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RESHORING: OPPORTUNITIES AND LIMITS FOR MANUFACTURING IN THE UK – THE CASE OF THE AUTO SECTOR

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1. INTRODUCTION

In recent years, 'offshoring' and 'outsourcing' have transformed fundamentally nationally based auto sectors into global networks of design, production and distribution across the global value chains coordinated by the major automotive Original Equipment Manufacturers (OEMs). As manufacturing activities tended to be shifted to low-labour cost locations in Asia, Africa and Latin America, high-end design, R&D, product development have stayed anchored mostly to high-cost and high knowledge-intensive home economy locations (perhaps with the except of some design and styling activities which are often located in major end markets around the world).

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However, very recently the weaknesses of and risks inherent in such global value chains (GVCs) have been exposed, triggering attempts to rethink their nature and also raising possibilities to reshore some manufacturing activities to 'home' countries. A combination of a more competitive exchange rate (despite the very recent appreciation of sterling), increased transport costs, rising wages in key areas of China, and a greater awareness of supply chain resilience have all contributed to a perceived change in some business 'fundamentals'. The potential for some supply chain relocalisation also links in with the 'servitisation' of manufacturing including the auto sector and shift to a hybrid model where manufacturing and services are increasingly intertwined. However, there are limits as to how far this can go and these raise some important questions and issues over the possible role for industrial policy.

The paper traces 'reshoring' trends in manufacturing and in particular in the auto sector and explores what are the implications for the UK given the apparent desire of government to 'rebalance' its economy towards a more desirable coupling of manufacturing and services. The paper will proceed as follows. Section 2 presents some general recent trends on 'reshoring' comparing US and UK. Section 3 will 'drill down' into his phenomenon and explore the drivers behind reshoring and what bottlenecks or limits it faces in particular in the auto sector. Section 4 will conclude by discussing what lessons to be learnt from the UK case and by formulating some policy implications.

2. HOMEWARD BOUND?

'Offshoring' and 'outsourcing' have dominated much of the discourse on British manufacturing over the last decade, with many UK-based manufacturing firms shifting sourcing to low-labour cost locations such as China, with the latter running hefty trade surpluses with the UK. The two terms have often – albeit mistakably – been used interchangeably since the process of outsourcing has proceeded alongside that one of offshoring, i.e. the relocation of manufacturing tasks mostly to East Asia driven by cost-saving strategies. However, the two have quite different meanings. The disintegration of the production process in the post-Fordist era has been driven by efficiency gains related to external and agglomeration economies that required

nevertheless geographical proximity. This is evidenced by the huge literature on clusters and industrial districts that has developed since the 1990s (Becattini et al., 2009). The offshoring of outsourced manufacturing functions coincided with either the choice of cheaper suppliers located in lower labour cost countries or the shift of production activities to the same lower labour costs countries through foreign direct investment. Between the 1990s and 2000s, Asia, and China in particular, became the 'workshop of the world'.

However, in recent years this shift of activity overseas has cooled and there have been some tentative signs of 'reshoring', in certain sectors at least, as the factors which propelled such outward shifts, notably low labour costs, have been eroded. A number of other reasons also have contributed to change the perceived benefits of offshoring and have alternatively exposed its costs. Some of these costs are related to exchange rates uncertainty, volatile transportation costs, rising wages overseas not matched by equal rises in productivity, and inventory or supply rigidities associated with the physical distance across stages in the value chain. In addition this this, there has been greater awareness of the cost of supply chain disruptions. All this has contributed to a perceived change in some business 'fundamentals' as firms re-evaluate their cost calculations.

2.1. US Experience and Debates

The policy debate around reshoring has been especially lively in the US where a concert of opinion leaders has advocated for an explicit policy commitment to re-invigorate the US manufacturing sector. Here, the repatriation of manufacturing jobs has been driven by changes in the global economy, in particular in China, as well as by domestic pull factors (see Sirkin et al., 2011, 2012). On this, the attraction of offshoring has recently faded due to the erosion of some Asian economies' key location competitive advantages. These includerising wages in key areas of China where the differential between US and Chinese wages narrowed from 1/40 to 1/10 in 2012 (Dolega, 2012). In addition to this, the Renminbi is judged still to be undervalued and it is expected to appreciate eroding further China's cost advantage; at the same time, the US government policy of devaluing the dollar to ease exports is also favouring local production by domestically located firms. Companies could also be seeking the next cheap production location that may be shifting around Asia in Thailand, Vietnam and Cambodia.

