

CLUSTER STUDY 2: THE UK WEST MIDLANDS

Stewart MacNeill, Alex Burfitt and Gill Bentley
(University of Birmingham)

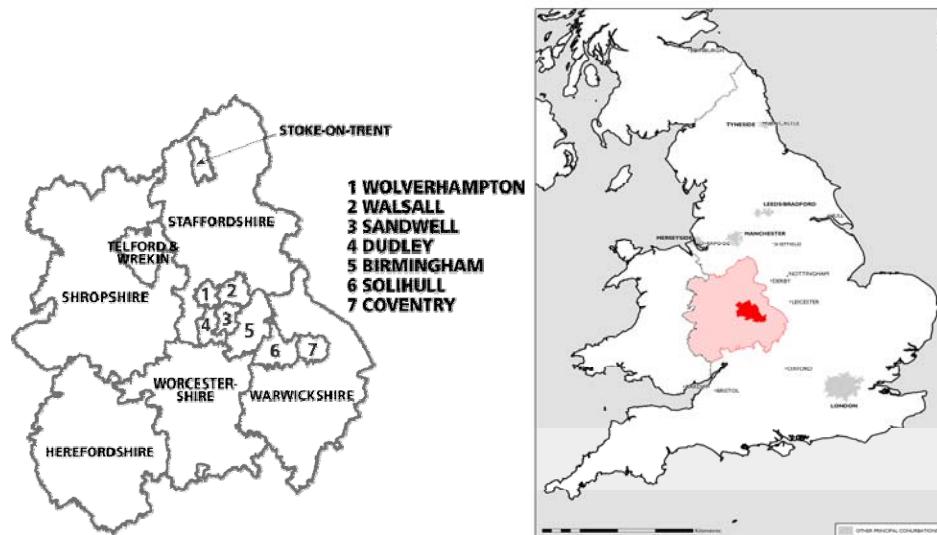
Introduction

This report looks at the automotive industry cluster in the West Midlands region of the UK. It begins with a short profile of the West Midlands and the UK automotive industry followed by an analysis of the way that the main trends and drivers for change as identified in the Mapping Report¹ are reflected in the cluster. Porter's 'diamond model' provides the framework and the report looks at firm strategy, structure and rivalry, related and supporting industries, demand conditions and factor conditions.² The role of government in supporting the industry cluster is also examined. The report concludes with a SWOT analysis, which explores the competitive advantage of the cluster and scenarios for its future development.

The West Midlands

The West Midlands occupies a central position in England covering 13000 km². The region is a mix of urban and rural communities with a total population of 5.3 million. It includes the conurbations of Birmingham, (the largest city with just over 1 million population), Coventry, the 'Black Country' (Wolverhampton, Walsall and Dudley) and North Staffordshire (Stoke on Trent) plus the rural Counties of Shropshire, Staffordshire, Warwickshire, Herefordshire and Worcestershire.

Figure 1 Location of the West Midlands



The region was the birthplace of the industrial revolution and became famous for manufacturing a wide variety of metal, leather, ceramics and glass products. Restructuring of these industries has reduced the number working in these sectors, but

¹ MacNeill, S et al (2004) Trends and Drivers of change in the European automotive industry: mapping report

² For an illustration and more detailed description see: Porter, M. E., *The Competitive Advantage of Nations – With a New Introduction*, 2nd ed., 1998, Macmillan Press: London, p.127

manufacturing still accounts for 25 per cent of the region's GVA and 17.6 per cent of employment. Today some 2.3 million people work in the region in approximately 209,000 business sites – of which 20,725 are engaged in manufacturing. The total regional GVA in 2002 was €8340 millions out of a UK total of €1248957 millions. This represents a figure for GVA per head at 90.4% of the UK average. Regional unemployment is 5.9% - slightly above the national average of 5.1%.

The Automotive Industry in the UK

Based on 2002 figures, from the UK Office of National Statistics, United Kingdom manufacturers of motor vehicles and parts, (NACE 34), account for some 3,000 businesses with a total workforce of 205,130. According to Eurostat figures, this is approximately 11% of the total EU workforce in the sector.

The globalisation and consolidation of the automotive industry is well illustrated by the UK experience. The open nature of the UK economy and the 'Anglo-American' business model, with its emphasis on shareholder value, has encouraged these trends more than in the other major European centres in Germany, France or Italy. Commentators have suggested that the industry should not be described as the automotive industry in the UK rather than the UK automotive industry.

However, there has long been a strong overseas presence. Ford, for example, established a manufacturing site at Dagenham in 1929 with the first production in 1931. An early example of overseas takeover was the 1920 acquisition of Vauxhall by the newly formed US Group, General Motors. (It is interesting to note that the takeover followed from poor sales of existing models and a weak financial condition.) The trend has continued in recent years with the acquisition of the former Rootes Group in Coventry by PSA (Peugeot-Citroën), the takeover of Jaguar, and later of Land Rover, by Ford and the purchase, and subsequent sale, of MG-Rover by BMW – who still retain the Mini factory near Oxford. Even some of the small specialist manufacturers such as Aston Martin (Ford) and Lotus (General Motors) have lost their independent status.

More recently, Government policies, and flexible labour laws, have encouraged a new wave of inward investment and the creation of manufacturing capacity by Toyota, Nissan, Honda and BMW. (The Renault-Nissan plant at Washington in NE England has consistently had the highest productivity of all European car plants.) At the same time Ford has ended manufacture of cars with the Ford badge – and moved production to other parts of Europe. The UK has also become a major engine producer with, for example, investments by Ford (Bridgend in Wales, Dagenham), Toyota (Deeside in NW England) and BMW (Hams Hall nr. Birmingham).

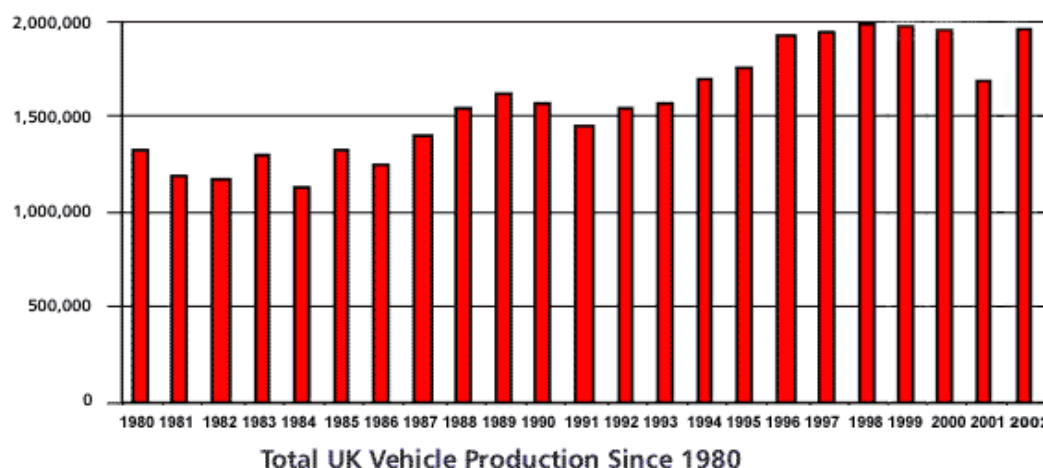
Overseas ownership has undoubtedly made the industry vulnerable to global trends and decisions – not least because the design and purchasing authorities are elsewhere. However, there also are a number of plus points to the industry. For example, overseas ownership has brought major investment, the innovative capacity of UK engineering is still strong and the UK has a major concentration of high value automotive design and engineering businesses³. In terms of production, despite the

³ As highlighted in the Mapping and Scenarios Reports, Europe is particularly strong in this area of the industry.

many changes, the UK has maintained its position as a major vehicle producer – the fourth largest in Europe.

The UK is also the centre of the world Formula 1 industry with almost all the major teams being located in ‘Motor Sport Valley’ (Pinch et al, 1997), an area stretching south and east from the Midlands. The ‘Valley’ has around 2,500 businesses, with a turnover of approximately €7.5 billion, and employs over 40,000 people (including 25,000 engineers)

Figure 2 UK Vehicle Production - since 1980



Source: OICA.net

As can be seen in Table 1 approximately 69% of 2003 car production was exported.

Table 1. UK Vehicle Production

	1995	1996	1997	1998	1999	2000	2001	2002	2003
Cars - home market	787	778	738	729	649	578	598	582	511
Cars - export market	745	908	973	1031	1150	1063	894	1048	1147
Cars - total	1532	1686	1712	1761	1786	1641	1492	1630	1658
Commercial Vehicles - home market	141	126	132	123	110	96	97	77	86
Commercial Vehicles - export market	141	126	132	123	110	96	97	77	86
Commercial Vehicles - total	233	238	224	215	190	172	193	191	189
Grand Total - home market	928	904	870	852	759	675	695	659	597
Grand Total - export market	837	1021	1065	1124	1213	1139	990	1162	1250
Grand Total - production	1765	1924	1936	1976	1976	1813	1685	1821	1846

Source: SMMT World Automotive Statistics 2002

The table also shows how the balance has varied since 1995. However, despite strong export figures, the UK has a continuing negative trade balance on vehicles and parts as illustrated in Table 2. Because of the recent strength of the UK economy, new car registrations have held up over the past few years (see the Mapping Report). In 2003 registrations were 2,943,000 with strong sales of imported models.

