BERR | Department for Business Enterprise & Regulatory Reform

REPORT ON THE BUSINESS ENVIRONMENT FOR JAPANESE AUTOMOTIVE SUPPLY COMPANIES IN THE UK

APRIL 2008

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Foreword

The automotive industry is a UK success story. Britain continues to be Europe's most diverse vehicle manufacturing location and a global centre of excellence for engine development and production. The UK now attracts more investment by Japanese vehicle manufacturers and Tier 1 suppliers than any other European country. This Japanese influence has contributed enormously to the dynamism of the UK industry in recent years, pushing the sector to the vanguard of process and product excellence. This success is sharply demonstrated by the performance of the UK automotive supply chain where productivity has increased by almost 40% over the past decade.

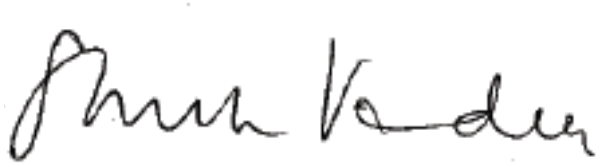
Our record is strong, but attracting and developing sustainable domestic supply chains is essential for the continued growth of the industry. The UK's success rests on meeting the challenge of sustaining a skilled workforce, and innovating to maintain our competitive advantage. Global markets have brought competition from low cost economies, but the UK industry can confront this challenge and remain at the forefront of vehicle build and development.

This comprehensive report into the business environment for the Japanese vehicle manufacturers and automotive suppliers based in the UK is therefore very timely. I am grateful for the time and effort which the companies have committed to this study. The issues identified are not unique to Japanese owned companies, and our response to the findings will be critical to the ongoing competitiveness of the industry and the UK's ability to attract and retain automotive investment.

The evidence in this report will feed into two major initiatives. Last November the Government announced a review of our Manufacturing Strategy to ensure the business environment in the UK continues to support world-leading manufacturing. We are also launching a new Automotive Innovation and Growth Team (NAIGT), bringing together senior public and private sector representatives to shape the Government's automotive strategy for the next 15 to 20 years. This will build on the success of the first AIGT in 2002 which developed a number of successful sectoral initiatives such as the Supply Chain Groups programme, the Automotive Academy, two Centres of Excellence, and the Low Carbon Vehicle Partnership.

The report also sets out several early actions in response to the more short term issues raised. These are already being taken forward with partners. We have recognised the need for greater leadership and management skills in supporting supplier improvement. BERR, in conjunction with the National Skills Academy for Manufacturing and the Society of Motor Manufacturers and Traders' Industry Forum, has developed new proposals for pilot programmes, which are now being discussed with three Japanese vehicle manufacturers. Specific support measures for supplier identification are also under development with SMMT and the Regional Development Agencies. Last December, we also held a first networking event for Japanese automotive companies in the UK. This provides a new forum for exchanging views and reviewing progress; we will build on this success to ensure UK supply companies continue to collaborate constructively in pursuit of competitive advantage.

The UK can be proud of its automotive industry, but its continued growth demands a productive dialogue between industry and Government. Maintaining the UK's competitive advantage is our priority – together, we can equip the industry for even greater global success.



Shriti Vadera

Parliamentary Under Secretary of State for Business and Competitiveness

Executive Summary and Action Plan

Background

BERR (formerly DTI) carried out the survey phase of this project looking into the **Business Environment for Japanese Automotive Supply Companies in the UK** over a 12 month period from summer 2006. It was undertaken by a senior secondee from METI/Japan with support from BERR's Automotive Unit. The project was initiated in response to the discussions on the UK automotive supply chain between then DTI Ministers and representatives of the Japanese automotive industry in 2006. Questionnaires were sent to all of 68 Japanese auto-parts manufacturing companies identified in the UK. Out of the 68, 41 companies replied, and 36 were interviewed on site. The three Japanese Vehicle Manufacturers (VMs) with operations in the UK, Honda, Nissan and Toyota, also cooperated in this project.

Success of UK automotive industry

Britain continues to be Europe's most diverse vehicle manufacturing location.

The UK is home to seven of the world's largest global automotive manufacturers, more than any other European country, and 19 out of the top 20 auto-parts makers have a manufacturing presence in the UK. The UK has attracted more investment by the Japanese VMs than any other country in the EU, as well as the highest number of inward investments by Japanese auto-parts manufacturers. There are now 76 investments by Japanese Tier 1 companies operating in the UK, significantly more than the second-ranked country with 56.

Productivity has significantly improved.

Productivity of the UK automotive supply chain has been remarkably improved over the past decade. Since 1997 it has been raised by 36% as a result of restructuring and the introduction of lean manufacturing by the industry, surpassing by far the rate of productivity improvement of supply chain in Japan in the same period, 12%. This statistical evidence coincides with the assessment of Japanese Tier 1 companies in the UK. Taking their Japanese parent companies as a benchmark, both labour productivity and overall plant productivity have improved more in their UK operations, in relative terms, over the past decade.

Overall assessment of UK supply chain by Japanese automotive companies

Despite these successes we cannot afford to be complacent. The international context is ever changing and industry needs to remain competitive. This survey found evidence of Japanese automotive companies progressively increasing procurement from Low Cost Countries (LCCs), such as Eastern Europe, India and China, at the expense of UK suppliers, particularly in the areas of metal and plastic parts and tooling. Moreover, while there were many successful supplier relationships identified, the performance of non-Japanese UK Tier 2 suppliers was rated as less satisfactory overall, compared with local suppliers in other regions. Cost and new product delivery (speed) were most frequently highlighted as areas for improvement.

However there are opportunities and potential for further procurement from UK local Tier 2 suppliers. For example, Japanese Tier 1 companies in the UK import an unusually high percentage of parts (30%) from Japan and ideally would prefer to switch such imports to local procurement. In another positive note, the survey showed that more than half of Japanese Tier 1 companies are likely to make further manufacturing investments in the UK.

Issues identified and Action Plans

A strong local supply chain is essential to retain and increase VMs' investment in the UK. While the survey focused on Japanese automotive companies, the findings have implications for the industry as a whole. Action Plans have been formulated by BERR in discussions with key stakeholders.

The first two issues will feed into strategic reviews to develop the appropriate longer term responses. For the remainder, early actions are now being taken.

Issue 1: Ensuring world class supply chains

The national Supply Chain Groups (SCG) programme, jointly funded by BERR and RDAs, came to an end in March 2008. Over its 5 year life this programme supported 62 projects, involving 575 suppliers employing 160,000 people, and facilitated major productivity improvements of up to 40%.

This focused largely on process improvement through lean manufacturing; there is now an opportunity to review the lessons of this programme, and take account of the issues identified in this report.

Action: The New Automotive Innovation and Growth Team (NAIGT), as part of its wider strategic review of the challenges facing the industry in the future, to examine and make recommendations to Government on the response required by March 2009.

The NAIGT will engage key stakeholders from industry (and through a separate parallel Communications Group involving other Government Departments) produce a comprehensive report that contains a series of recommendations and an action plan aimed at ensuring an automotive industry that:

- continues to develop in the UK and adopts world class innovation; protects jobs; promotes growth; and encourages overall prosperity in the UK;
- anticipates, develops, adopts and embraces technological changes in response to a range of societal, technological, environmental, economic, political and infrastructural drivers, so as to inform and influence policy making in the future; and
- retains its international competitiveness by attracting internationally mobile investment; and that global issues such as low cost sourcing and new market opportunities are fully taken into account in development of the UK national strategy.

Issue 2: The image of manufacturing

There is a strong desire for the UK Government to be more vocal in its support of manufacturing industry. In on-site interviews, many companies expressed concern about the extent of the UK Government's commitment to manufacturing industry, and the need to do more to correct the perception of a lack of emphasis on manufacturing, which could affect parent company attitudes to additional investment in the UK. The three VMs also consider that the profile of both manufacturing and engineers needs to be raised in the UK through increased policy attention by the UK Government to this sector.

Action: The forthcoming revised Manufacturing Strategy will refresh the Government's strategy to establish and maintain a business environment that supports world-leading manufacturing and global value chains. The findings of this report will form part of the evidence base.

Issue 3: Management capability of UK suppliers

Skills availability at all levels were the major concern of the companies interviewed. All three VMs and many of the 41 Japanese Tier 1 companies emphasized in particular the

importance of improving the management capability of UK suppliers to address the root causes of their less satisfactory performance. About half of Japanese Tier 1 companies even requested UK Government support for their own middle-management development.

Action: More focus on management capability in supply chain improvement programmes.

BERR is working with the National Skills Academy for Manufacturing and SMMT Industry Forum to develop a new approach which will use the focus of supply chain improvement programmes to enhance leadership and management skills, in addition to the previous emphasis on process improvement. BERR is consulting the three Japanese VMs on proposals for pilot demonstration projects to begin by June 2008 which will aim to deliver NVQ level 3/4 leadership and management and MBA equivalent training. The National Skills Academy for Manufacturing is one of the Government's flagship sector skills academies and will apply the learning from such pilots to other sectors across its manufacturing footprint leading to business improvements through better quality, cost and delivery performance across the supply chain.

Issue 4: Supplier identification

The survey has suggested that for many Japanese Tier 1 companies, a simple lack of information about capable UK suppliers had sometimes led to previous decisions to source from elsewhere. Their efforts to find suitable Tier 2 suppliers have been far from comprehensive due to their limited resources. Facilitating partnerships with LCC suppliers may also in many cases be a key to maintaining competitive Tier 1 activity in the UK.

Action: Support for supplier identification by UK Tier 1 suppliers.

Three related responses are being taken by BERR with SMMT, RDAs and other partners:

- Development of a UK supplier database/finder service. This is being piloted now aiming to establish a critical mass of suppliers and original equipment manufacturers by the end of 2008.
- Undertaking more targeted activities between Tier 1s and UK Tier 2/3s for example through brokerage of one-to-one partner searching and matching and "meet-the-buyer" events.
- Provision of contact information for companies in LCCs.

Issue 5: Common operational issues of Japanese Tier 1 companies

There are many common operational issues facing Japanese Tier 1 companies, such as employee motivation, and enhanced networking among them could be beneficial for sharing best practice.

Action: Enhanced networking among Japanese Tier 1 companies.

BERR in association with JAMA and JAPIA, and supported by Advantage West Midlands (AWM), organized a first networking meeting in December 2007. Participants' feedback on the value of the event was very positive. BERR with its partners will build on this success in planning new and subsequent events as a forum for exchanging views and reviewing progress of Action Plans. A second themed meeting is envisaged for autumn 2008, which is likely to focus on UK R&D capability and the demonstration of the supplier finder service.

Issue 6: Seizing opportunities in LCCs

LCCs present opportunities, both as new markets and as centres for low cost production, to improve the competitiveness of UK suppliers. The VMs suggested that UK suppliers' efforts for exploring opportunities in LCCs need to be strengthened.

Action: More coordinated and strengthened support for internationalization of UK suppliers.

These concerns have been brought to the attention of UKTI as it continues to develop its advice and actions to help UK companies internationalise and grow their business overseas. BERR Automotive Unit and UKTI have established a joint team which meets regularly to ensure coordination of the Government's response to this issue and to explore potential additional actions. An early outcome has been the agreement for BERR, UKTI and SMMT to work together to raise the profile of UK capability in low-carbon and other advanced automotive technologies in the Indian market. This work will support the development of a new UK/India research, development and demonstration programme announced in Budget 2008.

Issue 7: Lack of awareness of issues and support available

A clear need was identified to draw the findings of this report more widely to the attention of UK Tier 2/3 suppliers, so as to encourage them to take necessary action and ensure that their perspective is fully taken into account in any responses. There was also a lack of awareness among Japanese Tier 1 companies of most of the existing schemes to aid supplier improvement.

Consequently, with the exception of Industry Forum, they had been little used individually or in association with their suppliers. In addition opportunities offered by the UK as an R&D base do not seem to be sufficiently recognized by Japanese Tier 1 companies. Only a few examples of Japanese Tier 1 companies carrying out collaborative R&D with UK universities came up in the survey.

Action: Awareness-raising of issues and support available.

BERR is working with SMMT and RDAs to raise awareness among UK Tier 2/3 suppliers of the key competitiveness issues, such as quality, cost, delivery performance and ability to innovate, identified in this report and to facilitate open dialogue on possible actions by using existing fora and organising seminars. BERR is also working with RDAs for example through the National Automotive Group to raise awareness of the supply chain support already available, both through a targeted programme for Japanese Tier 1 companies and more generally, and with UKTI and RDAs to better promote UK R&D capability to Japanese companies.