The geographical reconfiguration of global value chains within Asia would be an option for firms if it was not for other crucial pull and push factors that are somewhat attracting activities back 'home' for some multinational firms. Indeed, transport costs have risen substantially in recent years due to higher energy costs, and more importantly firms are increasingly appreciating the pecuniary costs derived from the time lag in shipping, inventory costs and loss of flexibility. Overall, a Deloitte (2009) report suggests that the cost gap between US and China narrowed from 32% to 17%.

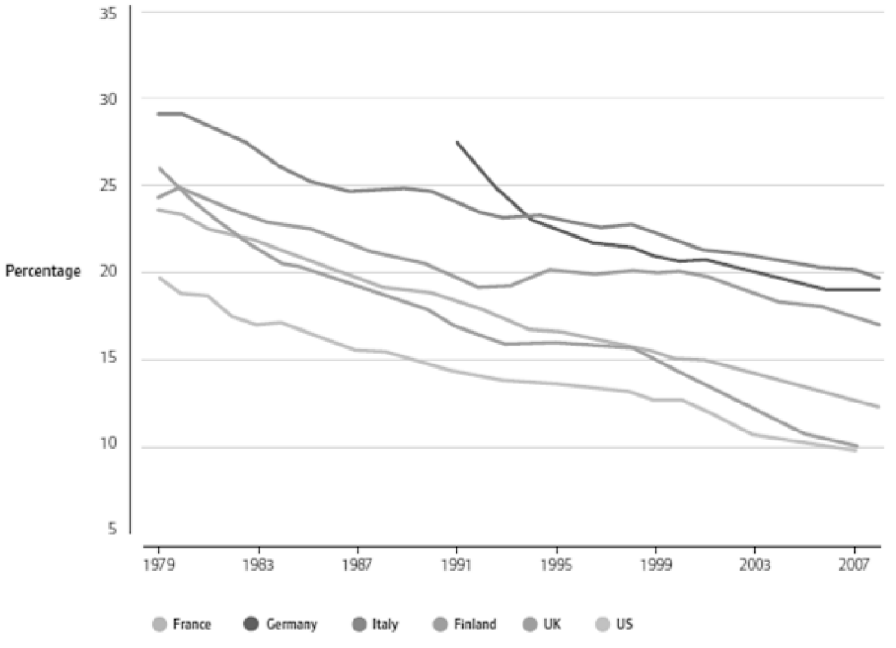
At the same time, the 2008 financial and economic recession has highlighted the difficulty of some advanced western economies in 'kick-starting' their economies in the presence of a very small tradable sector, namely manufacturing. The US government articulated a manufacturing friendly strategy that included tax relief and cheap energy that gave impetus to the pull factors attracting reshoring activities. These included the availability of US talent with a 30% wage reduction, better IP protection and quality control and short lead time along the value chain (ibid.).

The policy commitment to manufacturing in the wake of the economic crisis resonated well with the public perception that manufacturing is important: indeed a survey carried out by Deloitte-MI Report (2009) found that for 80% of respondents manufacturing was judged to be important to guarantee US living standards and economic prosperity; and two third therefore supported the position of the government of investing in it and taking a strategic approach towards it (ibid.). A recent report by the Boston Consulting Group (BCG, 2013) found that of the US companies surveyed, the proportion of them considering repatriation has grown from 37% in 2012 to 54% in 2013. The bold estimate is that by 2020, higher U.S. exports, combined with production work that will likely be reshored from China, could create 2.5 million to 5 million American factory and service jobs associated with increased manufacturing. Newspaper scouting is still a good way to find out what activities US firms are actually reshoring. Examples of this includes K'Nex, the toy manufacturer; Trellis Earth Products, makers of bioplastic goods such as bags and utensils; Handful, a bra manufacturer; General Electric, which moved manufacturing of washing machines, fridges and heaters from China to Kentucky; Google, which is making Nexus Q, a new media streamer, in San Jose and reshored from China and Mexico to Ohio and Michigan. These are just to mention few.

