high rates of new firm formation (entrepreneurial), quality of the environment and lifestyle (environmental)

and the presence of knowledge-intensive firms as well as innovative manufacturing (innovation). The drivers behind the formation of the belt are complex and varied. In part, a key driver is access to the national transportation network, and this is especially important for the logistics sector and for some manufacturing activities. Other drivers are related to the attraction of places in the belt as high quality residential environments. Quality of life factors attract commuters working in the service sector to the belt who may eventually establish a firm in the locality.

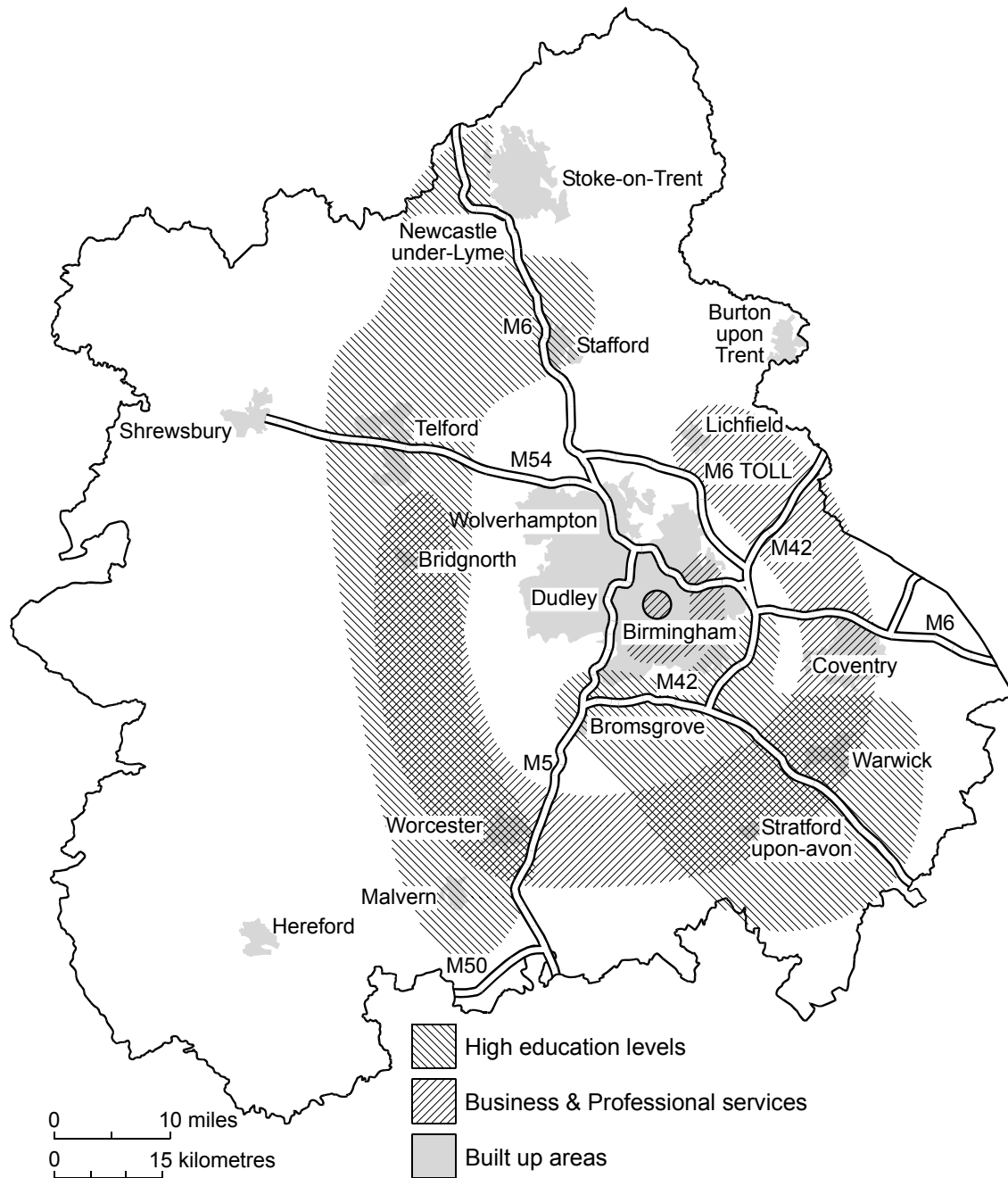
## 5. The Components of the E<sup>3</sup>I Belt