Table 2. UK Automotive Trade Balance (£m)

	1995	1996	1997	1998	1999	2000	2001	2002
Cars and Taxis	-3039	-2560	-4742	-5374	-5243	-4517	-8838	-7545
Commercial Vehicles	-966	-460	-882	-1335	-1577	-1952	-1865	-1823
Parts & Accessories	-2357	-2524	-607	-813	-1847	-708	-1380	-2257

Source DTI and HM Customs & Excise

The West Midlands Automotive Cluster

The West Midlands is the main location for the UK industry, accounting for just below 30% of total UK car production. Some of the key financial statistics, for the industry in the UK and the region are shown in Table 3 below. The location quotients indicate the concentration of the industry in the region. (Any value above 1.25 is significant.)

Table 3 West Midlands Turnover and GVA

	United Kingdom (£m)	West Midlands (£m)	UK Auto share of UK All Industries Total	WM Auto share of WM All Industries Total	WM share of UK	WM Location Quotients
Total Turnover						
Vehicles*	28,792	9,863	1.4%	6.1%	34.3%	4.38
Components**	8,624	2,908	0.4%	1.8%	33.7%	4.31
Total Automotive	37,416	12,771	1.8%	7.9%	34.1%	4.36
Total Manufacturing	450,196	48,826			10.8%	1.39
Total All Industries	2,054,787	160,731			7.8%	
Approximate GVA at Basic Prices						
Vehicles	5,277	2,326	0.8%	4.7%	44.1%	5.82
Components	3,052	1,007	0.5%	2.0%	33.0%	4.36
Total Automotive	8,329	3,333	1.3%	6.7%	40.0%	5.29
Total Manufacturing	143,530	16,037			11.2%	1.48
Total All Industries	655,587	49,632			7.6%	

(Source: ONS)

(Notes: (Notes: **Vehicles* includes “manufacture of motor vehicles” (NACE 34.1) and “manufacture of motor vehicle bodies” (NACE 34.2). ***Components* includes “manufacture of parts for motor vehicles” (NACE 34.3))

The region hosts a number of major automotive assemblers - Jaguar, Land Rover and Aston Martin (all within the Ford Premier Auto Group), PSA Peugeot-Citroën and MG-Rover⁴.

⁴ The company was owned by BMW until May 2000 and is now independently owned by the Phoenix Consortium – a consortium of four including two ex-directors of the former company. BMW have retained part of the production facilities through Swindon Pressings where body panels are made.

Table 4. Major West Midlands Automotive Manufacturers

Manufacturer	Location	Employees (March 2004)	Vehicles Produced	No. of vehicles produced (2003)
Peugeot-Citroën, (France)	Coventry	3500	Peugeot 206	207,000
Jaguar (Ford, USA)	Birmingham and Coventry	7400	S-type XJ, XK series	65,425
Land Rover (Ford, USA)	Solihull and Warwickshire	8000	Range Rover, Discovery, Defender	87,164
MG Rover	Longbridge, Birmingham	6250	Rover 75, 45, 25 MG ZR/S/T, MGF	136,065

In addition a new factory has just been completed for production of Aston Martin cars, also part of the Ford Premier Auto Group. Production at the factory is now underway – with the capacity to produce up to 5000 cars per year. The region also hosts the BMW engine plant at Hams Hall just outside Birmingham. This is a new factory that produces gasoline engines for assembly factories in, Germany, South Africa and the US. At present it has 620 employees and, in 2003, it produced 124,500 engines. This will rise to over 200,000 with the launch of the new BMW 1-series.

There are also a number of less known vehicle producers, including LDV, London Taxis International, Dennis-Eagle, JCB and the Morgan Motor Company. (Table 4.)

Table 5: Niche / Specialist Vehicle Manufacture in the West Midlands

Manufacturer	Location	Employees (March 2004)	Vehicles Produced	No. of vehicles produced (2003)
Dennis Eagle	Warwick	600	Refuse vehicles, refuelling tankers	N/a
JCB	Staffordshire	3,000	Construction and agricultural vehicles	N/a
LDV	Birmingham	1,200	Vans, minibuses (plus supplier of pressed panels to Land Rover)	13,000
LTI Carbodies (Manganese Bronze, UK)	Coventry	400	Taxis (black cabs)	3000
Morgan Motor Co	Worcestershire	160	Niche sports cars	550

Also located in the region are producers in each of the main component groups: the driveline; chassis and under-body; engine components; body panels; interior trim; electrical components and design and engineering. The major firms include: GKN (drive shafts, universal joints, chassis manufacture and other products); TRW (research, engine management and injection systems, steering); Bosch (Automotive Lighting); Denso (starters and alternators); Delphi (engine management and injection systems); Valeo (suspension systems); Lear Corporation (seats and interiors); Johnson Controls (seating); Unipart Group (exhaust systems and fuel tanks); Wagon (aluminium bodies, doors/door systems); Mayflower Vehicle Systems (car bodies); NSK (steering systems); Rockwell (body/chassis systems and brakes); Dana (axles);

VDO Instruments (electronics); and SP Tyres, Goodyear and Pirelli (all tyres). Many are multinationals and are in non-UK ownership.

The two companies with the most important presence are GKN and TRW. These are global companies but both have their origins in the region. The former, GKN, has remained in British ownership having evolved from early primary metal and general engineering interests. Today the largest part of the business is in manufacturing driveline components and systems, (including sophisticated torque management devices), for both front and rear wheel drive vehicles. The company has some 43% of the global driveline business and supplies all the major car-makers - with sales of approximately €3 billion in 2003. GKN has its HQ in the region plus manufacturing capacity. However, its purchasing policy reflects both the changing nature of the industry and the decline of UK manufacturing. At the beginning of the 1980s some 80% of purchasing was in the UK but the figure is now 25% - with no significant amount from the West Midlands.

TRW is a US owned business that specializes in safety systems. It took over much of the former Lucas Company – a foundation of the British automotive industry, started by Joseph Lucas in Birmingham, and which started making automotive parts in 1897. Within the region TRW manufactures electric steering systems, braking systems, electronic control units and engine valves. The region also hosts one of TRW’s two European research centres - an important part of the industry’s technology base in the region. However some research capacity has been moved to the German based research centre – nearer to the ‘centre of gravity’ of the industry.

Several other significant suppliers occupy former Lucas sites including Bosch (Germany – automotive lighting), Denso (Japan – starters and alternators) and Delphi (USA – diesel engine fuel systems). Other big suppliers, like Lear, Johnson Controls and Dana are present, as they are in most automotive regions, to supply bulky components to the local car factories. They are not particularly embedded in the West Midlands.

Well-known firms in the second tier include Sarginsons Precision Components, Premier Stampings, Radshape, Zeus, Cosworth and Triplex – all in the ‘traditional’ materials processing for which the region is well known. The size breakdown of the companies classified as automotive suppliers (NACE 34) is shown in Table 5.

Table 6. Number of West Midlands automotive component suppliers, 2002

	Great Britain	West Midlands	WM share of GB	WM Location Quotients
1-10 employees	907	139	15.3%	1.78
11-49 employees	376	117	31.1%	3.62
50-199 employees	245	92	37.6%	4.37
200 or more employees	137	50	36.5%	4.25
Total	1665	398	23.9%	2.78

(Source: NOMIS and ONS)

As can be seen, 87% of firms are small or medium sized enterprises employing less than 250 workers. In addition, there are a large number of material processing

companies that are classified under different NACE codes, for example for casting or forging, but still supply the sector. It is estimated that there is a total of around 2000 firms in the regional supply base.

The region also has a thriving sector for high value services. Businesses offering engineering design and technical development include, Pro-Drive (chassis dynamics, engine and powertrain development, design/styling of niche sports saloons), Zytec (automotive control systems, powertrain management and hybrid-electric vehicles), Mayflower Vehicle Systems (engineering, design, vehicle styling, body manufacture), Ricardo (transmission systems) and Cosworth (specialist castings) plus MIRA, the Motor Industry Research Association, whose major research and testing facilities lie on the region's eastern border. This concentration of companies, and skills, is held in high regard within the region and by the major international players in the industry.

Supporting and related industries

The large number of materials processing and general engineering firms in the region provide a significant base of expertise and the opportunity for the region to gain from synergies. For the most part, the manufacturing base reflects the traditional skills of the region. Even the design and engineering services sector is largely concentrated in areas concerned with the mechanical parts of the vehicle.