1. Background

BERR (formerly the DTI) conducted the project on **Business Environment for Japanese Automotive Supply Companies in the UK** from summer 2006 to summer 2007. It was carried out by a senior secondee from METI/Japan with support from BERR's Automotive Unit. The project was initiated in response to the discussions between then DTI Ministers and representatives of the Japanese automotive industry. During the visits to Japan by then DTI Ministers in 2006, JAMA (Japan Automobile Manufacturers Association) stressed the importance of focusing on the competitive pressures faced by Japanese automotive companies operating in the UK, particularly those related to the supply chain. Reflecting the UK Government's commitment to do all it could to help this important sector to continue to succeed, the DTI then implemented a questionnaire-based survey to provide an accurate and comprehensive understanding of the UK business environment as experienced by Japanese automotive companies, with a focus on supply chain issues. The survey was designed so that its findings could inform the development of a supportive UK policy framework.

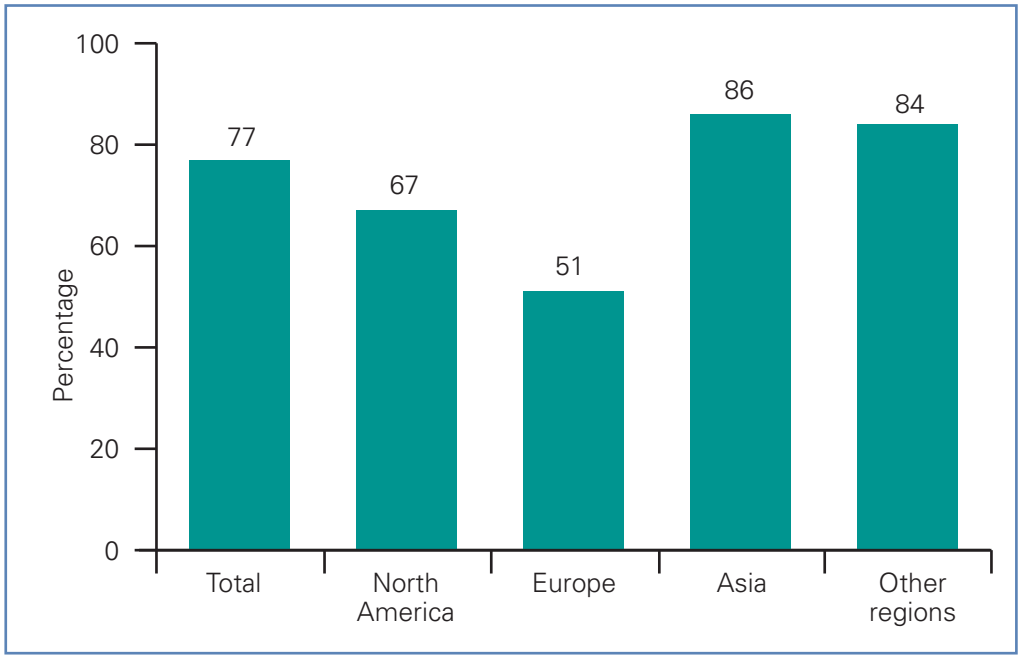
The questionnaires were sent to all of 68 Japanese auto-parts manufacturing companies in the UK in November 2006. Out of the 68, 41 companies replied, and 36 companies (in most cases their Managing Directors (MDs)) were interviewed on site by then DTI officials. Given the complexity of the survey, this return rate (about 60%) is considered very high. In addition, three Japanese VMs (Honda, Nissan and Toyota) cooperated in this project by providing their views and information on Tier 1 suppliers. These findings are fully explained in Chapter 2 and 3. BERR deeply appreciates the time and effort Japanese companies put into this project. (see **Annex 1** for a full list)

1.1 Competitiveness of the EU auto-parts market

The EU auto-parts market is highly competitive for Japanese automotive supply companies. Apart from the questionnaire-based survey, this project analysed the competitiveness of the EU auto-parts market by examining the relevant existing literature. The following two facts can usefully be highlighted. Firstly, while eight Japanese companies are included in the global top 30 auto-parts manufacturers in terms of sales turnover, only one Japanese

company is listed in the top 30 in the EU market[1]. Secondly, as shown in **Fig 1**, the percentage of profitable companies among JAPIA (Japan Auto Parts Industries Association) members is the lowest in the EU of all major markets; just 51% of JAPIA members are making a profit through their EU manufacturing operations.

Fig.1: Percentages of JAPIA profitable companies in various markets

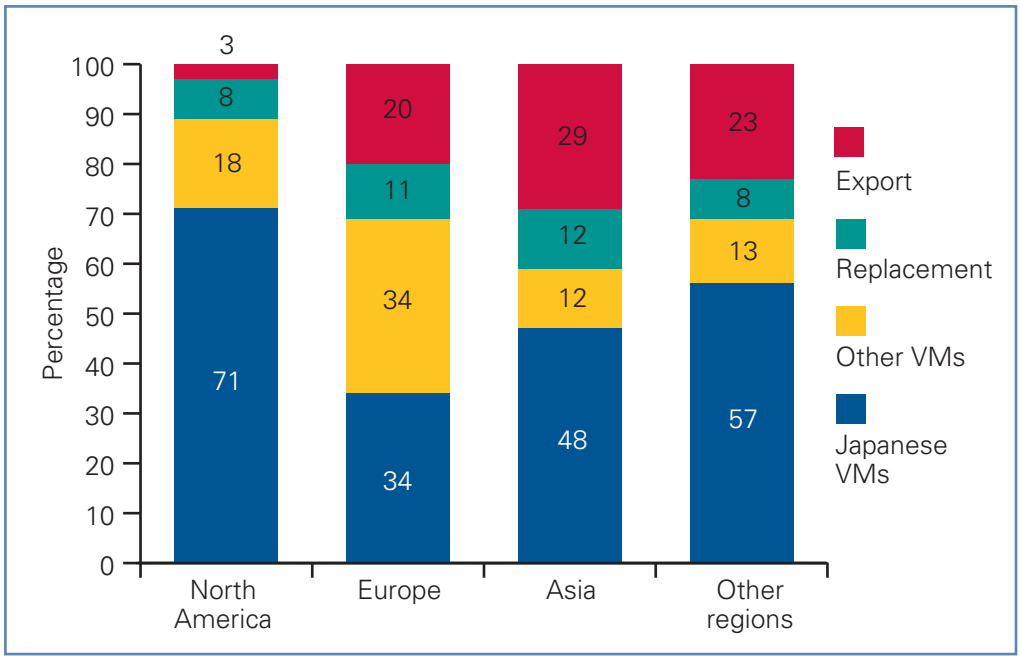


(Source) Overseas operation survey by JAPIA (2006)

Lower vehicle production in the EU by Japanese VMs, compared to in North America and Asia, is considered to be one of the most important factors affecting Japanese auto-parts manufacturers' profitability. Because of this, they have a greater need to explore business opportunities with non-Japanese VMs in the EU market. As seen in **Fig 2**, JAPIA members in the EU market earn the same amount of sales turnover from non-Japanese VMs as that from Japanese VMs, whereas their sales in North America and Asia are predominantly from Japanese VMs. Existence of strong competitors (EU-origin auto-parts manufacturers), however, is obviously impacting on Japanese auto-parts manufacturers' profitability in the EU.

1 Source: "Latest Research on European Automotive Industry, 2007/08" by EBS (Europa Business Services). Unless otherwise indicated as here, all information sources in this report are either answers to the questionnaire or on-site interviews.

Fig.2: Sales turnover of JAPIA members by customers in various markets

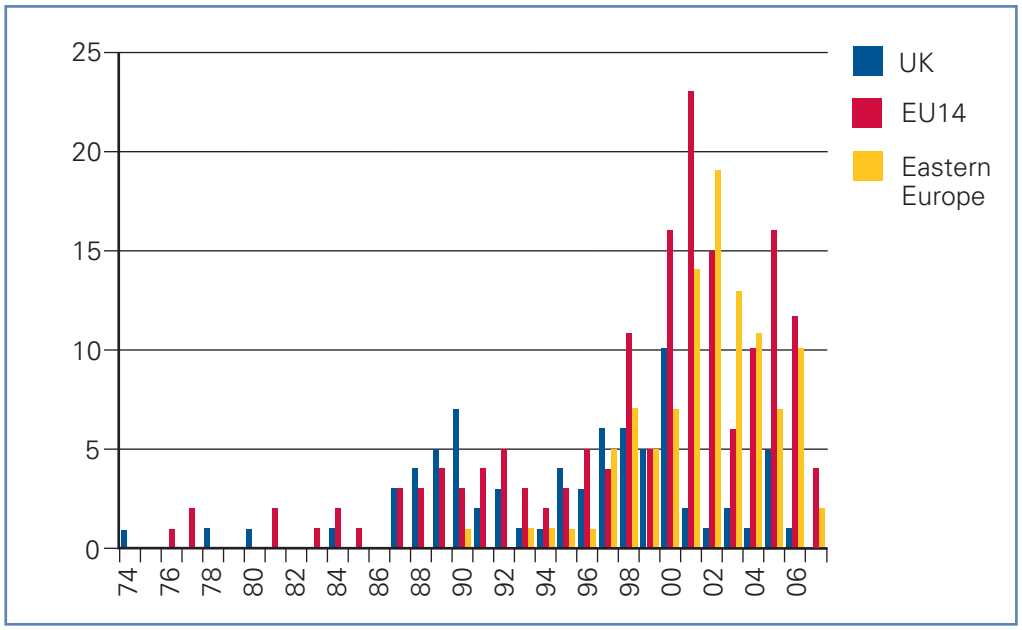


(Source) Overseas operation survey by JAPIA (2006)

1.2 Investment history of Japanese auto-parts manufacturers in the EU

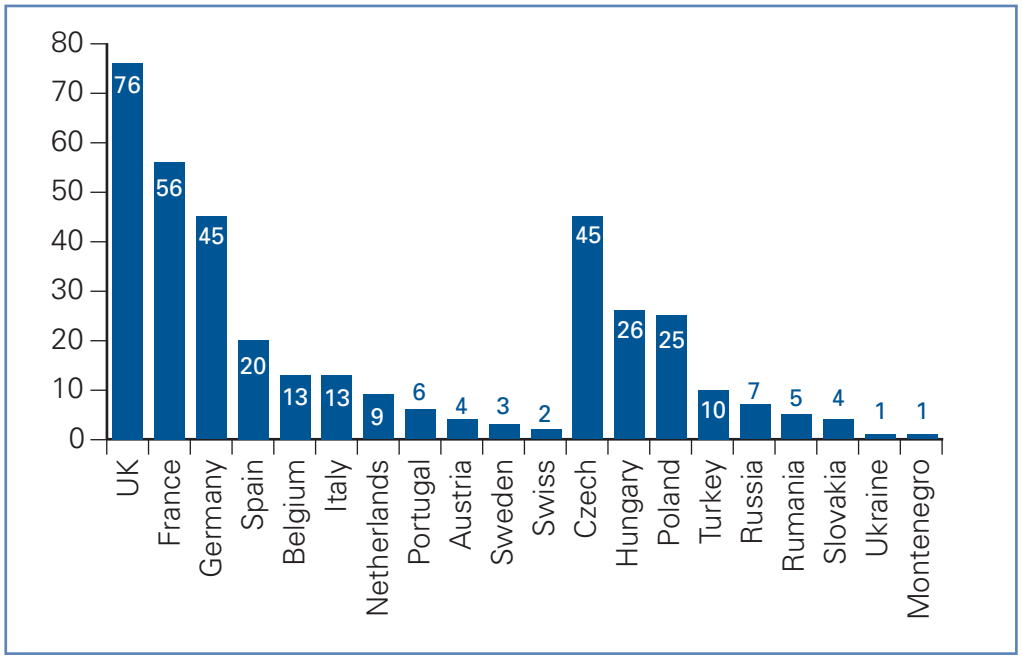
Within the EU, the UK has attracted the highest number of inward investments by Japanese auto-parts manufacturers. As illustrated in **Fig 3**, their investment in the UK peaked twice in 1990 and 2000, responding to start-ups of production by the three Japanese VMs and their further localization of parts procurement. While investments in the EU continent significantly increased around 2001 as Japanese VMs expanded manufacturing operations there, the UK remains the leading country in terms of the number of accumulated investments by Japanese auto-parts manufacturers, as seen in **Fig 4**. However, there is no room for complacency since, as indicated in Chapter 2, Japanese auto-parts manufacturers in the UK consider that their business environment is in some respects becoming less favourable than in the past.