2.2. UK Experience and Debates

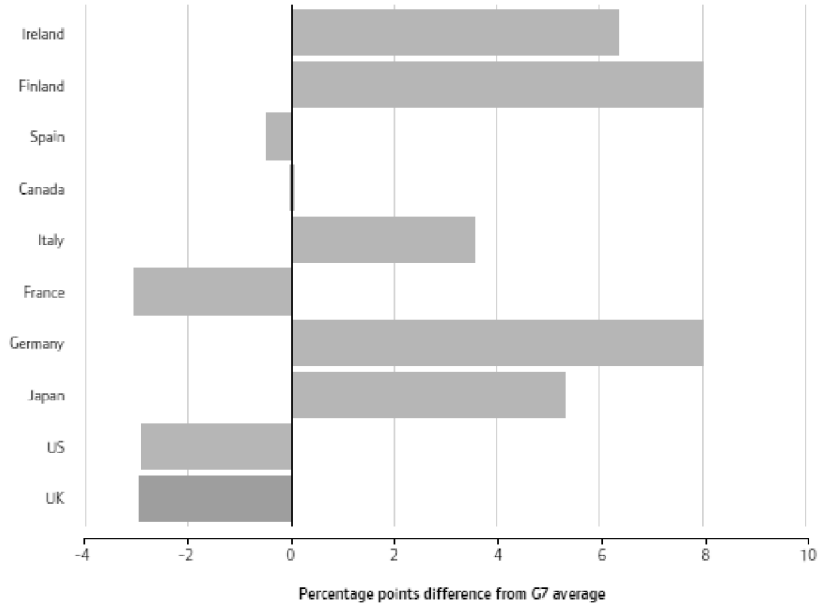
In the UK debate, the policy debate around manufacturing reshoring has been linked to the broader post-recession discourse on 'rebalancing the UK economy'. The term *rebalancing* here was meant in relation to an attempt to tackle the painful consequences on the 'manufacturing hollowing out' of the 1980s and 1990s and to increase the weight of the tradable sectors, namely manufacturing, in an economy dominated by services. This process is evidenced by the drop in manufacturing employment during the two decades that was worse for the UK than other European economies, especially Germany, Italy and Finland which maintained a share of manufacturing employment around 20% of total employment. Only the US experienced a contraction of manufacturing employment comparable to the UK. Equally UK and US – together with France – are the only advanced economies that have witnessed the erosion of manufacturing GVA contribution to the total economy. The unhealthy dominance of finance and retailing in the UK economy has been made worse by the fact that what is left in term of manufacturing sectors is foreign owned due to the passive sale of valuable chunks of the UK manufacturing base over the very same period.

Figure 1. Manufacturing Share of Total Employment



Source: OECD.

Figure 2. Manufacturing as a Share of GVA



Source: OECD.

The possibility of reshoring the sourcing of manufacturing production back in the UK presents appealing prospects for two orders of reasons. Firstly, it is perceived as a way of possibly addressing the issue of rebuilding some of the UK's fractured supply chains. Secondly, there is the associated hope that it could contribute to 're-populating' the UK's business 'underwood' with domestic small and medium sized firms in the manufacturing supply chain, in the past squeezed out by financialised large corporations. Indeed, both have been identified by researchers – such as those at the Centre for Research on Socio-Cultural Change (CRESC) – as a key weakness of the UK's manufacturing base. Froud et al. (2011), for example, note that in the UK's largely foreign owned branch assembly plants, broken supply chains effectively undermine high British content and limit domestic backward linkages.

The danger here, however, is that attempting to foster 'rebalancing' and manufacturing revival is superficially attractive but could simply mean more assembly in the UK, with increased spending on components and

other intermediate products then leaking abroad. In a recent paper, CRESC notes that in the case of JCB, where the British content of its diggers declined from 96% by value in 1979 to just 36% by 2010. Another example highlighted by CRESC is the case of Bombardier in the train industry; while arguing for a more sophisticated government procurement policy to support jobs at Bombardier jobs, it also stresses the effects of broken supply chains which limit the upstream national benefits of the firm's activities in the UK (Froud et al., 2011a).

Of course, increased international trade coordinated by multinational firms across borders has been a key feature of the 'deeper' form of globalisation witnessed in recent years, that has led to more sourcing of components by manufacturers across borders through foreign direct investment or outsourcing arrangements. The CRESC research is however especially interesting in highlighting that the trend of overseas sourcing from UK based firms has been especially pronounced. In British machinery and vehicles some 50% of intermediate purchases are imported as against just 30% in Germany where the propensity to import is much lower (Froud et al., 2011). The implication of this is that German supply chains are closer to home especially for the higher value added functions which are also the most costly. This suggests more effective control over the supply chain in relation to technology and quality, but more importantly the opportunity for domestic small and medium sized firms to constantly – albeit indirectly – connect globally. In contrast, the aggressive offshoring of large chunks of supply chains across UK manufacturing has caused deep fractures in supply chains.