However, an increasing proportion of added value is in the electrical and electronic parts of the car. The German VDA (2003) estimates that by 2015 electronic and telemetric components will represent 40% of the cost of a new car. Thus mechanical parts, however sophisticated, represent decreasing added value. West Midlands industry has relatively little involvement in new high value electronic and electrical componentry (MacNeill et al, 2002). However, the region does host Qinetiq, a former Defence Research Establishment, which now works commercially on communications and electronics. The strength of the electronics sector in Germany, USA and Japan gives their car industries a considerable advantage (as discussed in the accompanying case study on the Baden-Württemberg automotive cluster). Many of the new electrical/electronic or telemetric devices are at an early stage of development. The lack of a significant 'home owned' electronics or telemetry industry puts the region, and the UK as a whole, at a disadvantage.

Competition in the industry

The automotive industry faces tough competition with challenges such as:

- Further globalisation
- Consolidation and value chain restructuring
- Cost pressure
- Innovation

(Wells & Nieuwenhuis, 2001)

The West Midlands automotive cluster illustrates these challenges – particularly the trends of globalisation and consolidation⁵ with Peugeot-Citroën and Ford dominating vehicle manufacture. Ford acquired Jaguar, with its plants in Birmingham, Coventry and Liverpool, in 1991 and bought the Land Rover plant near Birmingham, and its Technical Centre in Warwickshire, from BMW, in Spring 2000.

These takeovers have brought a number of benefits, not least new investment. Ford, for example has invested more than €1000 million at Jaguar, and is planning at least €300 million at Land Rover, and Peugeot has invested €225 million in the Coventry plant. Modernisation, and successful models, such as the Peugeot 206 and the Jaguar S-Type, has enabled local factories to compete in the global environment. The region is well placed in the two most profitable and expanding market segments – those for premium vehicles (Jaguar, Rover, Land Rover and Aston Martin) and for mass volume small cars (Peugeot 206 – Europe’s best selling car.)

However, the move to overseas ownership has also made local production vulnerable to global decisions involving plants elsewhere. The region recently lost the Massey Ferguson tractor plant when the US parent company, AGCO, moved production to Beauvais, France. This meant 1000 workers were made redundant and ended sixty years of production. (The flexibility of UK labour laws is seen, by Trades Unions, as making it easier and cheaper for multinational companies to close UK plants.)

Also, to-date Jaguar and Land Rover have continued to make losses and local factories are vulnerable to decisions rationalise capacity and reduce costs. For example, Ford decided to make the Jaguar X-Type and the Land Rover Freelander model in Liverpool. The latter will result in an estimated 1000 job losses in the region by 2006. Also, given that approximately half Jaguar’s sales are in the USA, it would not be surprising to see some future production outside the UK. Rumours persist that one of the company’s plants in the region could close – with up to 1500 job losses.

Peugeot-Citroën’s Coventry factory has been at full capacity to produce the Peugeot 206. However, the model is coming towards the end of its lifecycle and will be replaced by the Peugeot 207 during 2006. It is likely that some production of the 207 will be at the new factory at Trnava in Slovakia (Automotive News 5th April 2004). This may have implications for the West Midlands plant. Both W. Midlands and Slovakia are in the periphery of European car production but Slovakia is in the middle of the expanding C&E European market - and labour costs are much lower.

MG-Rover is the only UK owned volume car producer. The company is an anomaly – since it is essentially, a regional company competing with global rivals. It was part of the Rover Group taken over by BMW in 1994. When BMW sold the business in 2000 there was concern that the Longbridge factory would close with direct job losses and wide impact on the regional economy. However, with public and political backing, BMW sold the site and business to the Phoenix Consortium for just £10 (€15). The

⁵ The post-war industrial boom, and the implementation of Detroit style mass production, had already led to major consolidation. Leyland Motors was formed from the merger of Austin, Morris, Pressed Steel Fischer and Jaguar and British Leyland by the inclusion of Standard Triumph and Rover. The other local assemblers, Hillman and Singer, were bought by the US Chrysler Corporation – later sold to the current owners PSA Peugeot Citroën.

Consortium, led by two former Directors of the company, pledged that MG-Rover would continue as a small, but significant, volume producer.

Since its launch, as an independent company, MG-Rover has experienced difficulties with high production costs and sales below expectation. Although losses are reducing annually they still amounted to €270 million in 2001 and €141 million in 2002. A key factor will be investment in the next generation of models. Some €150m has been spent on developing a new medium car, based on the existing Rover 75 platform, to be launched next year. However, given the high cost of new model development, the company needs alliances and joint ventures. The aim is to develop these in such countries as Poland, China, India and Malaysia, where labour is cheaper and car sales are growing. The first such venture has been with the Indian carmaker Tata Engineering to import a small car, badged as the “City Rover”, for the European market.

Rover is also negotiating in China and Malaysia. However, last year negotiations with China Brilliance, which would have led to joint research, development and production, came to nothing. The current talks are thought to include the Chinese Geely group, which has 3.4 per cent of its home market, and Proton of Malaysia. One proposal is to build the Rover 75 in Poland, (if negotiations to take over a Daewoo plant in Warsaw are successful), where current labour costs are 30% of those in the UK. Cars will be assembled from kits and engines made at Longbridge.

The Rover Trades Unions are concerned about a global strategy of this nature, given the company’s limited resources, and about losing local production, accompanied by job losses, in the company and the region. However, a more positive view is that the company could add production capacity in a new market without the expense of building its own plant and, therefore, would add scale without incurring major cost.

Supplier and related industries

The trend towards a new regime of governance in the automotive industry has seen increasing out-contracting, the development of hierarchy classification of supplier relationships and a shift of responsibilities from final manufacturers towards mega suppliers and system integrators, (Naschold et al., 1999, p. 5), to off load risk and costs. Many of these major suppliers such as TRW, Bosch and Johnson Controls are present within the West Midlands supply base.

As discussed above, many of the major suppliers in the region are under Japanese, North American, German or French ownership. There are nonetheless some UK 1st tier international firms, such as GKN and Wagon, which have their headquarters in the West Midlands.

A particular issue is the changing geography of the supply chain with vehicle makers and major suppliers sourcing on a European or global scale. (Bordenave and Lung, 1996; Lagendijk, 1997). The region’s smaller, (2nd, 3rd, 4th tier), suppliers are particularly vulnerable in the face of this increased competition. Many make simple, single process, components which are cheap to manufacture and can be transported, without significant costs, from low wage areas. In addition, several of the major car producers are urging their first tier suppliers to reduce costs by sourcing parts from low cost economies in C&E Europe and China. However, this is not to say all these

smaller companies will go out of business. Much sourcing continues to be local in order to facilitate just-in-time production routines. Future purchasing patterns, therefore, depend not only on costs but also on convenience and reliable quality.

Strategies and business models

As discussed above, most of the leading companies in the West Midlands' automotive industry are in overseas ownership. This reflects both the open nature of the UK economy, compared to other major European automotive regions, and a business model where shareholder value has major importance. The latter has often resulted in the lack of long-term investment strategies⁶ and, as in the case of Lucas⁷, attempts to boost the company's value through investments in non-automotive sectors. The industry has also had history of poor industrial relations. Hence, many companies lost stock value and became vulnerable to take over. The latest regional casualty of low equity value is the Mayflower Corporation, the owners of Mayflower Vehicle Systems and Transbus⁸. The UK situation contrasts strongly with the non shareholder-value orientation of several of the major firms in the Baden-Württemberg cluster – the other regional case study⁹.

These changes have inevitably impacted on the job market with rationalisations accompanied by lay-offs. Local production is vulnerable where multi-national firms have alternative facilities available – such as in the case of Massey Ferguson above. (One of the reasons why some over-capacity will always be present.) 'Internal markets' operate within these businesses and the future of West Midlands production depends on the ability of local plants to achieve cost, quality and delivery performance that compete with factories in other regions – often with lower wage costs. For example, GKN has recently announced plans to switch 20% of parts manufacture to lower cost economies in India, China and Thailand. This will cause job losses not just in UK but also in other European countries. (Macalister, 2004).

A key issue is the continued development of the successful 'innovation based' industries, for example in design, development and motor sport and the ability of the other supporting industries to meet the demands of the 'lean' manufacturing model. Both depend on factor conditions such as knowledge and human resources as discussed in the next section.

⁶ Investment failed to match that of rival companies. In the 1970s British Leyland's fixed assets per person were the equivalent of €1400 compared with VW's €5600 and Ford's €8400. (Gwynne, 1996)

⁷ Lucas sought to boost shareholder value by investment in aerospace. This proved unsuccessful with aerospace cut backs following the end of the cold war. The company was first merged with Varity (US) and then taken over by TRW (US). In both moves pressure from shareholders was a major influence.