Fig. 3: Number of investments by Japanese auto-parts manufacturers in the EU by year



(Source) Compiled by BERR using "Latest Research on European Automotive Industry, 2007/08" by EBS

Fig. 4: Number of accumulated investments by Japanese auto-parts manufacturers in the EU and others



(Source) Compiled by BERR using "Latest Research on European Automotive Industry, 2007/08" by EBS

1.3 Japanese auto-parts manufacturers in the UK

This project identified 68 auto-parts manufacturing companies in the UK whose parent companies are, or used to be, Japanese. It is estimated that these 68 Japanese auto-parts manufacturers in the UK employ approximately 24,000 people[2]. This amounts to about 20%[3] of total employment of UK auto-parts industry as a whole, in which 2595 companies employ 115,000 people[4].

Their Japanese parent companies' operations are highly global. As shown in **Table 1**, almost all the Japanese parent companies of the 68 UK subsidiaries have manufacturing bases in North America, China and ASEAN countries, and half of them in the continental EU. This global nature of their operations significantly affects UK subsidiaries' procurement as analysed in Chapter 2.

Table 1: Percentages of Japanese parent companies of the 68 UK subsidiaries that have manufacturing bases in other parts of the world

EU14	Eastern Europe	China	India	Other Asia	North America
46%	43%	95%	39%	93%	98%

(Source) Complied by BERR using Marklines service (automotive information platform) and each company's homepage

In terms of the number of companies, 34% of their Japanese parent companies are considered as "keiretsu"[5] suppliers of the three Japanese VMs, whereas the remaining 64% are independent suppliers.

2 Source: Hemscott Company Guru (2006) Academic Edition.

3 This percentage is comparable with that of VMs. In the UK, three Japanese VMs employ approximately 15,000 people which amount to again about 20% of 79,000 employees in vehicle and engine production in the UK as a whole. In terms of production, however, three Japanese VMs' contribution is much greater. Producing 869K units, the three Japanese VMs contributed 50% of total vehicle production in the UK in 2007. A greater contribution in terms of production is probably the case for Japanese auto-parts manufacturers as well, though this is difficult to quantify.

4 Source: ONS ABI data for 2006 (published November 2007).

5 "Keiretsu" is defined here as the case where the top shareholder of these Japanese parent auto-parts companies is one of three Japanese VMs.

2. Findings from the survey of 41 Japanese auto-parts manufacturers

2.1 Profile of the 41 companies

The 41 companies[6] that cooperated in this project manufacture a whole range of auto-parts: engine parts, electronics and electric parts, meters, suspension and brake parts, drive-line and steering parts, body parts, accessories, etc. Out of the 41, 25 companies (61%) and 16 companies (39%) were established as green-field and brown-field investments in the UK respectively. 15 companies (37%) started their operation as joint-ventures, typically with EU or US-origin auto-parts makers, but in about half of such joint-ventures, Japanese parent companies obtained 100% ownership thereafter.

On profitability, the 41 companies replied:

- Current: 27 companies (66%) in the black vs. 14 companies (34%) in the red
- Trend: 17 companies (43%) improving vs. 10 companies (25%) deteriorating
- Accumulated loss: 24 companies (60%) cleared vs. 16 companies (40%) not yet cleared

These figures are slightly better than the EU average of JAPIA member companies as compared with Fig 1. It is considered that the longer history of their UK operations, compared to those in the EU continent, has contributed to this.

As seen in **Table 2**, the customers of the 41 companies are diverse. Ratios of sales turnover from Japanese VMs are slightly higher than the EU average of JAPIA member companies as compared with Fig 2. This is probably because of stronger presence of three Japanese VMs in the UK than in the continental EU.

6 Even though many of these 41 companies operate as both Tier 1 and Tier 2 suppliers in the UK, this report refers them as "Japanese Tier 1 companies (suppliers)" for the sake of simplicity and clarity in the context of supply-chain.

Table 2: Customers of the 41 companies

Customers	Number of suppliers (out of 41 companies)	Average % of sales from this customer
Honda	25	41%
Nissan	13	34%
Toyota	19	48%
EU-origin VMs	17	25%
US-origin VMs	15	19%
Others	24	30%

2.2 Opportunities: potential for further local procurement by the 41 companies

Strong needs exist for the 41 companies to further procure from UK local suppliers. Many Japanese Tier 1 companies in the UK wish to switch parts currently imported from Japan to local procurement. Also about half of the 41 companies are likely to make further manufacturing investment in the UK, which could lead to new procurement and new Tier 2 suppliers. The companies and the product areas of the UK supply chain are highly diverse. The next section analyses such opportunities by type of company.

2.2.1 Procurement structure of the 41 companies

"Assemblers" vs. "Fabricators"

The procurement structures of the 41 Japanese auto-parts manufacturers surveyed significantly differ, depending on the nature of their operations. For analytical purposes, this project categorized the 41 companies into the following two categories:

- "Assemblers": 11 companies, whose main operation is considered as assembling, typically utilizing electronics and electric components.
- "Fabricators": 30 companies, whose main operation is considered as production of steel, aluminium, plastic components, etc. from raw materials.

As seen in **Table 3**, "assemblers" are larger than "fabricators" in terms of employment and sales turnover. The average ratio of procurement to sales turnover of "assemblers" (70%) is higher than that of "fabricators" (58%). Also "assemblers" show a lower percentage of procurement from their top 10 Tier 2 suppliers in total procurement (39%) than "fabricators" (50%). All these

indicate that the supplier basis of "assemblers" is broader and more diverse than that of "fabricators", reflecting the differences of operational nature of the two groups. Also, although difficult to quantify, the on-site interviews suggested that "assemblers" seem to be sourcing more from LCCs than "fabricators".

Table 3: Profiles of the 41 companies

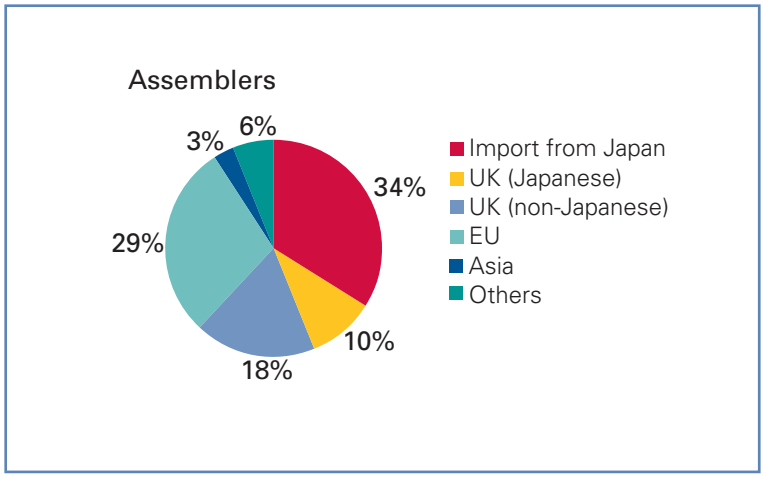
	Assemblers	Fabricators	Overall
Ave. of employees	392	299	324
Ave. of sales turnover	£66 million	£39 million	£46 million
Ratio of procurement to sales turnover	70%	58%	62%
Ratio of procurement from top 10 Tier 2 suppliers	39%	50%	47%

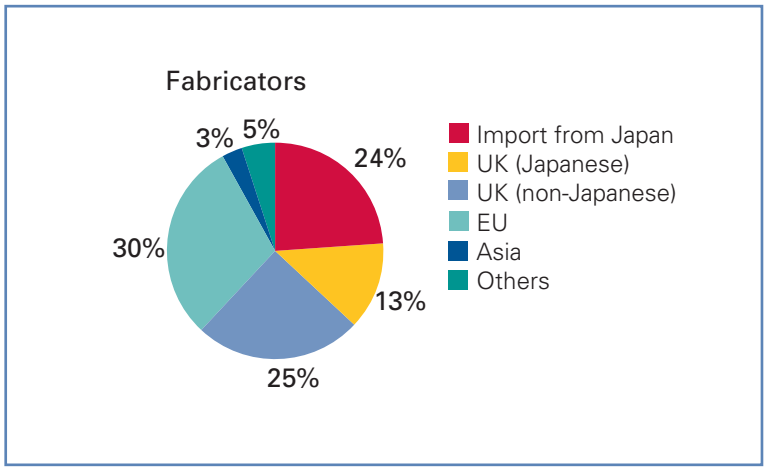
Regional procurement structure by value

Fig 5 shows the 41 companies' procurement structure by value in terms of the locations of their Tier 2 suppliers. Since "assemblers" use electronics and electric parts to a larger extent, and since many of these (rather expensive) parts are imported from Japan, "assemblers" show much higher percentage of import from Japan (34%) than "fabricators" (24%). Also the imports from Japan of "assemblers" typically include "pass-through" parts, which are shipped to their customers without any local manufacturing or assembling work in the UK.

On the other hand, "fabricators" are more dependent on the UK local supply chain; 38% of their total procurement is sourced from UK Tier 2 suppliers, whereas this percentage is 28% in "assemblers". Even in "fabricators", about one quarter (24%) of their total procurement is imported from Japan, which includes such bulky and heavy components as pressed or forged metal, iron casting and plastic mouldings. In the on-site interviews, many MDs, in particular of steel parts manufacturers, pointed out that such high percentage of imports from Japan is rather unusual, compared to their other overseas operations such as in US. They expressed a desire to switch such imports to local procurement, but apparently have failed to do so because of insufficient local supplier basis and/or lack of information and resources needed for supplier identification. Also the recent appreciation of sterling against the Japanese yen has made it more difficult to switch from imports to local manufacturing.

Fig. 5: Regional procurement structure by value





Top 10 Tier 2 suppliers by product categories

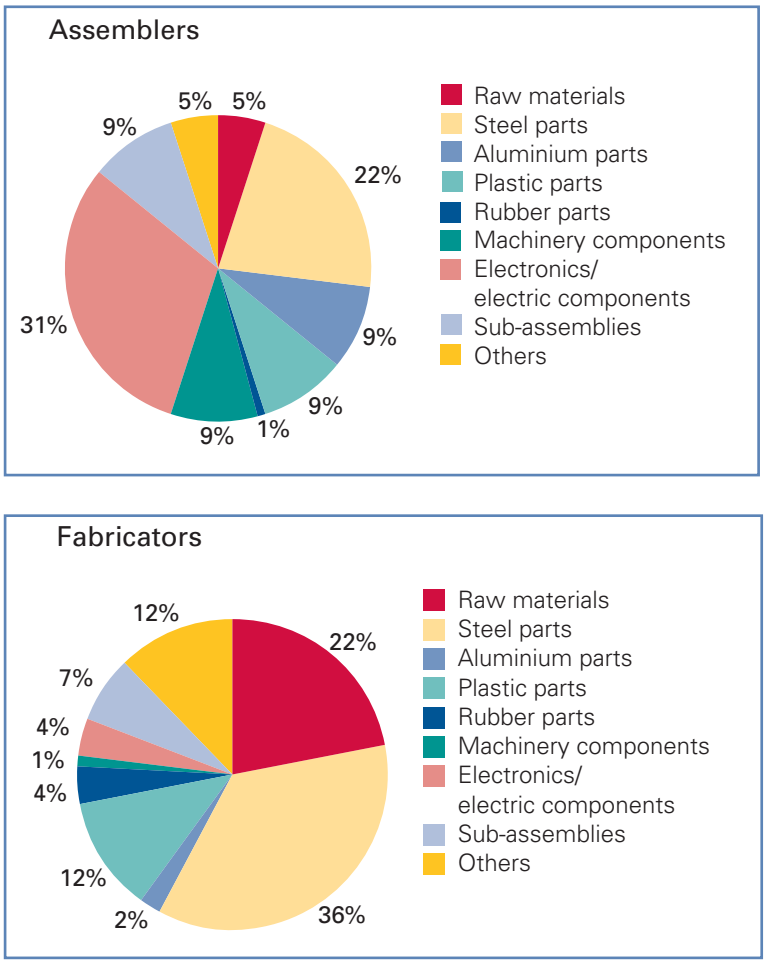
An even more stark difference can be found if the nature of products procured is compared between "assemblers" and "fabricators". The questionnaire asked for the list of top 10 Tier 2 suppliers outside of Japan: their names, locations and products/services. In total, information on 324 Tier 2 suppliers was obtained[7]. **Fig. 6** illustrates categories of products procured from such top 10 Tier 2 suppliers. In "assemblers", 31% of top 10 Tier 2 suppliers are manufacturers of electronics and electric components, the most significant category. The second largest percentage is 22% for steel parts.