More recently, however, given the changes in cost calculations noted earlier, British OEMs had begun to re-evaluate the nature of GVCs. For example, an Engineering Employers' Federation (EEF) survey found that even during the 2008-2009 recession some 60% of British firms had concerns over the vulnerabilities of overseas suppliers, as against 20% being concerned over domestic suppliers. Not surprisingly, around two thirds of firms had re-evaluated their supply chains to minimise such risks, with some bringing production back to the UK and other sourcing more components locally.

Yet more firms would 'buy British' if the components were available from local suppliers, and if end users and component suppliers could be 'matched up' in the UK, thereby offering the potential for some supply chain activity to be repatriated. Rebuilding supply chains locally can also offer customers greater flexibility and reliability in production. This issue of reliable delivery was highlighted in a 2007 EEF survey; high-technology firms in particular saw logistics as a key competitive strength, and the auto and electronics sectors saw this as increasingly important in the future (EEF, 2007). This should not be a surprise, as proximity often matters in just-in-time processes. A more recent EEF (2011) survey of 150 firms found that in the wake of recent supply chain disruptions, two fifths of companies were bringing some production back in house, and one quarter had increased their use of local suppliers.

The potential for some supply chain relocalisation also links in with the 'servitisation' of manufacturing and shift to a hybrid model where manufacturing and services are increasingly intertwined. As Merlin-Jones (2012) notes, many British manufacturers have been well placed to develop the sort of services and system solutions that end users are looking for, and this is one way in which they can differentiate themselves from rivals. This in turn could offer the prospect of such firms co-locating such activities so as to maximise the quality of offering to customers in the UK and Europe, giving 'onshorers' a potential competitive advantage.

3. THE AUTOMOTIVE GLOBAL VALUE CHIAN

3.1. Long-term Trends: Offshoring and Outsourcing

As noted, we have in fact seen a number of GVC trends – including offshoring and outsourcing – which have effectively combined to threaten established automotive production systems and GVCs such as that in the UK. Under the 'lean manufacturing' model OEMs have for some years demanded high 'QCD' (quality, cost and delivery) performance and have sought to deal with fewer suppliers to ease coordination costs in managing the supply chain (in effect passing these on to first tier suppliers). This longer-term outsourcing trend by OEMs was also illustrated by a number of OEMs spinning off their internal parts divisions as global players in

their own right (see Ford and GM with Delphi and Visteon respectively) from the late 1990s onwards (Sturgeon et al., 2008), although not without significant challenges. The overall effect has been to force suppliers to become 'world class', leading to a wave of consolidation similar to that for OEMs, with first tier suppliers taking on greater R&D roles (Bergner, 2000) and, in some cases, responsibility for whole systems (e.g., drives or steering), modules (e.g., interiors, 'front ends' or 'corners') or even assembly work. Such first tier suppliers in turn exert greater power over lower level suppliers (McIvor et al., 1998) as they themselves outsource a range of design and development functions. Thus a 'post-Japanisation' phase characterised as 'at supplier cost' has arguably emerged where innovative capability is required at all levels in the GVC (Wells and Rawlinson, 1994).

In addition, as noted above, the internationalisation of component sourcing by assemblers has accelerated. Thus, GKN, one of the largest suppliers based in the UK, had by the late 1990s shifted over 80% of its purchasing outside the UK (*Financial Times*, 24/6/99). Of course modularisation, and the outsourcing of bulky components, inevitably resulted in major first tier often suppliers setting up in geographic proximity to the vehicle makers. Thus the list of major suppliers was replicated in most automotive regions including where new assembly capacity was built such as in Central and Eastern Europe, China and India. However, component sourcing for these plants enabled low cost imports to Western Europe and actually changed the supply 'filière' (Lagendijk, 1997). Those local firms, for example in the UK,that concentrated on high volume, single material and single process parts were at particular risk in this scenario. As Larsson (2002) noted, first tier suppliers had little incentive to source components locally for the modules they prepare for the OEMs. Indeed, Sturgeon et al. (2008) highlighted that (first tier) suppliers with global operations were able to focus the production of high volume key components in a few locations and then transport these parts close to the OEMs' final assembly plants (which are located near to the end market). Here sub-systems and modules were completed for and moved to the proximate assembly plants of the OEMs.