⁸ Europe's third largest bus company, formerly called Alexander-Dennis. Financial difficulties were disguised and discovery led to the company going into receivership. (There has also been controversy over compensation payments to directors.) West Midlands based Mayflower Vehicle Systems undertake design and development for vehicle makers and presswork. The company has just opened a new state of the art factory in Birmingham. Under receivership these assets will be sold off. A number of companies, including ones from the USA and other parts of Europe have expressed interest.

⁹ Schierenbeck, C MacNeill, S and Bentley, G (2004) Trends and Drivers of Change in the Automotive Sector: The Automotive Cluster in the German Federal State of Baden-Württemberg.

Factor conditions

Capital Resources

In the Anglo-American business model equity capital plays a dominant role. Larger businesses raise money through stock offers. Unlike the German model, reported in the other cluster study, banks institutions or individuals rarely have significant holdings. The model is seen as stimulating business efficiency but is disadvantageous if the need to maintain shareholder value leads to short-term strategies. As discussed above, when stocks fall, companies are vulnerable to takeover.

The UK also has the largest Venture Capital sector in Europe. However, compared with Germany relatively little finance goes to technology-based businesses, (Department for Trade and Industry, CIS3, 2001). For smaller businesses, (and almost 90% of regional firms in the sector are SMEs with below 200 employees), bank lending is the most likely option. This is expensive and banks are often conservative in their approach to an industry known for small returns on investment. In the Community Innovation Survey for the UK, (Department for Trade and Industry, CIS3, 2001), the availability of finance was identified as one of the most significant impediments to innovation activity. This was reported as most significant by over 50% of businesses - more than twice the EU average.

Employment

The West Midlands hosts more employment in vehicle and parts production than any other UK region - approximately 32% of the national total for the sector.

Table 7. West Midlands Automotive Employment, 2002

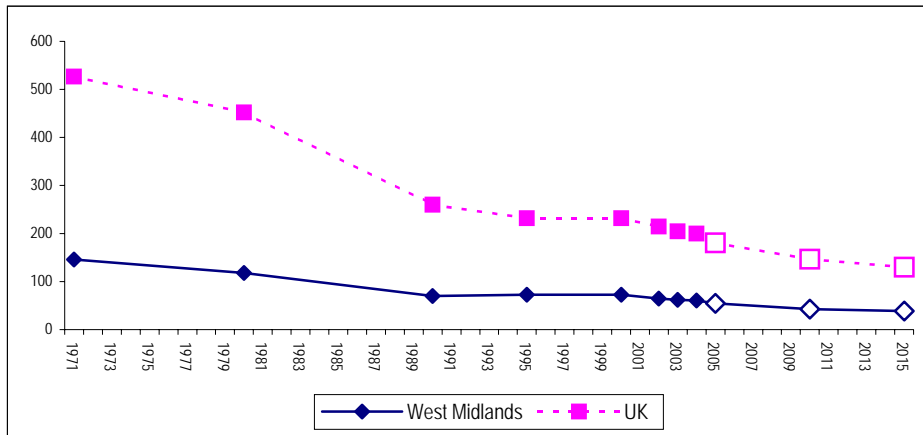
	UK*	West Midlands	UK Auto share of UK All Industries Total	WM Auto share of WM All Industries Total	WM share of UK	WM Location Quotients
Vehicles	112,098	34,765	0.4%	1.5%	31.0%	3.41
Components	93,032	30,473	0.4%	1.3%	32.8%	3.60
Total Automotive	205,130	65,238	0.8%	2.8%	31.8%	3.50
Total Manufacturing	3,414,747	445,794			17.5%	1.44
Total All Industries	25,548,074	2,321,514			9.1%	

Source: NOMIS and ONS

* not including N. Ireland

The West Midlands industry employs over a third of all UK jobs in the sector accounting for almost 1 in 7 manufacturing jobs (14.6%) or 2.8% of total employment. Manufacturing as a whole accounts for 19% of regional employment. As shown in Figure 3, regional employment in the industry has declined from 146,000 in 1971 to the current figure of 65,238 and is forecast to continue to fall. This change has been due to productivity gains and the reduction in the numbers of supply companies resulting from the trend to lean manufacturing.

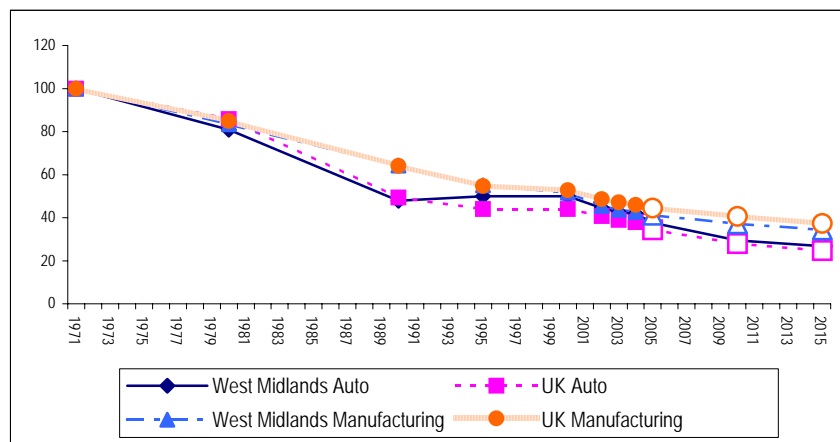
Figure 3. UK and West Midlands Automotive Employment, 1971-20015 (, 000s)



Source: Cambridge Econometrics

Figure 4 demonstrates that the fall has been in line with that in the wider UK automotive and manufacturing industry as a whole and is forecast, by Cambridge Econometrics, to continue at a similar rate.

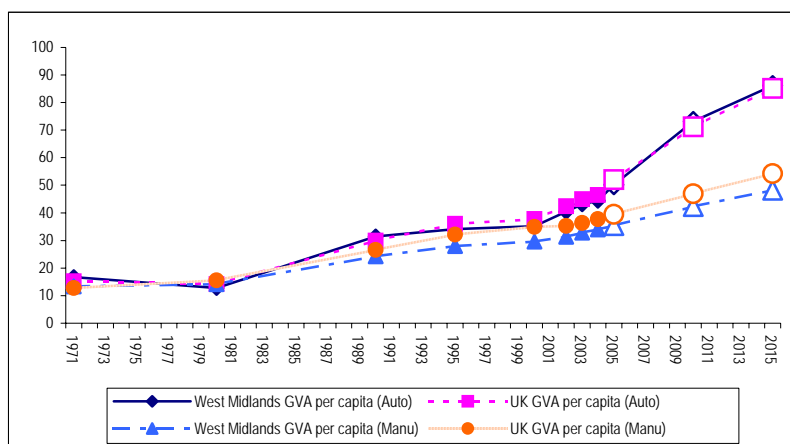
Figure 4. Change in UK and West Midlands Automotive and Manufacturing Employment, 1971-2015 (Indexed: 1971=100)



Source: Cambridge Econometrics

At the same time, as shown in Table 1, UK vehicle production has shown a slight increase thus reflecting the increase in productivity in the industry over this period. Figure 5 shows the increase in GVA per head. It is notable that the forecast shows the auto industry's productivity increasing more rapidly than the rest of UK or West Midlands manufacturing reflecting the intense cost competition in the sector.

Figure 5. UK and West Midlands Automotive and Manufacturing GVA per capita, 1971-2015 (£UK at 1995 prices)



Source: Cambridge Econometrics

However, over the last ten years the rate of employment reduction has differed between vehicle construction and the supply industry.

Table 8. Employment in Vehicle Makers and Suppliers, 1991-2002

	GB 2002	GB 2001	GB 1991	WM 2002	WM 2001	WM 1991
Motor vehicles/ engines	88270	87653	94122	31903	32123	45701
Vehicle parts	93032	90955	90874	30473	30585	23476

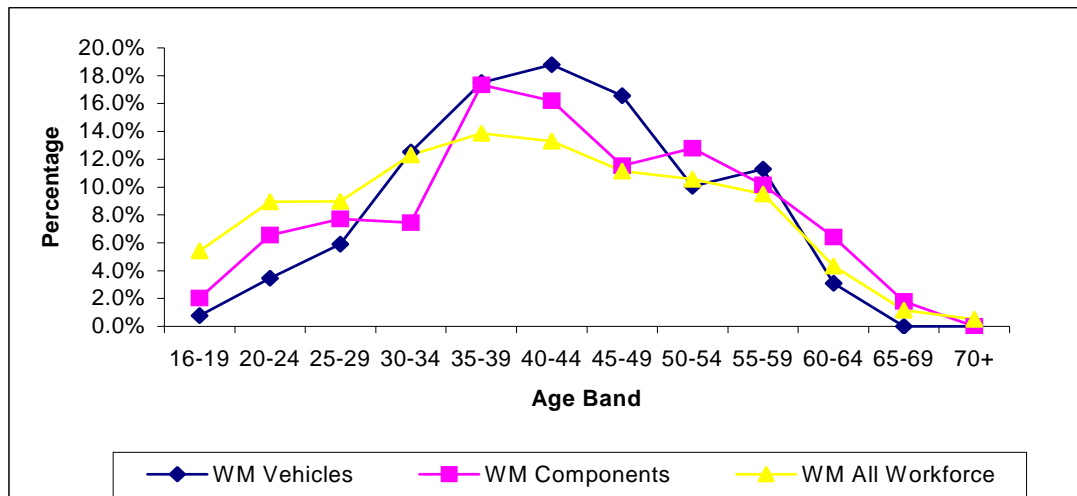
Source NOMIS

This is shown in Table 7 with a decrease in the former and a steady state or slight increase in the latter. The trends are likely to reflect the pattern of increased outsourcing and transfer of manufacturing and technological responsibility to the supply base.