The belt has been identified by a layering methodology that has involved the analysis of six components. Superimposed upon each other these components have led to the identification of areas within the West Midlands that perhaps have the potential for further growth. The six components that define the **E<sup>3</sup>I belt** are:

- Over representation of innovative manufacturing
- High rates of new firm formation
- High skill and education levels
- Over representation of business and professional services; and
- Logistics
- Over representation of ‘traditional’ metal manufacturing

Each of these components is explored in turn in the next six subsections of this part of this report. These components are found in different combinations in different parts of the belt, endowing the different parts of the belt with distinctive growth potentials. A schematic representation of the spatial characteristics of these components is outlined in Figures 5.1, 5.2 and 5.3. The overlaying and layering of the components suggests different processes might be driving change in different parts of the **E<sup>3</sup>I belt**. The detailed analysis and maps that provide the evidence-base for this overlaying and layering within the belt are found in the main report. This raises a number of significant questions. Is the differentiation of processes between one part and another of the **E<sup>3</sup>I belt** a reflection of polycentricity? How does the existing policy framework support the development and activities of the belt? How can a policy framework be developed effectively to support these place-based growth potentials?

**Figure 5.1 Details of the E<sup>3</sup>I Belt**



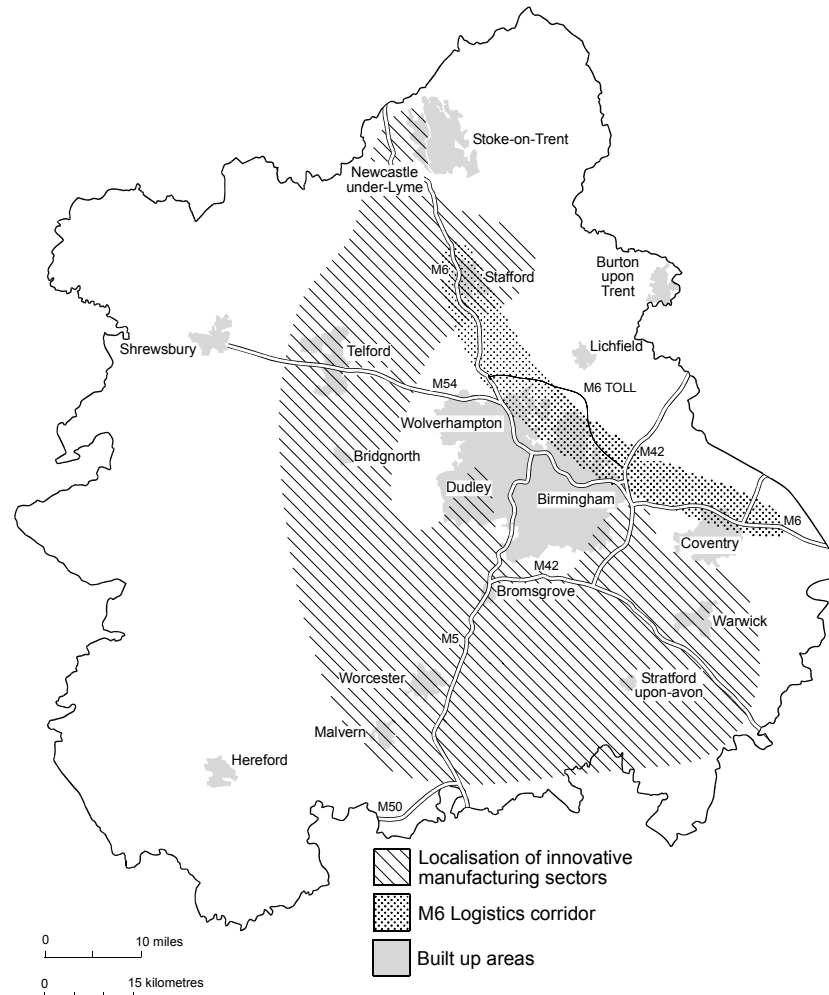
## 5.1 Over representation of Innovative Manufacturing