A number of key points should be highlighted from these long term trends in the auto industry. Firstly, increasingly global sourcing, and a shift to lower wage cost locations, threatened established automotive 'clusters' such as that the West Midlands (during the 2000s the collapse of MG Rover

and the closure of the Peugeot plant in Coventry and the shift to smaller scale higher-value production was itself evidence of this). Secondly, even major firms were put under intense pressure given the rising costs of new model development, necessitating large scale production, platform sharing strategies and/or joint ventures in order to survive. Thirdly, at the local level, local production systems range from low-tech 'metal bashing' to high-tech composite materials, engines and environmental technologies, with a series of interlinked networks ranging from local supply to GVCs dominated by the big players with technological 'pipeline' connections to other connections. This is indicative of the broader nature of the auto industry; as Sturgeon et al. (2008) indicate, it "is clustered and dispersed, rooted and footloose. The industry can be usefully conceived of as a network of clusters" whilst recognising the significance of structures operating at the continental-scale region. In this connection, Yeon Kim and McCann (2008) argue that regions which benefit from the immigration of integrated supply-chain networks will tend to maintain their advantageous position over time, as such clustered systems will be less sensitive to factor price variations than standalone facilities in other locations. For such 'winning' regions, this is a positive development. However, on the downside, those regions which lose such supply-chain systems, as has been the case in recent decades in many parts of the US, UK and Australia, the prospects for redeveloping such systems via policy initiatives looked limited, until relatively recently at least.

3.2. Recent shifts – Towards Reshoring?

These longer terms trends left a UK automotive industry with fractured supply chains. Thus while the news in 2012 of GM's Ellesmere Port being 'saved' from closure after a landmark deal on flexibility and wages was welcome, it was reported that only 25% of the components going into the Astra cars assembled at Ellesmere Port actually came from the UK. This puts into stark view how fractured and weakened local supply chains have become as GM – like other assemblers – had shifted sourcing out of the UK. That needs to change if the UK is genuinely to engage in a process of 'rebalancing', and there is a degree of optimism that this could be possible if a more supportive policy regime is adopted. Under GM's latest plans for the plant, costs will be reduced by running three shifts a day, increasing output, more flexible working but also by sourcing more parts locally in the

UK – a very recent trend given higher transport costs making local sourcing a more competitive option. In fact, Ellesmere Port was seen as vulnerable to possible closure in part precisely because it had become dependent on sourcing a large proportion of components from mainland Europe and exports assembled cars back to the continent. As well as a major effort by workers and unions to work flexibly in order to save the plant, government support was also important, and the challenge for the future is to use that support so as to foster spillovers in terms of wider capacity building in the supply chain.

Of course, auto firms will still look to establish new production facilities overseas when they are expanding into new markets (such as Jaguar Land Rover expanding into the Indian and Chinese markets) but there appears to be less impetus to then import the goods produced back to the UK. In fact, repatriating activity – including some sourcing – to the UK is very much on the agenda, although the debate has yet to catch up with that in the United States where it has become a major policy issue (*Financial Times*, 20 May 2012). In this sense the UK needs to consider how it can tailor an industrial policy focused on building manufacturing capacity, particularly in the supply chain.

In the last few years, there appears to be a real opportunity to rebuild some of the UK's fractured automotive supply chains given recent shifts in exchange rates, transport costs, rising wages overseas and heightened concerns over supply chain resilience. There have been a number of cases of auto supply chain firms winning back orders that had previously gone overseas. Furthermore, the 'resilience' issue has had particular resonance in the wake of the Japanese earthquake and tsunami. Toyota for example was much more dependent on Japan for car assembly and component sourcing, and fared less well in the wake of the disaster than Nissan which had shifted more production nearer to end markets and which had second-sourcing options through its tie-up with Renault. In the wake of the tragedy, Toyota has shifted more production to Europe, and in so doing has favoured the UK. However, there are severe limits as to how far this can go, particularly given issues over access to finance for smaller firms, and challenges in finding skilled workers, one of the key messages emerging is that this is not going to happen on a significant scale without a major policy effort, as has been recognised in the US.