A study of the West Midlands automotive and engineering workforce, (Birmingham and Solihull Learning and Skills Council, 2002), shows that three-quarters of employees are male. The 2003 UK Labour Force Survey shows the majority of workers (55% in car makers and 57% in suppliers) are between the ages of 25-44. This suggests a young, male workforce. However, with 40% over the age of 45, (42% in the suppliers), the industry has an ageing workforce. Figure 6 shows the distribution pattern and illustrates the higher age profile of the industry compared to the West Midlands labour market as a whole.

The industry has a distinctive occupational structure, with over half the jobs in the industry being either in the skilled trades (25%) or operatives (30%). Managerial (12%), professional (10%) and technical (10%) staffs total a third of the workforce. Of the skilled trades, nearly 30% are welders and 6% are vehicle body builders. Some 23% of operatives are assembly line workers and 37% machine operators, with 32% being process operators.

Figure 6. Age profiles WM Vehicle and Components Industries (2003)



Source: UK Labour Force Survey, 2003

Skills, Recruitment and Training

On the Innovation Scoreboard in 2003, the UK is amongst the EU leaders for the number of Science and Engineering graduates and the proportion of people undertaking tertiary education. (European Commission, 2003a, p13). However, whilst there is a good potential supply of qualified labour, the industry is often seen as insecure and, therefore, a low priority as a career choice for young people. A report published by Birmingham and Solihull Learning and Skills Council (2003) highlights this issue and identifies a specific shortage of skilled and semi-skilled (blue collar) workers in the West Midlands. Almost 30% of the (270) firms in the sector surveyed reported skills shortages that they felt their current staff would not be able to meet these. Reasons for shortages were cited as:

- The changing nature of the industry and the need to introduce new production methods, IT systems and working practices such as team working, cell working and flatter management structures.
- A requirement for increased design and development skills as companies seek to add value to their products – and capture outsourced work from customers
- A high turnover in people – particularly amongst skilled and semi-skilled operatives.
- The poor image of the industry – particularly amongst young people.

These shortages are most felt by the smaller firms. Larger firms, especially the car manufacturers, have the prestige and glamour to attract recruits. Non-the-less even these businesses report certain shortages – particularly amongst design, software and electronics engineers, (MacNeill et al, op cit).

The qualifications profile of the workforce is shown in Table 8. The table illustrates a good level of qualification in the industry compared with WM and UK manufacturing though a lower proportion of higher level qualifications compared to the UK labour force as a whole.

Table 9. Qualifications - West Midlands Auto Industry Employees.

	WM Vehicles	WM Components	WM Manuf.	UK Manuf.	WM Total	UK Total
Degree or equivalent	8.2%	12.2%	10.2%	14.3%	15.2%	19.1%
Other Higher education	13.6%	10.6%	8.1%	8.8%	9.6%	9.7%
Further Education	24.8%	22.0%	28.4%	29.4%	24.6%	25.2%
GCSE grades A-C or equiv.	17.6%	16.5%	18.7%	18.8%	23.1%	21.6%
Other qualifications e.g. apprenticeships	20.2%	19.6%	17.2%	14.5%	14.0%	13.2%
No qualification	13.7%	18.3%	16.4%	13.4%	12.5%	10.6%

Source: UK Labour Force Survey, 2003

Wage levels

The UK New Earnings Survey (<http://www.statistics.gov.uk/cci/nscl.asp?id=8242>) shows that in April 2003, the average full-time adult male earnings for the assemblers and routine operatives in the vehicle and metal goods industries was €80 per week and for women was just under €400 per week. The average number of hours worked by men was 41.2 hours per week, with 38.1 hours being the normal basic hours and overtime being 3.1 hours. For women, the figure was 39.9 hours, with 38 hours being the normal basic hours and overtime of 1.9 hours. From the UK Labour Force Survey (2003 figures) the average for all grades in vehicle manufacture was €17.7 per hour (€15.3 in the supply industry).

The average figure for blue-collar grades is thus approximately €30,000 per annum – and the average for all grades in vehicle production €37,700 pa. These are comparable to the figures reported in the Baden-Württemberg case study for average blue-collar salaries of €33,446 pa and €49,411 for white-collar workers.

Labour cost differences, in comparison to Eastern Europe and other low cost areas, are a threat to UK companies and to employment. Wages are €4 per hour in the EU enlargement countries - €18 in West Germany (Dudenhöffer, 2003a). With continuing pressure on the supply industry to reduce costs there is an inevitable trend towards production of parts in these and other lower cost economies.¹⁰

Working Practices

To reduce its fixed costs the industry has moved towards flexible labour market practices such as the use of temporary/agency workers. Employing such staff reduces the full-time workforce and enables firms to cover seasonal and other fluctuations in workflow. A recent study in the region has shown that the practice is more common among 1st tier suppliers than among assemblers or small lower tier suppliers. Some 11% of the assemblers, 16% of 1st tier and 10% of lower tier suppliers use temporary/agency workers (Birmingham and Solihull Skills Council, op cit). However, the UK Labour Force Survey (2003) indicates that the number of workers involved is, at present, relatively small. In the region only 3.3% of those employed in vehicle makers, and 3.2% in suppliers, were in this category. The vast majority of employees, 96%, are in permanent jobs. The low figure could be interpreted as

¹⁰ See the section above on Strategies and Business Models. Also the accompanying Scenarios Report.

reflecting the lower levels of protection for permanent employees in the UK labour market¹¹ when compared to other Member States.

Structure of Industrial Relations

Negotiations on pay and conditions are solely between the trades unions and employers. In the automotive industry, there are two main unions involved, the Transport and General Workers Union (T&G) and Amicus. With over 900,000 members the T&G is the UK's biggest general union.¹² Amicus in turn, is the UK's largest manufacturing, technical & skilled persons' union with over 1.2m members in the private and public sectors.¹³

While the Japanese majors sought single union deals in their UK plants, workforce representation in other UK auto companies is handled mainly by the above two unions. Issues are discussed at national level but the trade unions also represent members in the workplace. Plant level bargaining is the norm – although the Union side always seeks wider agreements. For example, in early 2004, the T&G represented workers in industrial action at Land Rover who were seeking the same wage levels as those at Jaguar - also part of Ford Premier Auto Group.¹⁴

In 2003, according to the UK Labour Force Survey, approximately 60% of employees in West Midlands based vehicle producers were Trades Union members. Within the supply industry the figure is lower at 34% reflecting a lower proportion in smaller companies. In the UK as a whole the figure for vehicle makers is less at 41% - illustrating the lower level of TU representation in the 'green field' car factories in other regions. The figures contrast with just over 24% union membership in the UK workforce as a whole.

Knowledge Resources

A region's knowledge resources are, primarily, dependent on its human resources. In 2001, according to the UK Office of National Statistics, West Midlands had 13,000 people (full time equivalents) working in R&D. This corresponds to 8% of the UK total. Some 4,000 of these were in transport equipment research – approximately 27% of the UK total. These figures illustrate the relatively low overall percentage and the concentration of automotive research – a large proportion in the research centres of Jaguar, Land Rover and TRW.

The EU average, in 2003, for public expenditure on R&D, as a percentage of Gross Domestic Product (GDP), was 0.69% and for business expenditure a further 1.3% making a total of 1.99%¹⁵. The UK was near the average for public sector R&D expenditure, at 0.65% of GDP, and slightly below average for the proportion spent on business sector R&D, at 1.19%, making a total of 1.84%. In comparison in the West

¹¹ The PSA Group employs just over 9% - see accompanying PSA Company Case Study.

¹² <http://www.tgwu.org.uk/homepage.asp?NodeID=88397>

¹³ <http://www.amicustheunion.org/>

¹⁴ http://news.bbc.co.uk/1/hi/england/west_midlands/3480001.stm

¹⁵ In 2003 the USA and Japan spent combined totals of 2.98% and 2.85% of GDP respectively.