In contrast, the highest percentage in case of the top 10 Tier 2 suppliers for "fabricators" is 36% for steel parts (pressing, forging, casting, machining, etc.), followed by 22% for raw materials and 12 % for plastic components. Through the on-site interviews, it was found that some of "fabricators" use Tier 2 suppliers as

7 These are top 10 Tier 2 suppliers in terms of procurement value. They exclude Tier 2 suppliers located in Japan. Since some of the 41 Japanese Tier 1 companies use less than ten suppliers, and since a few companies declined to provide such supplier information, the total number of top 10 Tier 2 suppliers that has been recorded in this project does not amount to 410.

subcontractors of their core businesses such as steel pressing and plastic moulding. For them, such Tier 2 suppliers (typically UK local suppliers) are essential business partners.

Fig 6: Top 10 Tier 2 suppliers by product categories

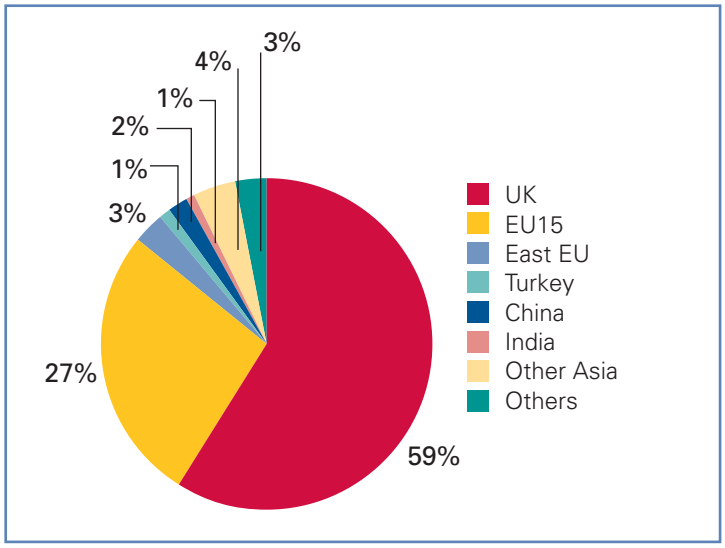


Top 10 Tier 2 suppliers by regions

Fig 7 shows the regional distribution of top 10 Tier 2 suppliers (excluding Japan) of the 41 Japanese Tier 1 companies. About 60% of the 324 Tier 2 suppliers are located in the UK. The 324 top 10 Tier 2 suppliers include 31 sister subsidiaries of the 41 Japanese Tier 1 companies (i.e. subsidiaries of Japanese parent companies of the 41 UK subsidiaries): 13 in Asia (including 5 in China), 8 in Western Europe, 6 in Eastern Europe and 4 in North America. This means that within the 324, approximately half of top 10 Tier 2 suppliers located in LCCs (Eastern Europe and Asia) are sister subsidiaries.

Obviously different Japanese Tier 1 companies could be using the same Tier 2 suppliers. However, duplication among the 324 suppliers is rather limited; there are about 280 suppliers net. Most duplication is seen in raw material suppliers.

Fig 7: Top 10 Tier 2 suppliers by regions



All UK Tier 2 suppliers by product categories

The questionnaire also asked for information on all UK Tier 2 suppliers: their names, locations and products/services. 24 Japanese Tier 1 companies out of the 41 provided such information and in total a list of 716 UK Tier 2 suppliers was obtained, including 188 among the 324 top 10 Tier 2 suppliers. **Fig 8** illustrates percentages of the 716 UK Tier 2 suppliers by product categories. Even though the number of Japanese Tier 1 companies that provided information is limited, this figure nevertheless provides a useful overall picture of UK automotive Tier 2 supplier basis.

As shown below, more than half (54%) of the 716 UK Tier 2 suppliers produce steel (31%), aluminium (3%), plastic (14%) or rubber (6%) parts. It should be noted that while 7% and 9% of the 716 UK Tier 2 suppliers deliver raw materials, and electronics and electric parts respectively, these suppliers do not necessarily manufacture their products locally in the UK, but typically import them from other countries. Therefore in terms of local production, suppliers of steel, aluminium, plastic and rubber parts, together with tooling and other manufacturing facility suppliers, constitute core elements of the UK automotive supply chain. In the on-site interviews some MDs pointed out the strength of the existing clusters in the UK, in particular of the metal parts industry. Others emphasized the strength of engine manufacturing in the UK; i.e. casting, forging, machining and assembling of metal parts.

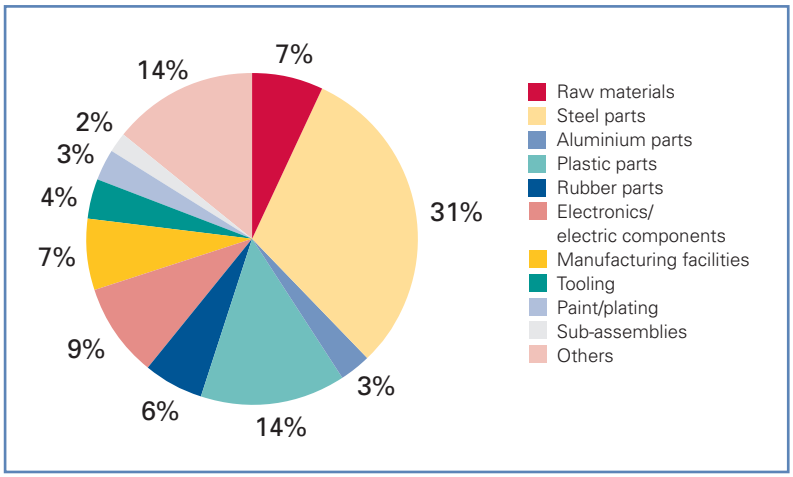
Again duplication among the 716 UK Tier 2 suppliers is rather limited. In net terms there are about 560 suppliers, and much of the duplication is seen in raw material suppliers.

In the on-site interviews, many cases were found where companies were unable to find UK local suppliers for a certain

product category, whereas others are satisfied with performance of their UK local suppliers of the same product category. Also some of the MDs interviewed said that, while recognizing that capable UK local suppliers possibly existed, their limited resources prevented them from making efforts to identify suitable suppliers.

Together with these cases identified in the on-site interviews, a wide range of product categories as shown in Fig 8 and limited duplication of the 716 UK Tier 2 suppliers suggest that Japanese Tier 1 companies could further localize their procurement if more information on UK local Tier 2 suppliers was provided.

Fig 8: All UK Tier 2 suppliers by product categories



2.2.2 Prospects for future investment by the 41 companies

The questionnaire asked about the likelihood of further investment by their Japanese parent companies, including the expansion of existing facilities, within the next five years. As seen in **Table 4**, 51% of the 41 Japanese Tier 1 companies indicated that further investment in manufacturing in the UK was likely. This number is almost equivalent to those for LCCs such as Eastern Europe (54%) and Asia (41%). Manufacturing expansion could mean new procurement and new Tier 2 suppliers. Significant opportunities therefore exist for further local procurement.

In planning new procurement necessitated by such expansion, many MDs responded that they would prefer UK Tier 2 suppliers to those more geographically distant if performance such as in QCD (quality, cost and delivery) was the same. The on-site interviews suggested that a simple lack of information about capable UK suppliers has sometimes led to previous decisions to source from elsewhere.

Table 4: Percentages of companies that answered that further investment is likely

	UK	Western Europe	Eastern Europe	Turkey	Russia	Asia
Manufacturing	51%	17%	54%	20%	20%	41%
Design	7%	17%	2%	0%	0%	17%
R&D	10%	22%	2%	0%	2%	15%

However, it should be also noted that such opportunities could be easily lost. 21 companies out of the 41 reported 28 cases where part of their production operations had been transferred or planned to be transferred to other countries – typically to their sister companies in LCCs. **Table 5** shows recipient regions and the reasons for transfer in these 28 cases. A high cost structure in the UK was the reason most frequently given for such transfers. Unless the UK business environment is improved, the above investment opportunities could be forgone. This point will be further elaborated in the following sections of this chapter.

Table 5: Japanese Tier 1 companies' operational transfer out of the UK

Recipient Regions	Number of cases
East Europe	13
West Europe	3
Turkey	2
Asia	7
Others	3

Reasons for transfer	%
Cost reduction	76%
Proximity to customers	24%
Limited capacity in UK	14%
Customers' request	10%

Opportunities offered by the UK as a R&D base seem not to be sufficiently recognized by Japanese Tier 1 companies. The on-site interviews detected only a few examples where Japanese Tier 1 companies carried out collaborative R&D with UK universities. More potential could exist in this regard since the UK research institutes have academic strength on a wide range of areas: from ITS to tribology or foundry technology.

2.3 Trend of increasing sourcing away from the UK

While there are strong needs and opportunities for further local procurement, this project also found that in reality Japanese Tier 1 suppliers are increasingly sourcing away from the UK. This section analyses such trends for the UK supply chain.

2.3.1 Trends of performance of Tier 2 suppliers and procurement from them

Table 6 shows the number of companies which answered questions on these trends. Since Japanese Tier 1 companies do not necessarily use Tier 2 suppliers from all regions, the numbers of respondents are rather small here, and therefore extra caution is necessary in making generalisations. Nonetheless, it could be said that:

- The performance improvement of Asian and European Tier 2 suppliers, particularly in Eastern Europe in the latter case, is more notable than that of UK Tier 2 suppliers in the view of Japanese Tier 1 suppliers.
- Approximately one quarter to one third of Japanese Tier 1 suppliers answering this question responded that they had decreased procurement from non-Japanese UK Tier 2 suppliers in the past and would decrease it further in the future.
- At the same time, about half of companies who answered this question responded that they had increased and would further increase LCC procurement.

There is therefore a risk that UK suppliers could be replaced by LCC suppliers unless they improve performance.

Table 6: Trends of performance of Tier 2 suppliers and procurement[8] from them (Analysis by numbers of Japanese Tier 1 companies that replied)

		Import from Japan	UK (Japanese)	UK (non-Japanese)	EU	Asia
Trend in performance	Improving	N.A.	6	7	8	10
	Stable	N.A.	22	23	24	11
	Deteriorating	N.A.	1	4	2	0
Procurement (past)	Has increased	13	9	7	7	10
	been stable	15	19	16	20	11
	decreased	10	3	8	3	1
Procurement (future)	Will increase	7	6	9	8	9
	be stable	18	15	12	16	11
	decrease	13	8	9	5	2

8 Trends in procurement indicate changes in percentage within total procurement, not necessarily in actual amount of procurement.

2.3.2 Supplier switch from UK to non-UK sources

The questionnaire asked whether a UK Tier 2 supplier has been or will be switched for a non-UK supplier of the same product. 19 companies reported 26 cases – as examples – of such supplier switches. As shown in **Table 7**, in most cases alternative Tier 2 suppliers have been identified in LCCs such as Eastern Europe, Turkey and China mainly due to cost reasons. More than half of the 26 cases are in metal pressing/forging, aluminium casting, plastic moulding, and tooling. Most are recent cases in 2006 and 07. It should be noted that these cases are not exhaustive but just examples. Besides these examples, the on-site interviews found more cases where LCC sourcing is under consideration.

Table 7: Supplier switch from UK Tier 2 to non-UK Tier 2

Regions of alternative suppliers	Number of cases reported
East Europe	9
West Europe	5
Turkey	3
China	4
India	1
Japan	3
Others	1

Reasons for supplier switch		%
Poorer performance of UK suppliers	Quality	26%
	Cost	74%
	Delivery	26%
	R&D	11%
Business closure		16%
Centralised procurement		5%
£ appreciation		5%
Customer request		21%

2.3.3 Unsuccessful efforts to identify UK suppliers

The questionnaire also asked whether Japanese Tier 1 companies had failed to identify a UK Tier 2 supplier in spite of their desire to procure parts locally. 16 companies reported 25 cases – as examples – of such unsuccessful efforts to identify UK suppliers, and the alternative sources used instead. As shown in **Table 8**, in three quarters of these cases, Japanese Tier 1 suppliers were able to find candidates in the UK, but not ones which met their full requirements, particularly in terms of cost. Again most of 25 cases were in metal pressing/forging/machining, aluminium casting, plastic moulding, and tooling. Many of these cases happened at the earlier stage of their operations in the UK, unlike the previous section which reflects more recent trends in switching away from existing UK suppliers. At that time LCC suppliers were not so competitive, and the solution was to import from Japan or Western Europe.