Manufacturing in the West Midlands has experienced significant restructuring as firms respond to competition from low-cost locations. Some manufacturing firms are responding to these competitive pressures by developing high-added value products. The Report argues on the basis of past research<sup>5</sup> that the sectors that can be used as indicators of the activities most likely to underpin and guide the future of West

<sup>5</sup> See for example the classic study on the Birmingham conurbation: West Midland Group (1948) *Conurbation: A Planning Survey of Birmingham and the Black Country*, London

Midlands metal manufacturing are; (1) R&D activity, (2) Miscellaneous Manufacturing not elsewhere classified (n.e.c) and (3) Manufacture of Office Machinery and Computers. These sectors are important as they are likely to contain either emergent industries (R&D and Miscellaneous Manufacturing) and/or have high multipliers (Office Machinery and Computers).

**Figure 5.2 Innovative Manufacture and Logistics**



R&D activity is currently localised in Solihull, Warwick, Lichfield and Malvern. Miscellaneous manufacturing is more tied to the Black Country, and is localised in Dudley as well as Bridgnorth, Bromsgrove, and Malvern. The Manufacture of Office Machinery and Computers has equally distinctive localisations but in Newcastle under Lyme, Stafford, Telford and Wychavon. These localities describe an arc running from the northern districts of Staffordshire, to the west and south of the Black Country and Birmingham, to Solihull and Lichfield (Figure 5.2). This geography of innovation is facilitated by the motorway network, specifically the M50, M5 and the M40. This is both a threat and an opportunity for the region: a threat as the innovation can support activities located adjacent to the region or is perhaps being driven by adjacent regions and is spilling over into the West Midlands, and an opportunity as the motorway network in this area provides access to key markets and centres of corporate control in London and the Southeast.

## 5.2 High Rates of New Firm Formation

High rates of new firm formation again occur in sections of the **E<sup>3</sup>I belt**. In these localities rates of new firm registration per 10,000 population in 2004 ranged from 40 to 60. As shown in Figure 5.3, the localities with these high rates form an arc to the west, south and east of the Black Country/Birmingham/Coventry conurbation.

## 5.3 High Skill and Education Levels

Location Quotients reveal a micro-geography of skills across the region which supports the LSC findings regarding the under-representation of higher level skills sets across the region<sup>6</sup>. The analysis shows, however, that there are important areas of concentration, especially in Warwick and Bromsgrove, with the latter being an important commuter location for Birmingham. There are weaker though still important localisations of people with NVQ3+ and NVQ4+ qualifications in all but the northern section of the **E<sup>3</sup>I belt** and extending to Stafford and Newcastle under Lyme (Figure 5.1).

## 5.4 Business and Professional Services

Business and professional services (BPS) are a major and dynamic component of the West Midlands economy. BPS plays an important role in enhancing the competitiveness of their client companies. This is an important point as it highlights the interdependencies that exist between manufacturing and service activities. It also suggests that BPS policy development should be targeted at BPS firms as well as client companies. The emergence of service offshoring is a serious threat to the future growth of business and professional services in the region.