Midlands business expenditure on R&D is below average at 1% of GVA¹⁶ against the national figure of 1.4% and public expenditure is also below the UK average at 0.4% compared with 0.7% nationally. This is despite the region hosting three major automotive R&D centres – of Jaguar, Land Rover and TRW. The total R&D expenditure in the region in the area of transport equipment was £252 million out of a UK total of £1,244 million (2002 figures) or 20% of the total.

On the European Innovation Scoreboard (European Commission, 2003b) the region returns a score of 0.45 on the Regional Summary Innovation Index of the combined innovation indicators and is returned as a region with “ an above average GDP per capita, strong educational performance but below average R&D and patent performance”. The average UK score is higher at 0.52.

Universities

UK Government policy has sought to encourage universities to capitalise on their intellectual resource and enter into collaborations with industry. (UK Department for Trade and Industry, 1998) The region has a medium level university research infrastructure. These include Birmingham and Warwick (both in the second division of UK universities outside the elite group of Oxbridge and the two leading London institutes) plus the universities of Aston, Keele, Staffordshire, Central England, Coventry and Wolverhampton. Most, have expertise in some areas relating to the automotive industry – ranging from technology to business management. Highlights include:

- Warwick (University) Manufacturing Group - have a long history of industrial collaboration, in particular with Rover, and are working with Ford Premier Auto Group supported by private and public funding of more than €100m. Cooperation will cover various technologies including advanced materials, telemetry, electronics and hybrid vehicle technologies.
- University of Birmingham - has research on materials for engines and body structures, safety, fuel cells, hydrogen storage and telemetry. Birmingham also manages the EUROMOTOR European network for advanced training in vehicle and manufacturing technologies.
- Coventry University - is known for courses on automotive design. Courses are highly regarded by the industry and involve placements in automotive design houses and other businesses
- University of Central England – has set up its Faculty of Engineering as a limited company to offer courses and consultancy, particularly on process improvement and lean manufacturing.

Other important intellectual resources include RAPRA Technology an independent research organization that carries out polymer research, testing, consultancy and training (part of which covers the automotive sector, particularly in respect of environmental sustainability) and Qinetiq. The latter is a former Defence Research Establishment, now largely privatized, housing more than 2000 scientists - most with PhDs – working on communications and electronics. Qinetiq’s automotive work includes sensors for safety and navigation systems and displays.

¹⁶ The available regional data is for GVA rather than GDP. However, the percentages and proportions will not be very different.

The Motor Industry Research Association (MIRA), situated on the region's eastern boundary, dates back to the foundation of the Institution of Automobile Engineers in 1899 and is another important intellectual resource. MIRA is a leading independent provider of product engineering research testing and certification to the worldwide automotive industry. The company and has world-class facilities including high-speed test tracks.

The SMMT Industry Forum is a department of the national Society of Motor Manufacturers and Traders. It is a national body, but based in the region, and is a private sector initiative that aims to develop and sustain competitiveness in the UK based vehicle and components industry. Its focus is on helping firms to improve Quality, Cost and Delivery and improve their partnerships with customers and suppliers. It seeks to help the large businesses to retain competitiveness, and therefore employment, by assisting the supply chain. Programmes include Process Improvement; Value Stream Mapping; Team Leader Training and Master Class Engineering Consultancy.¹⁷

Demand Conditions

The UK car market has remained buoyant compared to the rest of Western Europe. To some extent this reflects its different nature. For example, there are a much higher proportion of fleet sales – almost 50% of new registrations. This tends to protect the industry from the 'consumer confidence' fluctuations of private purchase. Also cars have traditionally been higher priced than in other Member States¹⁸.

Production in the global market was just over 59 million units in 2002. Western European production accounted for 17.4 millions (29%) of which the UK contribution was over 1.8 million (10% of the W. Europe total). However, whereas Western European production fell by 3.4% between 2001 and 2003, that in the UK has increased by 8%. Home car sales have also been buoyant as shown in Table 1 above (numbers) and Table 8 below (value)

Table 10 Value of UK Automotive sales, 1995-2001 (£,000)

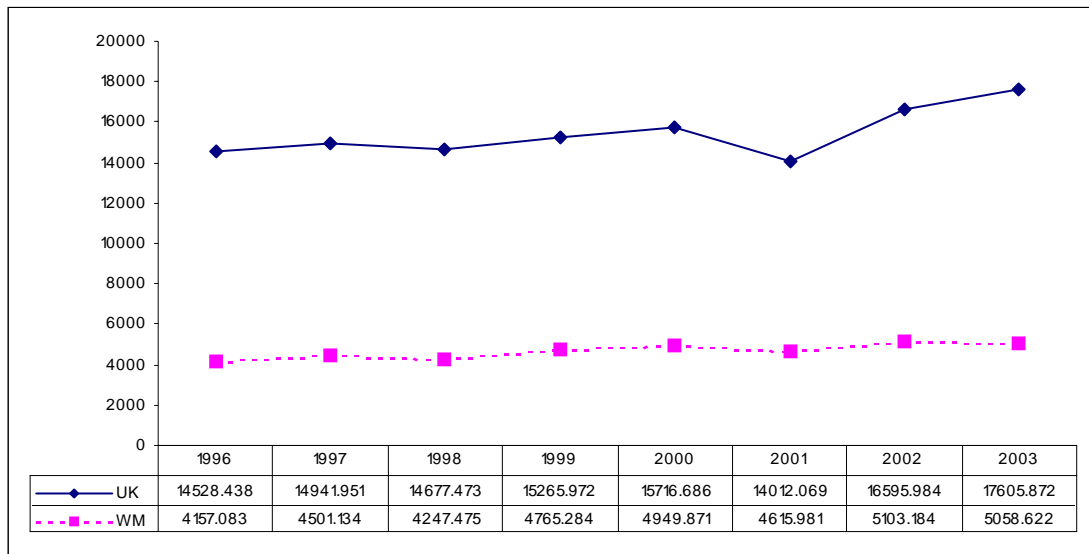
	1995	1996	1997	1998	1999	2000	2001
Vehicle Sales	69177	76920	84394	87035	88644	86743	91197
Maintenance & Repair	8930	8263	8011	8975	11118	11240	11888
Parts Sales	9437	10066	10741	10962	11128	11098	11906
Total	87544	95249	103146	106972	110890	109081	114991

Export demand for UK produced vehicles has also remained strong. Table 1 above shows the increase in numbers of vehicles exported. Figure 7 shows the trend in value of West Midlands and UK produced vehicles since 1996. In 2003 the value of WM road vehicle exports was €7600 million, some 28.7% of the UK total.

¹⁷ Engineers from leading companies give advice and training to personnel of SMEs. The Industry Forum was very astute in getting engineers from such companies as Toyota and Volkswagen to do this.

¹⁸ Various reasons have been put forward. Consumer groups have felt that private buyers have subsidized fleet sales – where there are high discounts. The industry has said that there are additional costs of producing right hand drive vehicles. As discussed in the Mapping Report overall prices, including tax, are about the same throughout Europe.

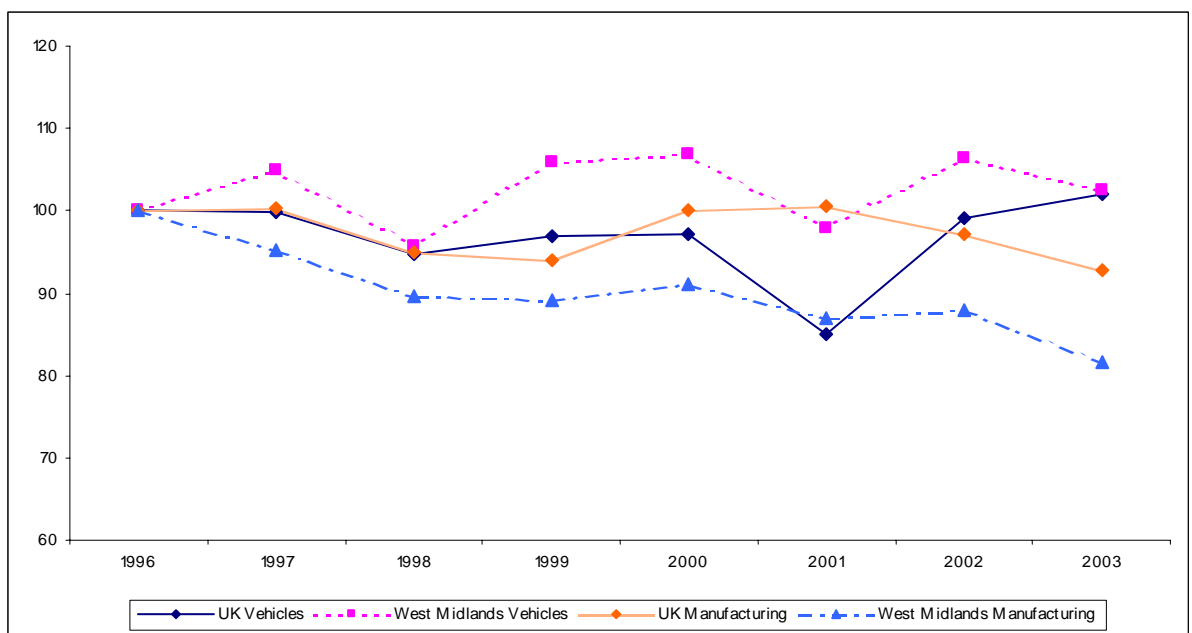
Figure 7. UK and West Midlands Exports of Road Vehicles 1996-2003 (£m) (Nominal values)



Source: HM Customs and Excise Trade Statistics

Figure 8 shows the change in value in real terms illustrating that, despite take-overs and restructuring, WM vehicle exports have been relatively stable compared to the UK as a whole. The graphs also illustrate the good performance of the vehicles sector compared to an overall decline in the value of manufacturing exports.