On the latter, the current UK Coalition government has made a start through its £125 million Advanced Manufacturing Supply Chain Initiative (AMSCI) to help develop local suppliers around the UK's major manufacturers (including auto). The fund is aimed at supply chain companies and can be used for capital expenditure, skills and training, and R&D projects. The scheme aims to build on an earlier auto-focused Regional Growth Fund bid by several Local Enterprise Partnerships (LEPs). While a welcome start, the overall amount of funding on offer, £125 million, is limited, and due to the minimum project threshold value of £2 million, bids often need to be from several companies clustering together. Extending the scheme so that smaller firms can directly access the support available seems critical, especially when the lack of access to finance is a major issue for such firms.

Another interesting effort to reshore auto component sourcing is the work undertaken by the Automotive Council (the joint industry-Government partnership) to map the supply chain's relative competitiveness and to identify opportunities where capabilities can be retained and built upon, looking at manufacturers' sourcing 'wish lists', and where suppliers envisage growth. Its 2011 report (Holweg et al., 2011) identified over £1 billion worth of potential contracts which auto manufacturers would like to place in the UK. Building on such trends, the Society of Motor Manufacturers and Traders (SMMT) has tried to bring together assemblers and suppliers to see how they can be 'matched up'. The Automotive Council released a 2012 update which identified some £3 billion of new purchasing opportunities for the UK based supply chain (Automotive Council, 2012). As the Automotive Council found, the main reason why auto assemblers purchase in the UK is proximity (including lower logistics cost, the configuration of parts, and the support of UK-built vehicles). But quite what components suppliers consider as their competitive advantage, and whether that matches what assemblers think, is far less clear. More broadly, the work of the Council can be seen as a good example of how industrial policy can help firms and government together learn about underlying costs and opportunities and engage in strategic coordination. Such activities could usefully be extended, both in the auto case and to other industries (think of the Marine Industries Leadership Council, the Industrial Biotechnology Leadership Forum or the Aerospace Business Leaders group), with such groups helping to identify key fractures in industry supply chains and how to address them.

This is no longer about industrial policy 'picking winners' but helping the private sector identify weaknesses and then addressing them, and ties in with perspectives on industrial policy as a *process* of discovery requiring strategic collaboration between the private sector and the state in unlocking growth opportunities (see Rodrik, 2008). Under this approach, industrial and regional policies which facilitate this process of discovery through strategic collaboration are seen as relevant and require appropriate institutions to engender this. However, in this regard, there is a noted institutional and capacity failure at the national level in England through the lack of resources to design industrial policy interventions (see Froud et al., 2011b, p. 20). Most recently, given the capacity constraints of many Local Enterprise Partnerships (LEPs) outside of major UK cities, there would therefore appear to be a role for an intermediate tier in terms of industrial and regional policy development (see IPPR and Northern Economic Futures Commission, 2012). Similarly, Aiginger (2007) characterises 'systemic industrial policy' as that which "goes beyond combating market failures. It acknowledges limited knowledge of policy makers, mutual learning and co-operation between firms, institutions and government" (Aiginger, 2007: 297). In this sense, commonly adopted definitions of industrial policy may be seen as too narrow, and there is a need to recognise that 'good practice' industrial policy is much more 'holistic' in its approach and focuses simultaneously on both demand and supply side factors of industrial development.

Overall, the UK automotive sector offers a good example of what can be done, up to a point. Take the case of Jaguar Land Rover (JLR) setting up a new engine plant in the West Midlands (itself a local 'win' – the investment could have gone overseas). While the plant itself will create up to 1500 jobs directly, critical will be maximising the benefits for the supply chain and the wider economy. The new plant will require components from the auto components industry, creating new jobs in the supply chain. Suppliers with expertise in areas such as gears and engine controls, right through to specialists in castings, valve systems and fluid transmission could potentially benefit. Quite how many jobs will be created in the supply chain will depend on how much JLR will source locally, and on that is still very early days. JLR itself has simply said – realistically – that 'hundreds' of jobs are likely to be generated in the wider economy. The Manufacturing Advisory Service (MAS) is already trying to raise

awareness in component manufacturers so that they are in a position to bid for new orders. But even if successful such firms need access to finance to gear up to produce and access to skilled workers.

