

FOCUS



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The UK automotive sector and Brexit – or, how to slow a rolling industry?

The UK automotive industry is entering a dry period. The voices of the main UK industry representatives and their concerns regarding the negative effects of a potential hard Brexit appear to remain unheard, while other difficulties are accumulating against the backdrop of uncertainty. These representatives believe that current negotiations between the UK and the EU are, at this stage, unfavourable to them, despite the Prime Minister recently emphasising the country's will to remain in the Single Market. The prosperous years of the UK's automotive industry seem to be a thing of the past. Despite its many advantages, the sector will have to renew itself once again if it is to resist the impact of the Brexit. At a time when the automotive sector has to contend with multiple challenges, the prospect of a disorderly exit from the European Union weighs on the capacity of its players to invest and innovate. A weakening of the UK executive adds uncertainty to the future of the sector.

Has the sector stalled?

Negative signs affecting a cutting-edge industry

The automotive sector is a major industry in the UK. According to the UK's Office for National Statistics, the automotive industry generates around 16 billion pounds sterling (or 18 billion euros), while revenues generated by the industry have risen by 55% since 2010. The sector represents almost 1% of GDP and around 9% of the value added of the UK's manufacturing industry. It ranks fourth in Europe in terms of production, according to the European Automobile Manufacturers' Association (ACEA), behind Germany, Spain and France, and employs 169,000 people. Moreover, it boasts the second-highest productivity of these top four countries (10 vehicles per employee), behind Spain. At the worldwide production level, however, it ranked only 13th in 2016 – far behind China and the US. The industry is strongly

geared toward exports, with close to 79% of vehicles assembled in the UK exported, 55% of which to other EU countries, around 16% to the US, and 7% to China. This is explained by the focus of UK manufacturers on "premium" vehicles. The UK is thus home to a hub of manufacturers known worldwide for the quality of their vehicles: Jaguar, Bentley, MINI, MacLaren, Land Rover, Aston Martin, etc. However, virtually all of these brands are subsidiaries of large international groups, notably BMW and Tata Motors. Furthermore, this industry is integrated within the rest of the European Union (EU). According to UK customs, the country imported 80% of its auto components in 2016.

Slowdown in new registrations and production

2016 was an exceptional year for the UK industry. During this period, production increased by 8.5% according to the Society of Motors Manufacturers and Traders (SMMT), nearing the record level of 1998, when

production reached 1,973 million vehicles (*Chart A*). Exports also rose by 10% in 2016, primarily thanks to a dynamic European market. In addition, the vehicle range exported by the UK was in line with the trend of products sought by consumers, which greatly benefited sales. Nevertheless, over the first seven months of 2017, production fell by almost 2% compared to 2016, which can mainly be explained by a 6.5% drop in domestic demand due to lower household confidence. The arrival of new models on the market could breathe new life into the sector's economic performances, without eliminating the risk linked to the previously-mentioned drop in domestic demand. At present, 56% of the UK's automotive exports are geared toward the European Union: its biggest export market. However, this favourable situation does not offset the slowdown in domestic demand.

Hence, the question of trade relations with the UK within the European Single Market has become crucial for auto manufacturers based in the UK. The UK auto industry produces high-margin 'premium' luxury vehicles, as well as models that benefit from the popularity among consumers of sport utility vehicles (SUVs), such as the Nissan Qashqai and Juke, as well as of the 'neo-retro' models heralded by MINI.

As mentioned above, vehicle manufacturers based in the UK are all subsidiaries of large foreign groups (Tata Motors, BMW, PSA, etc.). As a result, the perception of these manufacturers with regard to the attractiveness of the UK could change in a potentially negative way, depending on the outcome of the negotiations on the country's exit or not from the European Single Market.

Investment is shrinking

Other signs indicate a deterioration in the state of the domestic auto sector. According to Michael Hawes, Chief Executive of SMMT, investments by components suppliers and car manufacturers dropped in 2016 to 1.6 billion pounds sterling (1.8 billion euros), i.e. down 36% compared to the average of the period 2011-2015 (2.5 billion pounds sterling). In the first half of 2017, this trend appears even more marked, as investments totalled just 322 million pounds sterling (363 million euros), putting the allocation of new models to UK plants in danger. For reasons of efficiency, each manufacturer puts its factories up for competition in a geographical area before allocating the assembly of a model. According to a study by the firm PA Consulting, cited by David Bailey from the Aston Business School,

the prospects linked to the difficulties of negotiations between the UK and EU and their subsequent outcome ('bad deal' or 'no deal at all') could continue to curb investors' interest in the UK, notably within the auto sector. The decision to invest in a sector requires a clear vision of the future, with a controlled risk. In the UK automotive sector, the important investment decisions are made overseas (e.g. India, Japan, France, Germany), by countries who are not as concerned by current debates or the pressures exerted by the British political class with respect to the viability of domestic auto manufacturers over the next 20 years. Manufacturers must constantly plan for the implementation of upgrades and new models, as well as their production location. *Chart B* below illustrates that a significant number of plant location decisions (28 planned between 2017 and 2024) are under review for future production of upgrades or new models. The manufacturers most greatly concerned by this type of decision, at close to 50%, are Toyota, Honda, Nissan and Vauxhall/Opel. The vehicles produced by these manufacturers are, for the most part, mid-range, with lower margins than premium vehicles.