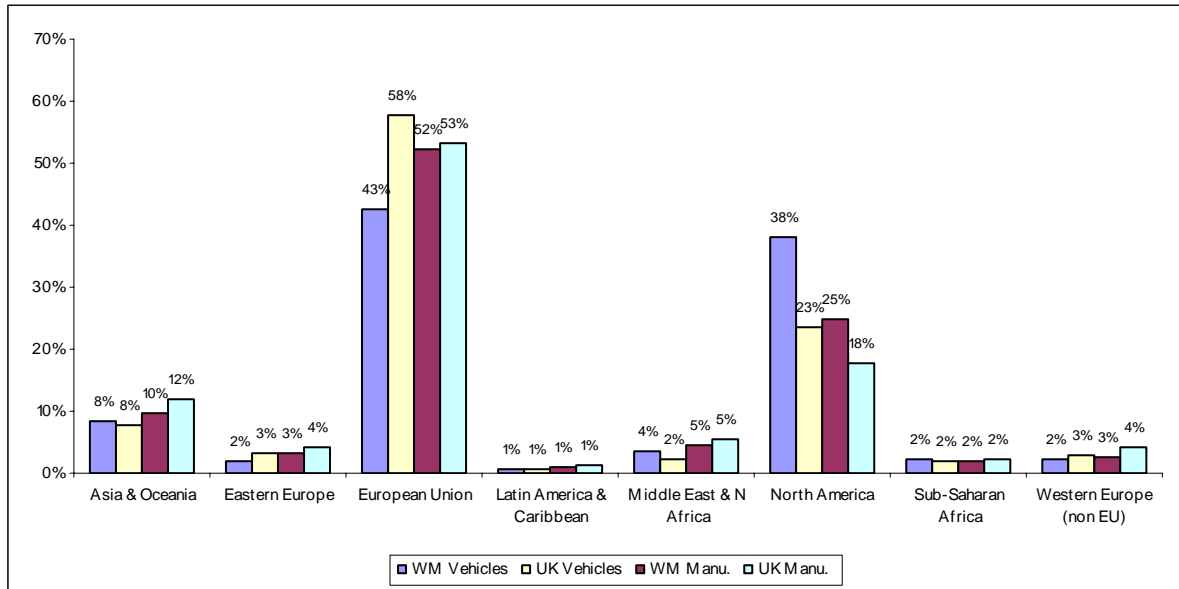
Figure 8. Change in UK and West Midlands Real Terms Value of Road Vehicles Exports, 1996-2003 (Indexed: 1996=100)



Source: HM Customs and Excise Trade Statistics

The share of exports, by global region, shown in Figure 9, illustrates the strong WM sales in the North American market, with Jaguar and Land Rover, compared to a relatively lower proportion of total UK sales in other EU Member States.

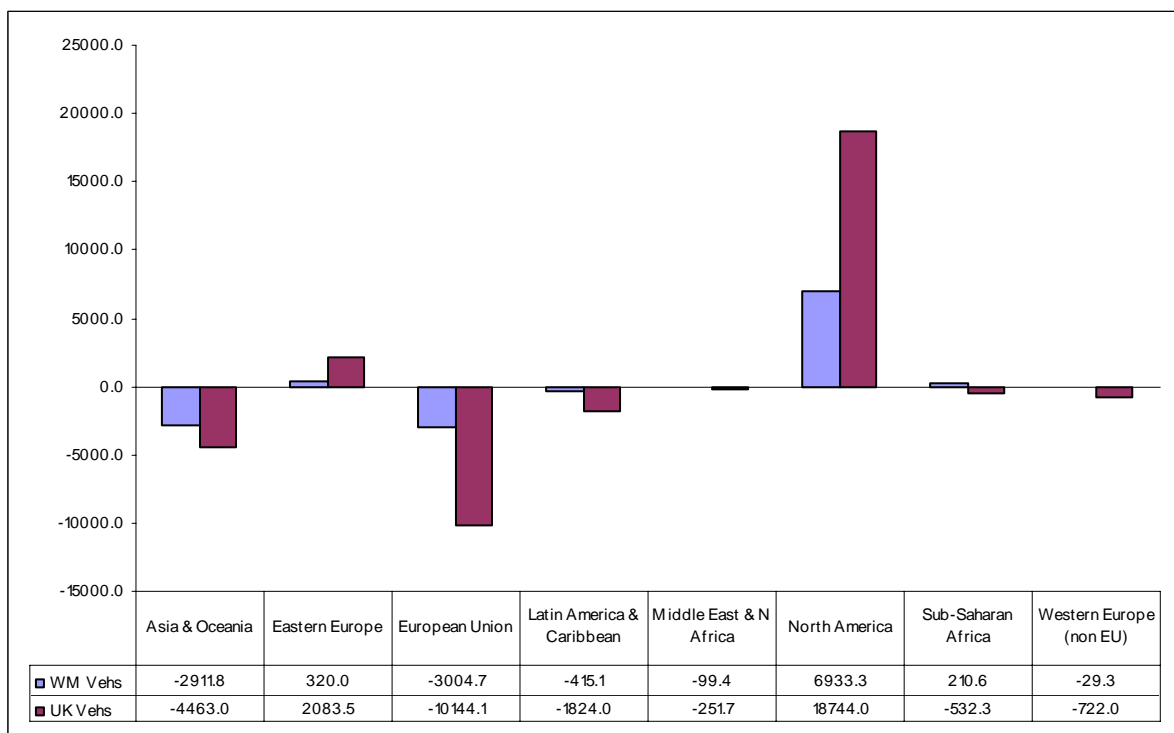
Figure 9. Share of UK and West Midlands Road Vehicles and Manufacturing Exports by Global Region, 2003 (Nominal Values)



Source: HM Customs and Excise Trade Statistics

The change in value of exports, by global region, over the same period, illustrates the increasing importance of the US market in maintaining demand while export value to the rest of Europe, despite the performance of the new Japanese car plants, has fallen. See Fig. 10.

Figure 10. Change in Value of UK and West Midlands Road Vehicles Exports by Global, 1996-2003 (£m) (1996 Prices)



Source: HM Customs and Excise Trade Statistics

Trends in automotive demand

The large fleet market has traditionally meant a high proportion of sales in the medium size car sector. However, in recent years this has changed and this sector has seen the same squeeze in the UK as in other Member States. The growth areas are in the 'Super-mini', four by four and premium vehicle segments. To a large extent the West Midlands region is well placed in all these. (Peugeot 206, Land Rover, Rover, Jaguar). However, through poor image and quality performance, from the 1960s through until the 1980s, the industry lost a considerable amount of good will and the loyalty of many UK consumers. Thus imported, or foreign owned, marques make up a large proportion of sales. Consumer demand in the premium segment has, therefore, increased imports – particularly from Germany and Sweden.

As in the rest of Europe, there is an increasing demand for diesel-powered cars. SMMT expects the market share to rise to 33% by 2005 (SMMT, 2004). German¹⁹ and French manufacturers are likely to further benefit from their strong position within the diesel segment (Dudenhoffer, 2003b, p.2). Some Japanese and American manufacturers have deficits within this market segment, probably rooted in the immature position of this segment in their domestic markets (Jürgens, 2003).

Along with this trend comes the increasing demand for car equipment relating to security, comfort and 'infotainment', as well as the increasing demand for more engine power (Anonymous, 2003a). Many security systems such as driver, passenger and side airbags, the anti blockade system ABS, and increasingly the electronic stability programme ESP, are expected as standard equipment, representing must-have technologies. Many comfort technologies such as central locking, seat heating, air conditioning, navigation systems started as nice-to-have technologies, which then slowly transformed into standard equipment (VDA, 2003b, p.16).

Here the West Midlands region is not so well placed. As discussed above, there is a continued concentration of industries concerned with materials processing. However, an increasing proportion of value added on cars (and commercial vehicles) is found in electrical, electronics and telematics components. Local car-makers are dependent on their parent companies to develop and source these – usually in their 'home regions'. In addition, although major suppliers have a presence, local plants are not at the forefront of new technological developments (MacNeill et al, op cit).