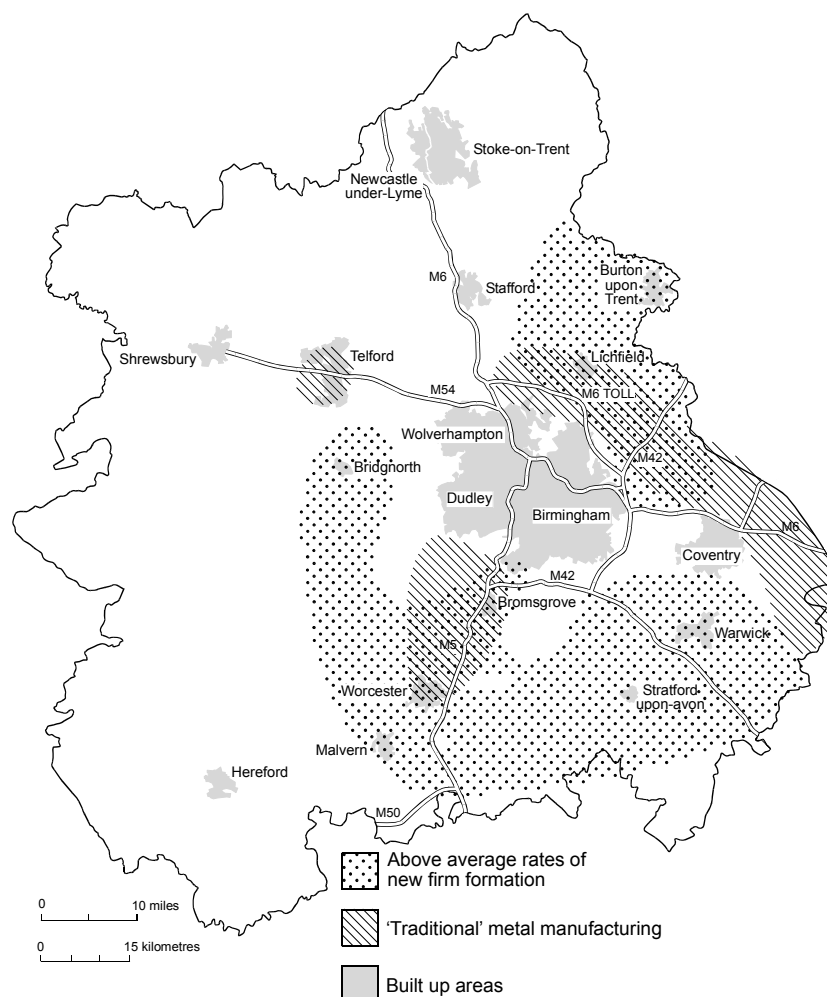
There is a high density concentration of professional services in Birmingham city centre that constitutes a first-level or primary cluster within the region. First-level is defined as representing a significant concentration of small and medium-sized enterprises and large firms. There is, in addition, a BPS component of the **E<sup>3</sup>I belt** surrounding the Birmingham and Black Country conurbation, and developing to the south east of the region (Figure 5.1). This pattern of activity reflects the continued development of BPS activity beyond the confines of the conurbation. The belt is, in part, integrated into the economy of Birmingham, but also supports the emerging economy of the belt and clients located beyond the region. Recent research<sup>7</sup> points to the importance of lifestyle factors (quality of residential environment; perceived safety of working/residential environment) encouraging BPS firm location in the **E<sup>3</sup>I belt**, and the attraction problems that Stoke on Trent, Telford and Coventry have in this context.

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<sup>6</sup> Learning and Skills Council (2005) *Skills in England 2004, Vol. 4, Regional and Local Evidence*, LSC, DfES and SSDA.

<sup>7</sup> Daniels, P.W. and Bryson, J.R. (2002) *Professional Services in Birmingham and the West Midlands: Strengths, Opportunities and Threats*, A Report Prepared for Birmingham Forward and Advantage West Midlands

**Figure 5.3 Above Average Firm Formation**



## 5.5 Logistics

Logistics is a major and expanding employer in the region, not only because Stoke on Trent, Birmingham and the Black Country, and Coventry are major centres of population in their own right, but because the region is at the hub of the country's motorway and rail system as well as having major international airports, for example freight transport at Coventry International Airport and tourism and business travel at Birmingham International Airport. A distinctive geography has emerged in this industry. It is strung along the M6 corridor running from Newcastle under Lyme through South Staffordshire, the northern sections of the Black Country, and the north eastern section of the **E<sup>3</sup>I belt** (Figure 5.2).

## 5.6 'Traditional' metal manufacturing

The LQ analyses of the metal manufacturing complex of the West Midlands show that firms in the traditional sectors of the Birmingham and Black Country, and Coventry conurbation (for example machine tool manufacture, and the manufacture of motor vehicles and parts) have extended into the southern, eastern and north eastern sections of the **E<sup>3</sup>I belt**. It can be suggested that accessibility and logistics might underpin this shift.