Table 8: Unsuccessful efforts to identify UK Tier 2 suppliers

Regions of alternative suppliers	Number of cases reported
East Europe	3
West Europe	7
China	1
Japan	9
Others	5

Reasons	%
Unable to find candidates in UK	25%
Found candidates in UK, but they did not meet the requirements.	75%

2.4 Assessment of the UK supply chain by the 41 companies

While there were many successful supplier relationships identified, Japanese Tier 1 companies' overall assessment of the UK supply chain performance was not positive as it was for competitors, as analysed in this section.

2.4.1 Comparison of Tier 2 suppliers' performance by location

The questionnaire asked Japanese Tier 1 companies to evaluate the performance of their Tier 2 suppliers in different regions, by benchmarking to equivalent suppliers in Japan using the following indices:

1: Outstanding
2: Above requirement
3: Satisfactory
4: Not up to requirement
5: Unacceptable

As shown in **Table 9**, the performance of non-Japanese UK Tier 2 suppliers was rated as less satisfactory in various aspects: quality, cost, and design. In the on-site interviews, cost and speed of new product delivery were most frequently highlighted.

On cost, one company explained in the on-site interview that in evaluating new suppliers for steel brackets, they found twice the cost difference between UK local suppliers and imports from Japan. Cost alone does not decide everything. In fact, the MD of this particular case explained that since he did not want to be bothered by exchange rate, he wished to use UK local suppliers even if they were slightly more expensive. Also another MD said

that the management attitude of Tier 2 suppliers could outweigh higher cost in choosing Tier 2 suppliers. Twice the cost difference, however, would be big enough to prevail over such considerations. This particular example might be an extreme case, but the on-site interviews found many cases where using local UK suppliers was considered more costly than imports or in-house production.

On delivery speed, many MDs pointed out that as VMs increasingly required speed-up of new product development, they had been forced to source more from Japan since many UK Tier 2 suppliers were unable to respond to design changes quickly enough. The on-site interviews suggested that this was partly due to an insufficient tooling industry base in the UK.

Table 9: Assessment of Tier 2 suppliers' performance

	UK (Japanese)	UK (non-Japanese)	EU	Asia
Overall	2.7	3.0	2.8	2.6
Quality	2.6	3.0	2.9	2.8
Cost	2.9	3.1	3.1	2.5
Delivery	2.8	2.8	2.9	2.8
Design, development and research	2.5	3.1	3.0	2.7

2.4.2 Strong and weak areas of the UK supply chain

The questionnaire also asked Japanese Tier 1 companies to choose strong and weak areas of the UK supply chain in respect of various product groups. **Table 10** indicates the numbers of companies that checked each product category as either strong or weak.

Table 10: Strong and weak areas of UK supply chain (by numbers of Japanese Tier 1 companies that replied)

		Strong	Weak
Raw materials	Metal	8	10
	Plastic	10	8
	Chemical	10	2
Metal products	Pressing	9	12
	Casting	6	9
	Forging	4	10
	Welding	5	4
Plastic products		12	5
Rubber products		6	8
Machinery components		7	6
Electronics components		4	10
Electric components		4	7
Manufacturing equipment	Facilities	6	9
	Tooling	9	15

While extra caution is again necessary in making generalisations due to the limited numbers of replies, the broad picture can be summarised as follows:

- Strong area: plastic products
- Weak area: metal products, electronics and electric components, manufacturing facilities and tooling.
- Mixed assessment: raw materials, rubber products, machinery components (e.g. pumps, compressors)

In the on-site interviews, business closures or shifts to LCCs of UK Tier 2 suppliers in such sub-sectors as metal and plastic products and tooling were repeatedly mentioned. Although difficult to quantify, the UK supplier base in these sub-sectors seems to be eroding to a certain extent in spite of their important presence in the UK supply chain as identified in **Fig.8**.

2.4.3 Main factors in the less satisfactory performance of UK suppliers

The on-site interviews attempted to identify the main factors behind the less satisfactory overall performance of UK Tier 2 suppliers. In this regard, MDs most frequently raised perceived management shortcomings in UK Tier 2 suppliers such as:

- Short-term views that prevented long-term investment in new technologies[9]
- Insufficient commitment to Kaizen (continuous improvement) and cost-down activities
- Lack of a customer satisfaction culture
- Communication gaps between top management, middle management and the shop floor
- Lack of awareness of fierce global competition
- Reactive attitude, complacent with the status-quo and unwillingness to learn something new
- Business practice used by some UK Tier 2 suppliers of offering a low price at first, but then raising it in the middle of production, sometimes with a delivery-stop threat

It should be noted that many MDs of Japanese Tier 1 companies in the UK have manufacturing experience in other parts of the world, and therefore are in a good position to make comparison like this.

2.4.4 The UK Government's support measures for supply chain improvement

The questionnaire asked what kind of support Japanese Tier 1 companies would like the UK Government to provide to strengthen their supply chain. As indicated in **Table 11**, three quarters of the 41 companies mentioned the need for UK Government support for supplier identification as well as development. Although not touched upon in the questionnaire, some MDs highlighted their difficulties in accessing relevant organizations in LCCs for supplier identification, and expressed the need for contact information on ministries, chamber of commerce, trade associations, etc. in LCCs.

9 For example, technologies such as transfer pressing, 3D-CAD and Hatabur (horizontal) forging for steel parts, and two-shot (two-colour) and metal-insert moulding for plastic parts were mentioned in the on-site interviews as areas in which UK Tier 2 suppliers needed to invest to remain competitive in the automotive supply chain.

In the on-site interviews, many MDs acknowledged that their supplier search was far from comprehensive due to their limited resources and needed to be improved. They hoped that any support measure for supplier identification would cover not only UK suppliers but also LCC suppliers.

Table 11: Need for public support for supplier identification and development

No need for further public support		24%
Support for finding suppliers	Information provision (ex. database)	41%
	Networking among Japanese suppliers in UK	29%
	Exhibition events	10%
	Consultancy	2%
Financial support for supplier capability development	Manufacturing process	34%
	Logistics	17%
	New product development	10%
	Communication	7%

NB: Companies were asked to choose one or multiple items from the above options. The above percentages indicate ratios of companies that checked each item.

The questionnaire also asked to what extent Japanese Tier 1 companies knew and had used supply chain related public support measures[10]. **Table 12** suggests that some of these activities need to be better known by Japanese Tier 1 suppliers.

Table 12: Knowledge and usage of public support measures

	Do you know?	Have you used?
RDA support measures related to supply chain	Yes 27% / No 68%	Yes 20% / No 76%
IF (Industry Forum)	Yes 71% / No 24%	Yes 37% / No 59%
Supply Chain Groups programme	Yes 17% / No 78%	Yes 10% / No 85%
Automotive Academy	Yes 59% / No 37%	Yes 27% / No 66%
Manufacturing Advisory Service	Yes 39% / No 56%	Yes 12% / No 80%

2.5 Overall operational experience in the UK

While this project focused on supply chain issues in both the questionnaire and on-site interviews, it also looked into overall operational experience in the UK of Japanese Tier 1 companies. Through this part of study, it was further emphasised that they are most concerned about "people" issues (workforce, middle management, etc.).

10 While the SMMT Industry Forum is no longer directly funded by Government, it was included in this particular question due to its history of public sector support and JAMA's engagement, and its continuing major involvement in Government funded programmes.

A similar questionnaire-based survey of Japanese auto-parts manufacturers – a general survey without a particular focus on supply chain matters – had been conducted by then-DTI ten years ago. In order to enable comparison, this project repeated the same questions as the previous survey concerning operational experience in the UK. Again the questionnaire asked companies to benchmark against their Japanese parent companies using the following indices:

1: Outstanding
2: Above requirement
3: Satisfactory
4: Not up to requirement
5: Unacceptable

Comparison with the results of 1997 survey raises some points of concern. As shown by **Table 13**, assessments on various aspects of workforce performance are on such a comparative basis notably less favourable than a decade ago. So are assessments on other cost factors such as raw materials, infrastructure, and energy supply. While these results do not necessarily mean that the UK business environment has been deteriorating (i.e. it could be the case that the UK has improved but Japan has more), this comparison with a decade ago deserves particular attention. On the other hand, improvements were shown in assessments of productivity and availability of engineering expertise.

Table 13: Assessment of overall operational experience in the UK

			2007	1997
Workforce	Overall		3.17	3.05
	– Wage level		3.26	2.95
	– Overhead social cost		3.38	2.85
	– Flexibility		3.24	2.80
	– Reliability			
	– Basic skills		3.28	3.23
	– Absenteeism		3.26	3.23
	– Turnover		3.10	2.45
Productivity	– Labour productivity		3.38	3.50
	– Overall plant productivity		3.34	3.70
Engineering expertise	– Engineering skills		3.17	3.35
	– Availability of engineers		3.27	3.70
	– Engineering expertise at univ.		3.17	2.37
	– Accessibility of univ's faculty		3.20	N.A.
Profitability			3.68	3.60
Background factors	– Raw materials	– Cost	3.37	2.68
		– Quality	3.08	2.95
	– Infrastructure (road, rail & air)	– Cost	3.23	2.85
		– Quality	3.03	2.60
	– Energy supply	– Cost	3.77	2.90
		– Reliability	3.01	2.90

The above assessment coincides with the emphases which many MDs made in the on-site interviews.

- Human resource issues were most frequently raised by the MDs.
  - On shop-floor workers, MDs were typically concerned about standards of behaviour, such as the approach to cleanliness in the workplace, and inflexible labour practices (in particular linked to trade union attitudes). Many of them also pointed out the need to improve education and vocational training, which some MDs believed did not match with their needs. The assessment of labour productivity was mixed. Some benchmarked better, and others worse in comparison with their sister companies in other parts of the world. Many MDs appreciated the diligence of Eastern European workers in their UK operations.
  - Weaknesses in top and middle management (lack of a strategic view, communication gap with shop floor, etc.) were also often raised in the on-site interviews.
  - To a lesser extent, lack of engineers seemed to be an issue for some companies.

- So were pension liabilities, in particular for those companies with a longer operational history in the UK.

- UK sterling currency exchange rate risks (particularly £ vs. euro) were also pointed out frequently, even though MDs recognized that there was little possibility of the UK joining the euro in the near future.
- High infrastructure costs, such as high energy costs and the high price of land, were another operational difficulty for Japanese Tier 1 companies. Some MDs complained about not only the cost of power but also its unstable supply, which was frequently the cause of significant operational disruption.

2.6 Factors affecting investment decisions

The questionnaire also asked what factors were considered as essential in deciding on overseas manufacturing investment. As seen below, "workforce (quality and cost)" was ranked at the top by a large margin. "Workforce (flexibility)" also came as the fourth most important factor. These results suggest that initiatives aimed at workforce improvement should be the top priority for the UK Government to continue to attract inward investment.

- Workforce (quality and cost): 80%
- Proximity to customers: 51%
- Infrastructure (road, rail, & air): 49%
- Workforce (flexibility): 41%
- Government financial incentives for investment: 39%
- Investment request from customers: 39%
- Education and availability of engineering: 29%
- Strength of supply chain: 24%
- Energy supply: 22%
- Language: 17%
- Corporate tax system: 15%
- Exchange rate risk: 12%
- Macro-economics stability: 7%
- Regulations (health & safety, environment): 7%
- Accessibility of universities or other research institutes: 0%

NB: Companies were asked to choose the five important factors among the above options. The above percentages indicate ratios of companies that checked each item.

2.7 Request for UK Government support

Reflecting the above key factors in investment decisions, the areas highlighted for UK Government support were particularly related to human resources. As shown below, "workforce development" and "middle-management development" are the top two requests for public support. In the on-site interviews, a few MDs stressed the importance of the UK Government supporting Japanese VMs, rather than Tier 1s themselves, since their operations were totally dependent on the VMs.

- Workforce development: 51%
- Middle-management development: 41%
- Investment: 32%
- Supplier development: 27%
- Process improvement (manufacturing, logistics, etc.): 17%
- Procurement (joint or electric procurement, etc.): 15%
- Workforce recruitment: 12%
- Research and development: 10%
- New market or customer penetration: 7%
- Diversification: 2%

NB: Companies were asked to choose as many items among the above options as they liked. The above percentages indicate ratios of companies that checked each item.