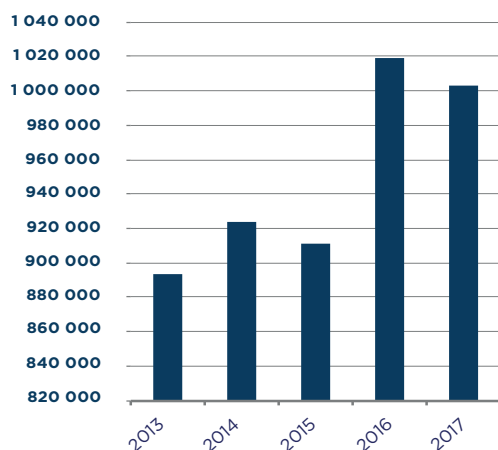
Moreover, premium vehicles are mainly destined for European Union countries, within which these manufacturers benefit from both good distribution networks and large export volumes. Finally, against this backdrop, there is a real risk that these manufacturers will consider closing some factories based in the UK, because they might run below the standard utilisation rate, which is defined by the profession at between 80% and 85%.

The European Single Market: vital for the UK auto sector

The value chain of the UK automotive sector: highly integrated across the segments of the supply chain

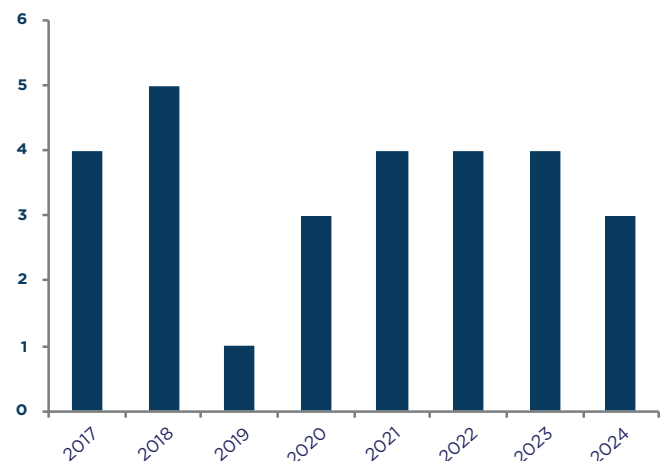
The UK auto sector is indeed dependant on the European Single Market, both in terms of vehicle exports and imports. This dependence is also explained by the fact that the UK auto sector is integrated within the value chain, enabling it to access the best components. This allows it to generate savings, as the management of these components is done with a view to minimise production times and thus inventories. Called 'just-in-time' manufacturing, this

CHART A
UK vehicle production over the first 7 months of each year



Source: SMMT, August 2017

CHART B
Number of decisions taken per year regarding the production of upgrades in the UK



Source: 2016 presentation by David Bailey from the Aston Business School, adapted from a report by PA Consulting in 2016.

production system was first set up by Toyota in the 1950s in order to streamline production. According to the 2017 report by the Automotive Council (made up of members of the government and the auto industry with the mission to define and implement a national automotive strategy), close to 56% of the parts of a vehicle assembled at a UK plant come from outside the country.

This is the case for only 40% of vehicles coming out of German plants. In a 'hard' Brexit scenario, with strict control of goods at UK-EU borders, auto component imports to the UK would be delayed and lead to other costs on top of those already integrated. The up to now well-oiled machine mentioned above would thus be subject to inevitably costly adjustments. Moreover, this would tarnish the "good productivity" image on which the UK automotive industry has been built over many years.

Scenarios of changes in the value chain model of the UK auto industry in the post-Brexit era

In the automotive sector, exchanges among different factories favour the interconnection of production systems. It is thus normal for auto parts to travel between several locations before they are definitely installed into a final vehicle product

As previously indicated, the UK does not produce locally all of the parts necessary to assemble a vehicle. This leads British manufacturers to provision their spare parts from other factories located in EU countries, enabling sector players to obtain parts that comply with European quality standards, while also meeting cost requirements. This relatively old trend accelerated as manufacturers adopted modular platforms in order to benefit from substantial economies of scale (Table 1).