Government

National and regional initiatives both play a role in supporting the industry. Nationally, the British Government sees its role, primarily, as providing a sound macro economic environment for business through fiscal and monetary policies. The

¹⁹ A strategy brief by the consultancy Bain & Company (Matthies & Heideloff, 2001, p. 3) attests a leading competitive position to German brands such as BMW, Mercedes-Benz, Audi and Porsche.

Department of Trade and Industry is responsible for industrial development as well as for science and technology policy. It hosts an Automotive Unit, whose job is to help the industry in the UK to succeed. It seeks to do this by encouraging the spread of best practice in design and manufacture, supporting inward investment and influencing the design of regulations and tax policy so that they reflect the interests of the sector. There is also an Automotive Regional Unit, based in Birmingham, with responsibility for relationships with UK-owned vehicle manufacturers and component suppliers (see www.autoindustry.co.uk).

At national level the main policy support is, therefore, via the regulative environment. However, one specific initiative is the Foresight Vehicle Programme. The Programme, which has been running since 1997, is a collaboration between industry, academia and Government that seeks to identify and demonstrate technologies for sustainable road transport. The philosophy is that future products and technologies must meet social, economic and environmental goals and satisfy the market requirements for mobility, safety, performance, cost and desirability. It does not attempt to guess winning technologies but seeks instead to address forecasts of desirable vehicle capabilities. No comparable programme exists elsewhere in Europe.

Another recent national initiative was the creation of the 'Automotive Innovation and Growth Team' in March 2001. This was a group of senior figures in the industry commissioned by the Government to take evidence and produce a report on future priorities and recommend policy action. The Team's reports were published in May 2002, (AIGT, 2002), with a series of recommendations. These included actions to:

- Create an Automotive Academy to build on existing 'shop floor improvement' initiatives, such as Accelerate, (see below) and to develop programmes to train the multi-skilled engineers of the future.
- Extend the West Midlands based Accelerate Supply Chain Improvement Programme (see below) to the rest of the UK.
- Refocus the Foresight Vehicle Programme on commercial exploitation (Following this its leadership moved from DTI to the Society of Motor Manufacturers and Traders.)
- Establish two UK Centres of Excellence in Low Carbon and Fuel Cell Technologies and on transport Telematics and Technologies for Sustainable Mobility

The Automotive Academy is in the process of being set up with a Government commitment of £15 million over the next five years to fund its development. The Academy will deliver programmes in most regions, using existing providers, across the UK. Its administrative HQ will be in the West Midlands. Nick Barter, a former product development head of Jaguar and Land Rover, has been appointed as launch director of the Academy. Regional centres will promote supervisory, management and engineering training for Britain's future automotive businesses.

At local level, Advantage West Midlands (AWM) is the West Midlands Regional Development Agency. Among its activities are the attraction and expansion of overseas investment and the development of supply chains. AWM has adopted a cluster approach to economic development following the work of Michael Porter, (1998). The Agency has identified ten strategic clusters in the region as priority channels for funding and other support. These range from established industries, such

as automotive, to embryonic clusters where there are few companies but there is a growth in activity. The aim is to support and strengthen existing industry but to also address the region's over dependence on the auto industry – and particularly on its mechanical engineering aspects.

For each one AWM is in the process of setting up 'Cluster Opportunity Groups'. These are intended to be private sector led but involve all the elements of the cluster – suppliers, service providers, professional associations universities, training providers etc. The purpose of the Groups is to look at the issues facing businesses in the clusters and set out strategies for how these can be addressed. The Groups are also intended to have a role in publicizing regional capabilities in conjunction with the Development Agency.

The Agency has sought to develop the Automotive Cluster Opportunity Group from the Executive Group of an existing regional project – Accelerate. This has, to-date, been the largest single support project for the sector. It was set up in 1996 with £12 millions grant from the regional Objective 2 Programme (ERDF) and is now in its third phase.

Accelerate is an industry led public-private partnership. Its original objective was to address shop floor improvement (QCD) within component manufacturers. This is still the main focus but the Programme now also helps to address wider issues of firms' awareness, management structure, culture, planning and innovative capacity. It currently has public funding of almost €50 millions for:

- Business Development Grants.
- Supply Chain Improvement Programmes.
- Innovation Networks.
- Specialist Centres – for example technology centres in universities

Following the sale of Rover by BMW additional funds were made available from the Secretary of State and allocated through Rover Task Force (RTF) – a group of regional business leaders. These funds addressed a number of immediate problems of potential loss of business by small companies in the supply base. They also addressed longer-term issues of regional diversification and the development of high value, growth sector businesses. Rover Task Force funding has enabled Accelerate to extend eligibility to companies outside the Objective 2 area and to larger firms - with up to 400 employees.

Summary and Future Scenarios

This case study of the automotive sector in the UK West Midlands has examined the main features of the industry, its trends and drivers and the changes that are impacting upon it. It concludes by looking at the competitive position of the region's industry and its preparedness for these changes using a SWOT analysis.

1. Main Strengths

- A significant presence of OEMs.

- A strong presence in the growing segments of the market – super minis and premium vehicles
- A very large number of suppliers representing considerable depth and diversity. In theory, at least, ‘the region’ is capable of meeting most supply needs
- A strong tradition and culture of manufacturing and, therefore, much tacit as well as formal knowledge/skill
- A high quality engineering services sector well integrated with the major global players
- Good development facilities at Jaguar, Land Rover, MIRA, RAPRA, TRW and others
- Flexibility of labour markets compared to other EU Member States
- A strongly supportive public sector

2. Significant Weaknesses

- Too much concentration on low value components. Many firms struggle in competing on costs for ‘old technologies’ and too few have a strong involvement in newer high value areas.
- Lack of UK electronics or communications industry to support developments in high value vehicle technologies
- Lack of investment over several decades and continued utilisation of out-date equipment and methods
- Continued concerns about quality and costs – relatively high costs of labour for example
- Significant skills shortages – particularly for skilled blue-collar trades
- An ageing workforce
- Non-UK ownership of most of the OEMs and major suppliers
- Lack of local design or purchasing authority in most major companies
- Lack of high quality automotive research facilities in any of the local universities
- Lack of high-level management and engineering skills – especially within the supply base.
- Difficulties in communication with the education sector – especially universities.
- Little evidence that small or medium sized supply companies are gearing themselves to the global trends eg e-commerce and on-line trading and design

3. Main Opportunities

- Investment by major suppliers in manufacturing or assembly facilities provided the vehicle builders remain in the region and are successful.
- New markets for the premium vehicles manufactured in the region – e.g., China
- Standardisation of components provides the opportunity to supply at higher volumes.
- To exploit technological change to provide niche opportunities in current developments
- To ‘leap-frog’ to new areas not yet at the exploitable stage of development and to develop public policy geared to such possibilities
- To develop the engineering services sector, given by the outsourcing of key design and development activities by OEMs and the major suppliers

- To exploit the region's engineering, innovation and production capacity, this given by the expanding market for niche vehicles, and low volume derivatives of standard production vehicles
- To develop engineering solutions to meet increasing environmental and safety concerns and legislation.

4. Main Threats

- The loss of any of the OEMs to the region. This could lead to the loss of 1st Tier and several 2nd Tier suppliers. They depend on contracts with the OEMs.
- Movement to the USA of production that is currently exported
- The lack of local design, or purchasing authority, which means that the region could get by-passed in future developments
- Falling proportion of exports to the European Market
- The movement of the production of vehicles and components to low (wage) cost countries. This applies to labour intensive processes but also to high technology manufacture.
- Insufficient engagement in high value technologies where labour and other costs are less critical
- The growth of European and global supply matrices with no boundaries.
- Exchange rate fluctuations while the UK remains outside the Euro zone.

In conclusion it can be noted that the latest Cambridge Econometrics Regional Report observes that the West Midlands economy is achieving strong growth. However, much of this is a result of buoyancy in the service sector. Manufacturing is expected to grow more slowly. The motor industry, which as discussed above, remains of strategic importance to the regional economy is expected to continue growing at a rate faster than that of the UK sector over the medium term. However, the pursuit of productivity gains is having a drastic effect upon regional employment in this sector, and the impact of supply-chain re-organisation is creating harsh conditions for component suppliers and especially the smaller single process firms in sectors such as basic metals, rubber and plastics.

The future of the industry in the region rests on the continued presence of the vehicle manufacturers and upon achieving competitive levels of productivity. It also relies on investment by the major players in new and high value technologies. The region continues to have an over reliance on mechanical aspects of the vehicle at a time when value is shifting towards electronics and communications. Future success will rest on exploiting engineering skills, especially in high value areas, as well as in manufacturing. It will also rest on the success of the industry, the region and the UK as a whole in attracting and training the next generation of its workforce.

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