2.8 Perceptions of the UK Government's commitment to manufacturing industry

Last but not least, in the on-site interviews many MDs expressed concern about the apparent 'lack of interest' of the UK Government in manufacturing industry even though the questionnaire did not touch upon this specifically. These MDs made this point in various contexts. Their comments included:

- In general, the UK Government's efforts in supporting manufacturing industry needed to be further developed and better promoted.
- The UK Government was supportive in attracting initial investment, but more needed to be done in respect of follow-up action thereafter.
- Activities providing support measures for the automotive industry seemed to have decreased.

- Compared with other European governments such as Germany, the UK Government's policy for manufacturing industry was less well developed.
- The future vision for manufacturing industry in the UK needed to be more strongly articulated by the UK Government.
- The importance of successful manufacturing operations as a basis for attracting R&D in line with the present UK Government focus needed to be better appreciated.

Apparently, this perception, which is wide-spread in their Japanese parent companies, sometimes makes it more difficult for MDs to justify additional investment in the UK.

3. Findings from the three Japanese VMs

The trend to increased sourcing out of the UK was even more evident for the three Japanese VMs: Honda, Nissan and Toyota. Again management capabilities, the UK Government's perceived lack of interest in manufacturing industry and the image of manufacturing industry were identified as issues. This section summarises such findings from the survey of the three VMs.

3.1 The three VMs' procurement structures

The procurement structures of the three VMs' UK operations[11] significantly differ, reflecting their LCC sourcing policies, in-house production capabilities, alliances with other VMs, type of vehicles (global model vs. European model) etc. Percentages of UK local procurement within their total procurement of UK operations vary approximately from 30% to 60% among the three VMs. Within UK local procurement, two VMs procure more from non-Japanese UK Tier 1 suppliers than from Japanese UK Tier 1 suppliers, whereas for one VM the opposite is the case.

What is common for all three VMs, however, is that procurement from non-Japanese UK Tier 1 suppliers has decreased in the past few years and will continue to decrease in the future[12]. All three VMs have been increasingly sourcing away from the UK to LCCs in respect of various parts such as plastic mouldings, steel pressings, castings and machining, electronics and electric components and tooling. The LCCs from which the three VMs are currently sourcing include Eastern Europe, Turkey, India, Thailand, and China. The three VMs recognise that the supplier base in these LCCs is now maturing or developing rapidly. One of the three VMs expects a decrease in procurement even from Japanese suppliers in the UK and all suppliers in the EU continent in response to a significant increase in sourcing from Asian LCCs.

11 Honda, Nissan and Toyota all deal with procurement on EU-wide basis, including for their other European and Turkish operations. Nonetheless, the three VMs kindly provided then DTI with their UK-specific information through the questionnaire and interviews.

12 These trends in procurement indicate changes in percentage within total procurement, not in actual amount of procurement.

3.2 Assessment of Tier 1 suppliers' performance

A QCD assessment of their current Tier 1 suppliers does not significantly differ among UK suppliers (Japanese vs. non-Japanese), European suppliers and Asian suppliers. This is obviously because only high-performers can become and remain Tier 1 suppliers of the three VMs and because even if some Tier 1 suppliers fail to meet VMs' requirements at any point in time, the number of such suppliers is extremely limited. Nonetheless it should be noted that two of the three VMs' supplier development programmes (focusing on remedial measures in the case of unsatisfactory performance) have been largely extended to non-Japanese UK Tier 1 suppliers[13]. There is clear recognition among the three VMs that the UK local supply chain is getting less competitive in comparison with other regions.

In generally assessing UK supply chain capabilities, two of the three VMs considered:

- Weak areas: rubber products, electronics and electric components, manufacturing facilities and tooling.
- Mixed assessment: raw materials, metal work, and plastic moulding.

One VM drew attention to their recent experience of a weakening trend in plastic moulding and steel pressing as a major concern in the UK supply chain. Another VM believed that in overall terms the UK supply base only remained particularly strong for final assembly, and that suppliers of components and raw materials though technically capable had lost cost competitiveness.

This pattern is also reflected in the fact that, in addition to the less satisfactory performance of UK Tier 1 suppliers, business closures have sometimes accelerated the three VMs' sourcing away from the UK. Out of 18 cases of supplier switch from UK Tier 1s which one VM provided, seven cases were due to site closures of the UK Tier 1 suppliers.

3.3 The three VMs' views on how the UK supply chain could be improved

All three emphasized the need to improve the management capability of UK Tier 1 suppliers. In comparison with Tier 1 suppliers in other regions, the following relative weaknesses were mentioned with regard to UK Tier 1 suppliers' management:

13 In case of Japanese Tier 1 companies in the UK, the three VMs expect their parent companies to take such remedial measures as necessary. But one of the VMs pointed out the lack of support from Japanese Tier 1s' parent companies.

- Short-term view, lack of strategic thinking
- Unwillingness to learn something new
- Insufficient grasp of shop floor situation
- Lack of skills for financing and business restructuring
- Tension between Japanese and non-Japanese management
- Not accustomed to multi-cultural environment
- Lack of proactive attitudes in considering further LCC sourcing

In order for the UK Government to assist in strengthening the UK supply chain, they believed that the following activities/issues should be given further consideration:

- In the short term, support measures needed to be realigned to focus more on management issues. A clear plan for improvement of UK manufacturing management should be established in a cross-sectoral manner.
- The UK Government should support Tier 1 suppliers that endeavoured to develop capabilities of Tier 2 and Tier 3 suppliers. Manufacturing best practices should be transferred in a timely manner, and training courses and consultancy services should be provided.
- Within the UK supply chain, LCCs should be perceived as an opportunity (low cost Tier 2 suppliers) rather than a threat.
- The menu of support measures should be simplified.
- More fundamentally, in the long run, the profile of manufacturing industry and engineers had to be raised in the UK through increased policy attention to this sector by the UK Government, and correcting the widespread perception of a lack of interest in manufacturing industry. The engineering profession needed to be respected and encouraged, and education was the key for this purpose. A comparative study of the approach in other European countries, in particular Germany, could be usefully carried out.

It should be noted that as with the Japanese Tier 1 suppliers, there is a strong desire among the three VMs for the UK Government to be more vocal in its support of manufacturing industry.

4. Conclusions

A strong local supply chain is essential to retain and increase VMs' investment in the UK. Given the lower cost (transportation, inventory, etc), shorter lead-time of parts supply and ease of QC (quality controls), the closer the suppliers are located, the better it is for the VMs' operations. However, Japanese VMs in the UK are having to increase LCC sourcing due to their inability to identify sufficient UK suppliers capable of meeting their requirements. Some of this is an inevitable consequence of global trends, in other cases not. It is not only about simple cost, i.e. price of components, but also about total cost competitiveness, which includes the effects of quality, delivery, flexibility of service, responsiveness to changing customer requirements, design capability etc. As indicated above UK suppliers have some natural locational advantages in this respect, as well as the scope for increasing value added.

In the long run, as VMs deepen LCC sourcing, there is a risk that new model production may also move to LCCs. Even though this project only focused on Japanese automotive companies in the UK, this risk is probably more generic and could well exist in non-Japanese VMs as well.

To address this, further actions need to be taken to strengthen the UK local supply chain, bearing in mind that LCCs offer both threats and opportunities for UK suppliers. On the basis of the findings of this project, the following Action Plans have been formulated from discussions within the UK Government as well as with some external stakeholders.

The first two issues will feed into strategic reviews to develop the appropriate longer term responses. For the remainder, early actions are now being taken.

Issue 1: Ensuring world class supply chains

Government is launching a New Automotive Innovation and Growth Team bringing together senior public and private representatives to develop a strategy for the sustained success of the automotive industry in the UK over the next 15 to 20 years. Its terms of reference will include taking account of the evidence gathered in this report.

In addition, the national Supply Chain Groups (SCG) programme, aiming largely at process improvement through lean manufacturing and jointly funded by BERR and RDAs, came to an end in March 2008. This focused on groups of at least 8 companies in projects led by VMs or Tier 1s, and has had a significant impact on the efficiency of those supply chains, which invariably spread across many regions of the UK, as well as on the competitiveness of individual companies involved. Over its 5 year life the programme supported 62 projects, involving 575 suppliers employing 160,000 people, and facilitated major productivity improvements of up to 40%. A number of RDA supported schemes on similar principles are ongoing within some individual regions.

The NAIGT provides an opportunity to review the lessons of this programme, and additionally take account of the wider issues identified in this report as well as to consider the needs of specific sub-sectors where this project has identified strong opportunities for further local procurement, i.e. metal pressing, plastic moulding, aluminium and iron casting, metal forging, machining and tooling. The initial SCG programme applied to other sectors beyond automotive, in particular aerospace. Similarly any conclusions of this review can also be expected to have relevance to other manufacturing sectors.

Action: The New Automotive Innovation and Growth Team (NAIGT), as part of its wider strategic review of the challenges facing the industry in the future, to examine and make recommendations to Government on the response required by March 2009.

The NAIGT will engage key stakeholders from industry (and through a separate parallel Communications Group involving other Government Departments) produce a comprehensive report that contains a series of recommendations and an action plan aimed at ensuring an automotive industry that:

- continues to develop in the UK and adopts world class innovation; protects jobs; promotes growth; and encourages overall prosperity in the UK;
- anticipates, develops, adopts and embraces technological changes in response to a range of societal, technological, environmental, economic, political and infrastructural drivers, so as to inform and influence policy making in the future; and
- retains its international competitiveness by attracting internationally mobile investment; and that global issues such as low cost sourcing and new market opportunities

are fully taken into account in development of the UK national strategy.

Issue 2: The image of manufacturing

There is a strong desire for the UK Government to be more vocal in its support of manufacturing industry. In on-site interviews, many companies expressed concern about the extent of the UK Government's commitment to manufacturing industry, and the need to do more to correct the perception of a lack of emphasis on manufacturing, which could affect parent company attitudes to additional investment in the UK. The three VMs also consider that the profile of both manufacturing and engineers needs to be raised in the UK through increased policy attention by the UK Government to this sector. The strong message was that this was the single most important step to improving both workforce skills and management capability in UK manufacturing industry.

Action: The forthcoming revised Manufacturing Strategy will refresh the Government's strategy to establish and maintain a business environment that supports world-leading manufacturing and global value chains. The findings of this report will form part of the evidence base.

Issue 3: Management capability of UK suppliers

Skills availability at all levels were the major concern of the companies interviewed. All three VMs and many of the 41 Japanese Tier 1 companies emphasized in particular the importance of improving the management capability of UK suppliers to address the root causes of their less satisfactory performance. About half of Japanese Tier 1 companies even requested UK Government support for their own middle-management development.

Management capability should therefore be given a greater focus in existing policy instruments for assisting supply chain improvement, such as Industry Forum (IF) and National Skills Academy for Manufacturing (NSAM), which all have mainly dealt with shop floor efficiency to date. This is a key factor in ensuring sustainability of improvement.

Action: More focus on management capability in supply chain improvement programmes.

BERR is working with the National Skills Academy for Manufacturing and SMMT Industry Forum to develop a new approach which will use the focus of supply chain improvement programmes to enhance leadership and management skills, in addition to the previous emphasis on process improvement. BERR

is consulting the three Japanese VMs on proposals for pilot demonstration projects to begin by June 2008 which will aim to deliver NVQ level 3/4 leadership and management and MBA equivalent training. The National Skills Academy for Manufacturing is one of the Government's flagship sector skills academies and will apply the learning from such pilots to other sectors across its manufacturing footprint leading to business improvements through better quality, cost and delivery performance across the supply chain.

Issue 4: Supplier identification

Unlike VMs, Tier 1 suppliers' efforts to find suitable Tier 2 suppliers have been far from comprehensive due to their more limited resources. It was clear that some companies were simply unaware of capable UK Tier 2 suppliers that others have been using and had assumed there was no UK capability. The need to support their finding of UK suppliers was identified in this project.

It should be noted, however, that UK Tier 1 suppliers hope that such support would cover both UK and LCC Tier 2 suppliers. It would be unrealistic to consider that the overall trend to increased LCC sourcing could be reversed, and facilitating partnerships with LCC suppliers will in many cases be key to maintaining Tier 1 activity in the UK.

Action: Support for supplier identification by UK Tier 1 suppliers.

Three related responses - the development of a UK supplier database/finder service, targeted matching exercises and contact information in LCCs - are being taken by BERR with SMMT, RDAs and other partners.