Assuming that Brexit negotiations resulted in a free trade agreement between the UK and the EU – which, at the time of writing, appears unlikely in the medium term, close to 50% of the parts used in a car assembled in the UK would continue to come from the European Union. In general, free trade agreements stipulate that a vehicle exported from country A to country B must have at least half of its parts coming from country B. In the case of the UK, there is not a sufficient number of components suppliers in the country to be able to equip its domestically-produced vehicles, and the small size of its automotive market is not enough to incite suppliers to open plants and benefit from economies of scale. Moreover, according to a communication by the European Association of Automotive Suppliers (CLEPA) of April 2017, a component can travel through fifteen countries before being definitively installed in a vehicle. As a result, by international convention, if the UK does not sign an agreement with the EU during the current negotiations, WTO tariffs could apply by default – this would raise the cost of vehicle components (according to our estimates, this could lead to an increase in tariffs of up to 10% for a vehicle and up to 3% for a component), and subsequently make the UK auto sector much less competitive.

The UK auto sector could stall in the middle of the innovation highway

The prospect of a hard Brexit could affect another key aspect of the UK automotive sector: the financing of innovation. The European Union has financed several R&D programmes in the UK, as in the other Member States. The UK was the second-largest recipient of European funds (close to 6 billion euros out of the 37 billion euros allocated to Member States) of the 7th Framework Programme for Research and Technological Development (2007-2013). Although the programme was not destined solely for the automotive industry, it was nevertheless a key benefactor thanks to certain provisions. This was the case, for example, of provisions relating to

TABLE 1
Car assembly in Europe: examples of integration in the value chain

COMPONENT	BRAND	COUNTRY/REGION OF ORIGIN	TRAVELS THROUGH
Crankshaft	Mini	France, where the steel cast is made	The UK, where the part is crafted into shape. It is then sent to Germany to be inserted into the engine, and then back to the UK, where it is installed in the car.
Bumper	Bentley	Eastern Europe	The UK for further work, then on to Germany for finishing, then back to the UK where it is added to the vehicle.

Source: A Mini part's incredible journey shows how Brexit will hit the UK car industry. The Guardian, March, 3rd, 2017

the lightening of vehicle structure and weight, or electricity storage capacity and energy conservation of electric vehicles.

The European Union's Horizon 2020 plan (2014-2020), to which the UK contributed to financing, then compounded the financing of innovation in the auto industry. This plan also benefited the UK auto industry, which received 250 million pounds sterling (or 282 million euros) for the years 2016-2017, according to the SMMT, through a loan granted by the European Investment Bank (EIB) – a body of the European Union that notably finances companies working on developing environmentally-friendly vehicles.

The recent history of the financing of innovation in the UK auto sector by European funds provides insight into the UK's lead within Europe, notably with respect to the development of hybrid and electric vehicles.

A certain number of cars produced in the UK offer the latest technological innovations. This is the case of the Nissan LEAF, an electric car with high autonomy, assembled in the UK. There is also the 450 million pound sterling loan (507 million euros) that Ford benefited from, also via the EIB, to open a research centre in the north of England in Dunton in 2010.

In the upcoming 'post-Brexit' period, the financing of innovation will be a crucial issue for the UK automotive sector, as for all carmakers worldwide. One of the major challenges for players in the world auto sector is to position themselves correctly in terms of innovation, allowing them to produce the fully autonomous and electric vehicles of the future. Another major stake for historical auto manufacturers will be to contend with the arrival of new players, such as Google.

As a result, having the financing of innovation for the UK auto sector called into question due to Brexit could weaken the country in the context of emerging world competition.

Another potential consequence of Brexit on the UK automotive sector: putting a brake on the arrival of qualified manpower

The UK auto sector suffers structurally from a lack of qualified manpower that is necessary to its development. This is explained by various factors, including the lack of STEM graduates in the UK. The non-government organisation EngineeringUK estimates that there is a shortfall of 20,000 graduates each year, and believes that this situation could last up to 2025. This will lead to fiercer competition among the different sectors hiring this type of profile – not only in the automotive sector, but also in sectors such as aerospace, banking, and finance.

2 - More specifically by Taiichi Ohno, under the name Kanban.



Furthermore, in a February 2016 report, the Automotive Council estimated that the UK auto sector needs 5,000 full-time equivalent positions in cutting-edge areas. Meanwhile, the SMMT indicated in a September 2017 report that the UK's EU membership has – up to now – favoured the recruitment of qualified engineers and technicians from other EU Member States, while

promoting an increase in the skills of local technicians. We therefore believe that the planned Brexit could increase workforce difficulties for the UK in the short and medium terms at least. This is in large part because one of the key messages behind the successful 'Leave' campaign in the UK was the limitation of economic immigration, notably from other countries.

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