Critically, access to finance remains a major issue for many firms in the auto supply chain and, no doubt, in other manufacturing sectors. The Smith Institute and the Society of Motor Manufacturers and Traders (Rumfitt, 2012) recently highlighted a 'window of opportunity' to create thousands of new jobs in the auto supply sector but that access to finance remained a real problem which was effectively thwarting the realisation of such potential. Drawing on a major survey of firms operating at different levels in the UK auto supply chain, the report found some 60% of firms were aspiring to grow in the future, one third so rapidly (ibid.). But they faced significant financial challenges, including: relationships with the banks; a gap in growth finance (many have to fund investment through internal cashflow); problems in funding tooling development costs; payment and finance across the supply chain; and the nature of SME owner mangers. The report stresses that, on the whole, banks have a poor understanding of the sector. In tackling such issues, the report calls for a 'step change' in the engagement of the UK financial sector with the automotive industry, a bringing together and streamlining of financial initiatives by the government, a new taskforce to look at finance for tooling up, a move towards more long-term policy arrangements to make sure finance is available, and for owner managers to better assess the range of financial support available, with outside help where needed (ibid.).

More generally, in auto the UK could learn from policy initiatives in the US where,as noted above, the government has been active in encouraging US-based manufacturing firms to relocate some activities back to the US. Earlier this year President Obama created tax incentives that for example offered a 20% income tax credit to allow for the expenses of shifting operations back to the US. The US government has also funded a 'Reshoring Initiative', including an online costs calculator, based on the premise that manufacturers able to calculate costs more fully are more likely to outsource to domestic firms rather than overseas. Possibilities for repatriation of manufacturing to the UK and Europe may be more limited, as the Boston Consulting Group has concluded, in part because the wage cost differential (adjusted for productivity) between Europe and China may not

be close enough to create a 'tipping point' in some sectors as in the US. But this still raises the issue of what policy can do to push the process along as far as possible. That's not going to be easy, and means recognising that smaller firms often followed larger firms in offshoring production as they wanted to be near their customers. So attracting them back means relocating not just individual firms but whole segments of the supply chain, and means support for smaller firms especially which face high costs when moving operations.

While we have seen some welcome moves by the government in encouraging the process, these have been small scale and often don't reach smaller firms in particular. A much more concerted effort is needed as part of a wider industrial policy that looks to build manufacturing capacity. That means one that backs investment in new technologies (for example through better capital allowances), that provides accessible finance for small and medium sized firms, that backs high growth firms and exporters, that encourages manufacturers to increase output and employment through tax breaks, and which supports better skills formation. Overall, there appears to be a real opportunity to rebuild some of the UK's fractured manufacturing supply chains given recent shifts in exchange rates, transport costs, rising wages overseas and heightened concerns over supply chain resilience. But the key message is that this is not going to happen on a significant scale without a major policy effort, as has been recognised in the US.

4. CONCLUSIONS

In recent years, 'offshoring' and 'outsourcing' have transformed previously nationally based auto sectors into global networks of design, production and distribution across the global value chains coordinated by the major automotive Original Equipment Manufacturers (OEMs). As manufacturing activities have shifted to low-labour cost locations in Central and eastern Europe, Asia and Latin America, high-end design, R&D, product development have stayed anchored in the main to high-cost and high knowledge-intensive home economy locations (perhaps with the except of some design and styling activities which are often located in major end markets around the world). However, very recently the weaknesses of and risks inherent in such global

value chains (GVCs) have been highlighted, stimulating a reassessment of their nature and also raising possibilities of 'reshoring' or 'onshoring' some manufacturing activities to 'home' countries. In the UK, a combination of a more competitive exchange rate (despite the very recent appreciation of sterling), increased transport costs, rising wages in key areas of China, and a greater awareness of supply chain resilience have all contributed to a perceived change in some business 'fundamentals'. The potential for some supply chain relocalisation also links in with the trend of the 'servitisation' of manufacturing including the auto sector and shift to a hybrid model where manufacturing and services are increasingly intertwined.

However, despite hopes for 'reshoring' to contribute to a 'rebalancing' of the UK economy, particularly with regard to the auto industry, we argue that there are severe limits as to how far this can go. In particular, firms in the automotive sector face a number of barriers to repatriating activity, in regard to issues relating to finance and skills, especially in the context of deep fractures in the supply chain. Despite some recent policy successes in the case of the UK's automotive policy, addressing such issues requires a more proactive and holistic view of industrial policy for rebalancing the economy than has been recognised thus far.

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