- Database/finder service

  There are a number of existing efforts to provide information on suppliers in the UK. These include most recently at the national level SMMT's plans to establish an Automotive Supplier Finder service to help companies identify suppliers by drawing on and further developing their automotive database, which provides unrivalled coverage of the UK industry. RDAs also have contacts with and information on suppliers in individual regions. There is a need to consider how these organizations can best collaborate to make available the most effective service to the industry.

  Action: BERR will consider with SMMT and RDAs, how a comprehensive and user-friendly service for identifying potential UK suppliers can be most appropriately provided,

and ensure that any necessary arrangements for cooperation between these organizations and further publicity of the service are put in place. Discussions are currently in hand on how such a joint service could be potentially developed and marketed. This is being piloted now aiming to establish a critical mass of suppliers and original equipment manufacturers by the end of 2008.

- More targeted matching

  There is a mismatch between the opportunities mentioned by Tier 1 companies and anecdotal evidence from UK Tier 2/3 companies that a major issue affecting their competitiveness is the general decline in opportunities to supply UK Tier 1s. More specific research and consultation with the procurement managers of Tier 1s as a basis for brokerage of one-to-one partner searching and matching and "meet the buyer" events, has proved to be a practical and effective approach in the past.

  Action: BERR will assess if there is sufficient interest in such targeted matching activities in Japanese Tier 1s, and consider with RDAs and other partners the scope for undertaking such activities.

- Contact information in LCCs

  SMMT has plans to extend their supplier finding service to companies in Eastern Europe in a second phase, by working with trade association counterparts in those countries. This could also be extended to other LCCs in a similar way in due course. UKTI could also strengthen its role in this respect and make companies more aware of the key contacts, as well as the customised information service which it provides on all aspects of overseas markets.

  Action: BERR/UKTI will keep under review with SMMT the scope for a wider supplier identification database/service and the provision of relevant readily available contact information, such as on ministries, chamber of commerce, trade associations, inward investment agencies, etc., which can provide information on local suppliers/partners in LCCs.

Issue 5: Common operational issues of Japanese Tier 1 companies

Japanese Tier 1 companies face many common operational issues and therefore enhanced networking among them could be beneficial for sharing best practice in addressing such issues. Topics to be discussed could, for example, include absenteeism, on which some companies have found effective solutions whereas others are struggling in part due to cultural differences. Many of

Japanese Tier 1 companies also consider that such networking could be useful for identifying potential suppliers. There is currently a lack of an appropriate structure to facilitate this.

Action: Enhanced networking among Japanese Tier 1 companies.

BERR in association with JAMA and JAPIA, and supported by Advantage West Midlands (AWM), organized a first networking meeting in December 2007. Participants' feedback on the value of the event was very positive. BERR with its partners will build on this success in planning new and subsequent events as a forum for exchanging views and reviewing progress of Action Plans. A second themed meeting is envisaged for autumn 2008, which is likely to focus on UK R&D capability and the demonstration of the supplier finder service.

Issue 6: Seizing opportunities in LCCs

Internationalisation of UK suppliers' business needs to be supported more actively to help them seize opportunities in LCCs both as new markets and as centres for low cost production as part of their overall competitiveness strategies. This may be through direct exports in some cases, but in the automotive industry it more often requires some presence through direct investment or partnership with a local company. For example, as international VMs invest more in India, they increasingly hope to see their existing suppliers invest there as well. In this survey the VMs suggested that UK suppliers' efforts for exploring opportunities in LCCs need to be strengthened.

There are existing activities in place, for example a targeted UKTI/SMMT initiative focusing on Central and Eastern Europe to help UK-based Tier 2/3 suppliers take advantage of these opportunities, in addition to a tailored subsidised service (Overseas Market Introduction Service (OMIS)) which UKTI offers on all overseas markets for UK-based companies wishing to do business there. There is scope for better coordination of existing support agencies/activities to ensure greater impact in this regard, and for linking such targeted programmes with other supplier development activity focused on business improvement to ensure the maximum benefit for the UK supply chain.

Action: More coordinated and strengthened support for internationalization of UK suppliers.

These concerns have been brought to the attention of UKTI as it continues to develop its advice and actions to help UK companies internationalise and grow their business overseas. BERR Automotive Unit and UKTI have established a joint team which meets regularly to ensure coordination of the Government's

response to this issue and to explore potential additional actions. An early outcome has been the agreement for BERR, UKTI and SMMT to work together to raise the profile of UK capability in low-carbon and other advanced automotive technologies in the Indian market. This work will support the development of a new UK/India research, development and demonstration programme announced in Budget 2008.

BERR, UKTI and partners will as part of this exercise also consider how activities to help UK-based companies internationalise and to improve their business performance more generally could be better coordinated and mutually promoted to the benefit of UK supplier companies.

Issue 7: Lack of awareness of issues and support available

The findings of this project should be broadly disseminated to UK Tier 2/3 suppliers, so that they are encouraged to take necessary actions, including taking advantage of existing support, since the issues identified here are most relevant to them. It is also necessary to ensure that their perspective is fully taken into account in any responses. SMMT have a central role to play in this regard, but RDAs and other organisations interfacing with business will also be important conduits.

There is also a lack of awareness of most of the existing schemes to aid supplier improvement among Japanese Tier 1 companies, which can be expected to apply more widely across the sector at Tier 1 and possibly VM level. This is significant both in encouraging suppliers to take advantage of support on an individual basis and in setting up group programmes led by customer VMs or Tier 1s to improve the whole of the supply chain.

Opportunities offered by the UK as a R&D base also do not seem to be sufficiently recognized by Japanese Tier 1 companies. Only a few examples of Japanese Tier 1 companies carrying out collaborative R&D with UK universities came up in the survey.

Action: Awareness-raising of issues and support available.

BERR is working with SMMT and RDAs to raise awareness among UK Tier 2/3 suppliers of the key competitiveness issues, such as quality, cost, delivery performance and ability to innovate, identified in this report and to facilitate open dialogue on possible actions by using existing fora and organising seminars. The platform provided by a number of existing events and representative fora have already been used to highlight and get wider industry reaction to the issues raised in the report.

BERR is also working with RDAs for example through the National Automotive Group (which brings together representatives of the RDAs and Devolved Adminstrations to address common policy and operational issues affecting the sector) to raise awareness of the supply chain support already available, both through a targeted programme for Japanese Tier 1 companies and more generally, and with UKTI and RDAs to better promote UK R&D capability to Japanese companies. The first networking event in December 2007 provided an early opportunity to start this process.

Annex 1
List of companies that cooperated in this project

Three Japanese VMs:

Honda of the UK Manufacturing Ltd.
Nissan Europe SAS, Nissan Motor Manufacturing (UK) Ltd.
Toyota Motor Europe NV/SA, Toyota Motor Manufacturing (UK) Ltd.

41 Japanese automotive supply companies:

Aisin Europe Manufacturing (UK) Ltd.
Alps Electric (UK) Ltd.
Calsonic Kansei Europe plc.
Daido Metal Europe Ltd.
Denso Manufacturing Midlands Ltd.
Denso Manufacturing UK Ltd.
Denso Marston Ltd.
FCC (Europe) Ltd.
Futaba Industrial UK Ltd.
Hashimoto Limited
Hercunite Foundry Technology Ltd.
Hitachi Automotive Systems Europe Ltd.
Johnson Controls Automotive (UK) Ltd.
JTEKT Automotive UK Ltd.
Keihin Europe Ltd.
Koito Europe Ltd.
Koyo Bearings (Europe) Ltd.
Mitsui Components Europe Ltd.
Musashi Auto Parts UK Limited
Nichirin U.K. Ltd.
Nifco UK Limited
NP Automotive Coatings (Europe) Ltd.
NSK Bearings Europe Ltd.
NSK Steering Systems Europe Ltd.
Obara Corporation UK
Ogihara Europe Limited
Pilkington Automotive Ltd.

Piolax Ltd.
R-TEK Ltd.
Ryobi Aluminium Casting (UK), Limited
Sanko Gosei UK Ltd.
Shimizu Industry UK Ltd.
Takao Europe Manufacturing Ltd.
TRB Limited
TS TECH UK Ltd.
Tsubakimoto UK Ltd.
TT Assembly Systems (UK) Ltd.
UK-NSI Co. Ltd.
UYS Ltd.
UYT Limited
Yamada Europe Co., Ltd.

Annex 2
Statistical analysis on UK business environment

This annex provides some illustrative and preliminary analysis comparing the subjective assessment by Japanese Tier 1 companies, as shown in Table 13 of this report, with official national statistics over the past decade.

From national statistics of the UK (ONS ABI[14]) and Japan (Industrial Statistics[15]), three indices for each of VMs and parts manufacturers have been calculated;

- Labour productivity (value added divided by headcount)
- Labour cost (total salaries paid divided by headcount), and
- Cost of materials, goods, etc (normalized by using turnover)

Since the definitions of categories in statistics slightly differ between the UK and Japan, comparison of absolute vales is inappropriate. Instead, all three data have been indexed with the 1997 values as 100 to see the trends. This normalization enables better comparison with Table 13, which analyses difference between 1997 and 2007 in benchmarking UK operations against Japanese parent companies. Monetary values have been converted from nominal terms to real ones by using deflators[16]. While Table 13 of this report compares 1997 with 2007, comparable statistics are only available up to 2005.

The charts and analysis thereof in this annex need to be interpreted with care for the following reasons;

- As mentioned above, two national statistics are based on different definitions; for instance Japan's statistics for monetary values include VAT whereas the UK's do not.

14 For VMs, SIC 34.1 (manufacture of motor vehicles) has been used. For parts manufacturers, the total of SIC 34.2 (manufacture of bodies (coachwork) for motor vehicles), SIC 34.3 (manufacture of parts and accessories for motor vehicles and their engines), SIC 25.11 (manufacture of rubber tyres and tubes) and SIC 31.61 (manufacture of electrical equipment for engines and vehicles not elsewhere classified) has been calculated.

15 For VMs, Category 3011 (motor vehicles, including motorcycles) has been used. For parts manufacturers, the total of Category 3012 (motor vehicles bodies and trailers) and Category 3013 (motor vehicles parts and accessories) has been calculated.

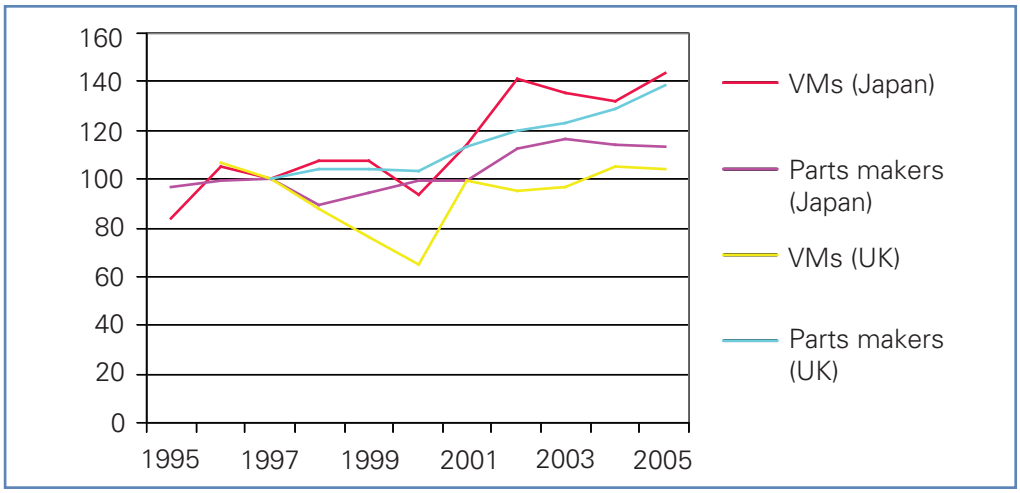
16 As UK and Japan's deflators, PPI for SIC 34.1 and Domestic Corporate Goods Price Index (Bank of Japan) for transportation equipment have been used respectively.

- Trends in the charts are affected by such other factors as changes in models of cars produced (i.e. the more high-end vehicles, the higher labour productivity) and changes in composition of labour from low to high skilled (i.e. the more high-skilled workers, the higher labour cost).
- Comparison of trends in the charts is dependent on the reference point and level of variables in the reference year; for example, if labour productivity happens to be at a very low level in a country in 1997, impressions will be that it shows faster growth than another country with a high starting level of labour productivity. Though no significant variance in 1997 data has been detected for three indices, overall shapes in the charts, including data before 1997, should be compared.