## 6. Conclusions: The Spatial Patterning of Production within the West Midlands

Our research has identified that the West Midlands is developing a polycentric economy which has a distinctive economic geography related to local specialisms. The region is more than just the Conurbation (Birmingham, Black Country and Solihull) and perhaps the correct regional descriptor is a region that contains a major Conurbation, a second conurbation (North Staffordshire) and the City of Coventry each with its own economic linkages and dependant commuters, and other significant though smaller centres of economic activity (for example, Shrewsbury and Telford, Hereford, Rugby, Worcester and Bromsgrove) and adjacent and related areas. The West Midlands is a polycentric region with the largest centre being Birmingham. This presents a challenge for the way in which the Our City Region<sup>8</sup> idea is developing. It is important to note that the area included within the Our City Region has a polycentric economy and that this economic structure needs to be supported by a flexible policy framework. Part of the challenge is to ensure that joined-up policy development occurs that spans intraregional administrative boundaries.

The following are important key findings of our analysis:

- There is a continuous and continuing process of restructuring throughout the West Midlands region and within key industrial sectors.
- There is a new spatial patterning of production developing within the region with a number of important elements:
  - Decline of the Black Country manufacturing sectors
  - The continued contraction of the automotive complex in Coventry and the south east of the region.

### *E<sup>3</sup>I belt*

- The extension or spreading of manufacturing from the conurbation into a surrounding 20km to 40km **E<sup>3</sup>I belt**.
- Development of BPS within Birmingham City Centre as well as in the **E<sup>3</sup>I belt** surrounding the conurbation.
- R&D capacity is concentrated in sections of the **E<sup>3</sup>I belt**, especially in and around Warwick, Stratford, and the Malvern Hills.
- Within the **E<sup>3</sup>I belt** activities are differentiated from centre to centre, generating and enhancing polycentricity.

### *Emergent Industries*

- As in the past, the future competitiveness of the West Midlands will be partly based on sets of new and emergent industries, established industries, and an increasingly complex division of labour. These processes have already led to the rise of business and professional services since the late 1970s. Some of the new and emergent industries

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<sup>8</sup> 'Our City Region' is a proposal for the creation of a City Region that would consist of Birmingham, the Black Country, Solihull, Coventry and Telford.



are obscured by the Standard Industrial Classification and appear as 'Miscellaneous Manufacturing n.e.c'. The growth of this sector in sections of the **E<sup>3</sup>I belt** and the South West quadrant are very clear in the analysis. It is important that further detailed research is undertaken to explore the dynamics of this complex sector and this research should begin to unravel the dynamics of enterprise in this quadrant.

#### *Niche Metal Manufacturing:*

- Not all metal manufacturing is in decline. On-going research being undertaken at the University of Birmingham suggests that niche metal manufacturers are disengaging from the automotive supply chain and entering new markets with high quality and design-rich products, but they are experiencing major skill shortages. These facets of the region's enterprise seedbed should not be confused with declining, low-tech and unprogressive businesses. Because of its growth potential niche manufacturing requires further research.
- What is evident from the spatial patterning is an emergent economic geography of R&D to the southeast and west conurbation, facilitated by the motorway network, specifically the M50, M5 and the M40. This is a major threat as well as opportunity; a threat as the economic benefits may be captured by adjacent regions and an opportunity as it represents economic activities that have high multipliers.

#### *Skills*

- In an increasingly knowledge- or expertise-driven economy, the long-term competitiveness of the region will be undermined by widely recognised skills shortages. These impact on all sectors of the economy. Across all industries there is a shortage of skilled labour that is able to support high-value added niche manufacturing.
- Within BPS key skills shortages have been identified by Daniels and Bryson (2006) especially in relation to soft skills that support the commercial exploitation of technical expertise. The enhancement of the regional skill base is essential for furthering the continued growth of BPS employment. Further research is also required to address the problem of graduate retention in the region.

#### *Business and Professional Services*

- BPS plays an important role in enhancing the competitiveness of their client companies. BPS policy development should be targeted at BPS firms as well as client companies.
- The emergence of service offshoring is a serious threat to the future growth of business and professional services in the region.

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Development Fund



EUROPEAN UNION  
European Social Fund