Labour productivity (value added divided by headcount)

As shown below, labour productivity of UK parts manufacturers continuously showed higher improvement rates from 1997 than Japanese parts manufacturers, and the difference of improvement rates between the two widened since 2003. This coincides with the result in Table 13; i.e. the assessment of Japanese Tier 1 companies on UK labour productivity is better in 2007 than in 1997, with benchmarking against Japan. UK's improvement can be partly attributed to restructuring of automotive parts industries in the UK during this period (1997 to 2005); total employment was reduced by 27% in the UK whereas it increased by 9% in Japan. It should be noted, however, that the opposite trend is detected for VMs; Japanese VMs consistently showed better improvement rates in labour productivity from 1997 than UK's VMs.

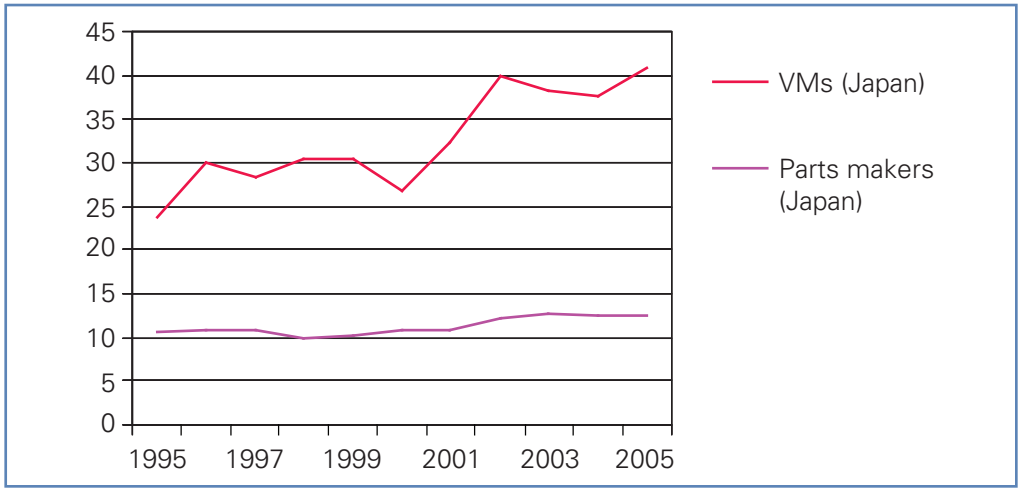
Labour productivity (real terms) (normalized with 1997 as 100)



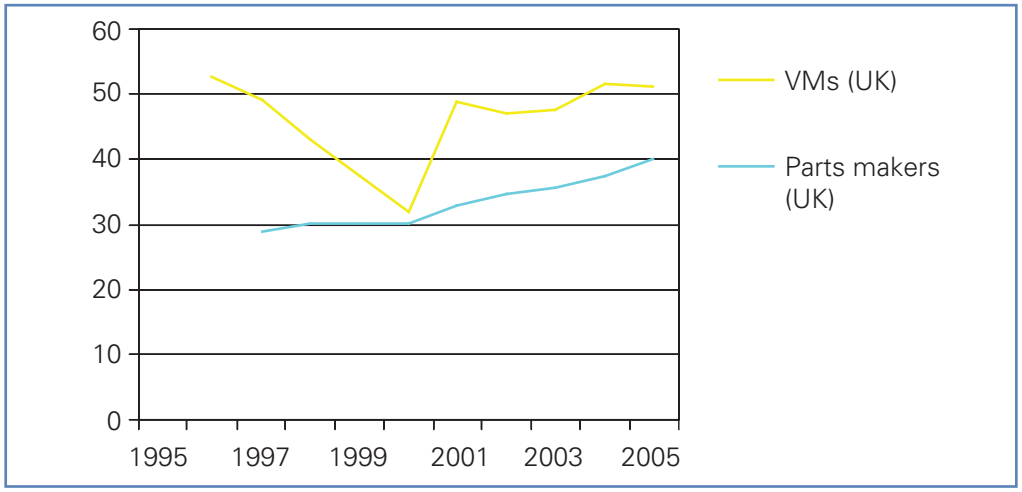
UK data: *ONS ABI data. Calculated by dividing "gross value added" by "total employment (average during the year)".*
Japan data: *Industrial Statistics. Calculated by dividing "value added" by "number of employees".*

It should be also noted that, as shown below, absolute values of labour productivity are much higher for VMs than for parts manufacturers; in 2005 the former was higher than the latter by 1.3 and 3.3 times in the UK and Japan respectively.

Labour productivity (Japan) (absolute real terms (million yen))



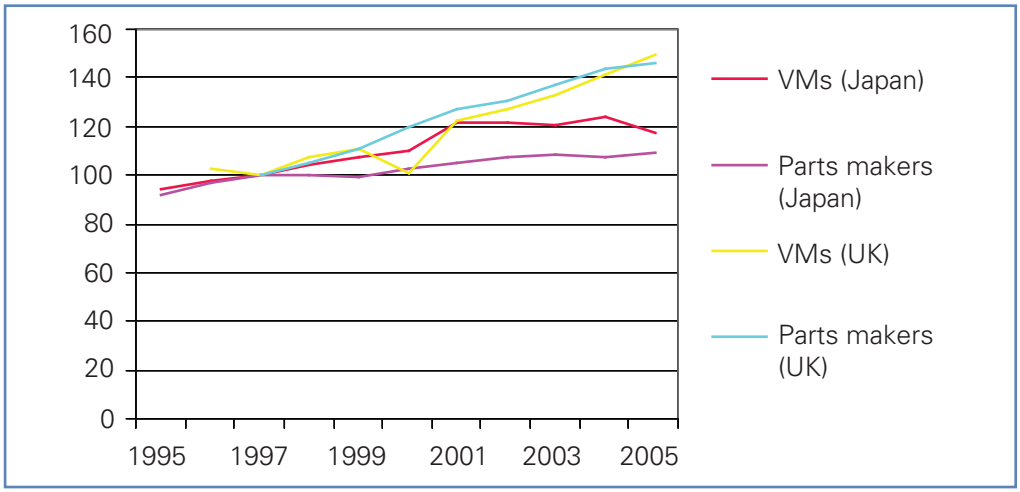
Labour productivity (UK) (absolute real terms (thousand £))



Labour cost (total salaries paid divided by headcount)

As illustrated below, trends of labour costs show a clear difference between the UK and Japan. Labour costs in the UK for both VMs and parts manufacturers almost consistently showed higher increase rates from 1997 than those in Japan. Difference in increase rates of labour costs between the UK and Japan is greater in parts manufacturers than in VMs. Again this coincides with the assessment of Japanese Tier 1 companies as shown in Table 13. Furthermore the UK sterling appreciated against the Japanese yen by 16% from 2005 to the timing of this survey, and this appreciation is also considered to have affected the cost assessment of Japanese Tier 1 suppliers.

Labour cost (real terms) (normalized with 1997 as 100)

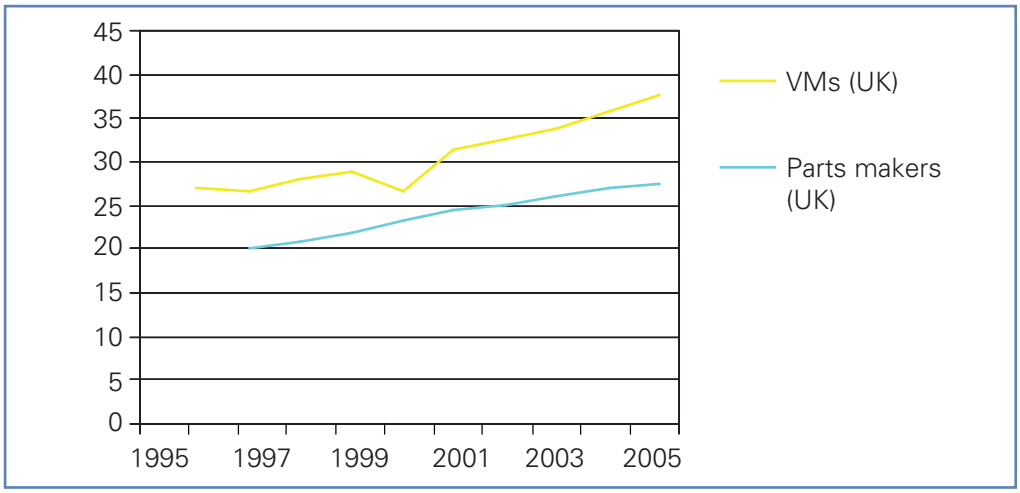


UK data: *ONS ABI data. Calculated by dividing "total employment costs" by "total employment (average during the year)".*
Japan data: *Industrial Statistics. Calculated by dividing "value of total cash wages and salaries" by "number of employees".*

Again, as shown below, absolute values of labour costs are higher for VMs than for parts manufacturers; in 2005 the former was higher than the latter by 1.4 times both in the UK and Japan.

Labour cost (Japan) (absolute real terms (million yen))

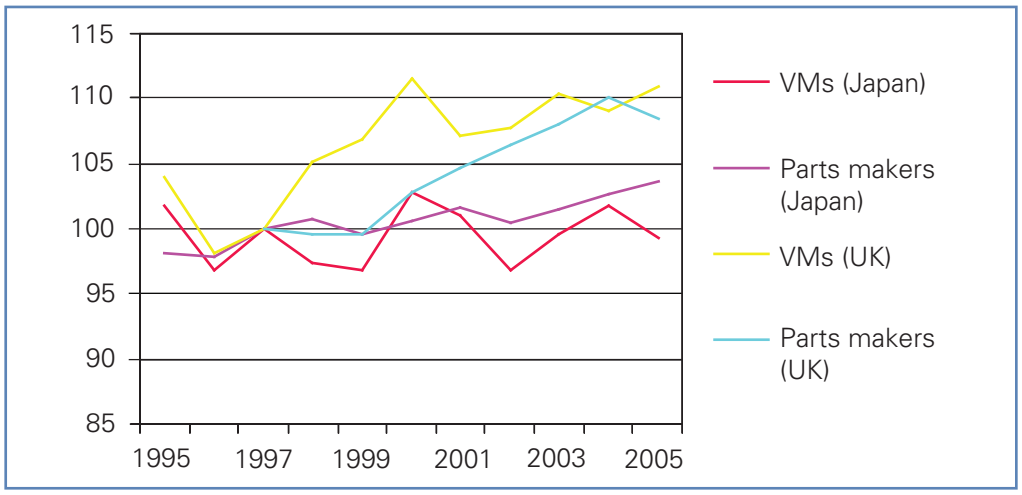
Labour cost (UK) (absolute real terms (thousand £))



Cost of materials, goods, etc (normalized by using turnover)

Costs of materials, goods, etc. have been normalized by dividing them with sales turnover to factor in fluctuation of production levels. As shown below, over the past decade, these costs in the UK increased at higher rates from 1997 than in Japan, which is also consistent with the assessment of Japanese Tier 1 companies in Table 13. Again the sterling appreciation from 2005 is considered to have affected the cost assessment of Japanese Tier 1 companies.

Cost of materials, goods, etc (normalized with 1997 as 100)



UK data: *ONS ABI data. Calculated by dividing "total purchases of goods, materials and services" by "total turnover".*

Japan data: *Industrial Statistics. Calculated by dividing "value of raw materials, fuels and electricity consumed, and subcontracting expenses for consigned production" by "value of manufactured goods shipments".*

Annex 3
Glossary

AIGT:	Automotive Innovation and Growth Team
AWM:	Advantage West Midlands
BERR:	Department for Business, Enterprise and Regulatory Reform
DTI:	Department of Trade and Industry
IF:	Industry Forum
JAMA:	Japan Automobile Manufacturers Association
JAPIA:	Japan Auto Parts Industries Association
LCCs :	Low Cost Countries
MAS:	Manufacturing Advisory Service
MDs:	Managing Directors
METI:	Ministry of Economy, Trade and Industry
NAIGT:	new Automotive Innovation and Growth Team
NSAM:	National Skills Academy for Manufacturing
OMIS:	Overseas Market Introduction Service
QC:	Quality Controls
QCD:	Quality, Cost and Delivery
RDAs:	Regional Development Agencies
SCG:	Supply Chain Groups programme
SMMT:	The Society of Motor Manufacturers and Traders Limited
STEM:	Science, Technology, Engineering and Mathematics Programme
UKTI:	UK Trade and Investment
VMs:	Vehicle Manufacturers

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