

Death by a thousand cuts:

The strategic outlook for the UK automotive industry beyond Brexit

by Professor Matthias Holweg

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Executive summary

- *Uncertainty caused by Brexit is a real problem that has already caused measurable damage to the UK car industry. We show that the UK car industry has already lost 9% of its volume due to Brexit. These disinvestments are likely to be irreversible. Current production forecasts of manufacturers going forward are down by 17% compared to pre-referendum levels.*
- *Volume car production in the UK cannot be sustained under a WTO tariff regime, and even a customs union would induce friction into the supply chain that would make UK plants less competitive.*
- *In case of a no-deal Brexit we estimate that the UK is likely to lose 35% of its current production volume over the coming decade, to a level below 1 million units per annum. This equates to 58% of its peak production volume in 2016.*
- *Two factors will continue to inflict damage to manufacturing: protracted uncertainty by delaying the decision when and how to leave the EU, and any friction that is induced into the supply chain when this decision is reached.*
- *The strategic danger is a continued loss of scale in UK automotive manufacturing that will lead to a slow “hollowing-out” of the skill and supply bases, which will have further adverse effects on aerospace and defence manufacturing.*

The real and present danger “uncertainty” poses

Senior executives from the automotive and aerospace sectors have repeatedly warned that Brexit-related uncertainty is hurting UK manufacturing, at times even calling the ensuing uncertainty a “disgrace”ⁱ. Yet their warnings have been either ignored or rejected as scaremongering by leading Brexiteersⁱⁱ, pointing out that – “despite Brexit” – the UK economy has been growing while showing record-level employment. Even recent data showing months of consecutive decline in UK car manufacturing output have been dismissed as being in line with a global slowdown in the industryⁱⁱⁱ.

It is unfortunate that much of the discussion of the impact of Brexit has remained at an abstract level, often citing the diffuse notion of “uncertainty” as a particular concern, as the economic effect of this uncertainty can be calculated, the damage that it has done can already be seen, and the likely future damage that trade friction or tariffs will cause can be estimated.

It is certainly the case that the global car industry is contracting in the wake of “Dieselgate” and growing anxiety of trade disputes and the resulting slowdown in China. Brexit thus hits the UK car industry at a time when it is particularly vulnerable. Strategic decisions in the car industry are linked to the life cycle of a model: around two years before a model is due to reach its end-of-production, plants across the car makers’ production network are submitting bids to host the next model generation, which will then remain in production for five to seven years thereafter.

Since the Brexit referendum all but one^{iv} major decision have gone against the UK^v: Daimler cancelled its joint project with Nissan for Sunderland, Jaguar Land Rover moved production of the Discovery model to Slovakia, Honda announced the closure of its Swindon plant (even turning around the ship that was bringing production equipment to make the electric version of the Civic in the UK^{vi}), and Nissan announced that the next generation of the X-trail SUV would be produced in Japan (making good use of the EU-Japan free-trade deal that has just come into force and will see import tariffs on cars taper away to zero). In addition, Toyota and BMW have both put out stark warnings that their UK production is under threat in a no-deal Brexit scenario^{vii}. Toyota’s recent announcement to produce a Suzuki-badged version of its Corolla estate in the UK surely was welcome news in this context, while of course this will neither lead to new employment nor significant additional investment^{viii}.

Not surprisingly, overall investment in the industry has dropped by 80% over the last three years^{ix}. In the following we estimate the long-term effects that Brexit, and a no-deal scenario in particular, will have on automotive manufacturing in the UK.

Long-term projects for UK car manufacturing

The long-term projections for UK passenger car output are shown in the Figure below. Here, actual losses due to the closure of Honda and Nissan’s decision not to make the X-Trail in the UK directly reduce UK projected output by 8.6% alone. Disinvestments, like Honda’s decision to close its Swindon plant, will be extremely difficult to reverse as Brexit undercuts the very logic that drew Japanese firms here in the first place.

The medium-term adjustments made by car manufacturers can also be seen: when comparing the pre-referendum forecasts made by in 2017 with current forecasts of 2019, car manufacturers have adjusted their production outlook in 2019 down by 17.4%. This is partly in response to a global slowdown, yet the UK appears to be affected more than European car production.

In the long-term, in case of a no-deal scenario the estimated damage could be a 34.6% reduction in volume over the next ten years. This figure is based on a series of assumptions that extrapolate vehicle manufacturers’ intents in relation to Brexit (such as the closure of plants that currently operate below scale, consolidation of UK assembly plants, and reduced model line-ups as more production is moved abroad) into the future. Thus, in ten years’ time the UK car industry could potentially contract to an output in the region of 1 million units, which is 58% of its peak production in 2016. This would greatly reduce scale and scope in the UK supply chain (“hollowing-out”), placing further pressures on car firms to locate manufacturing abroad.

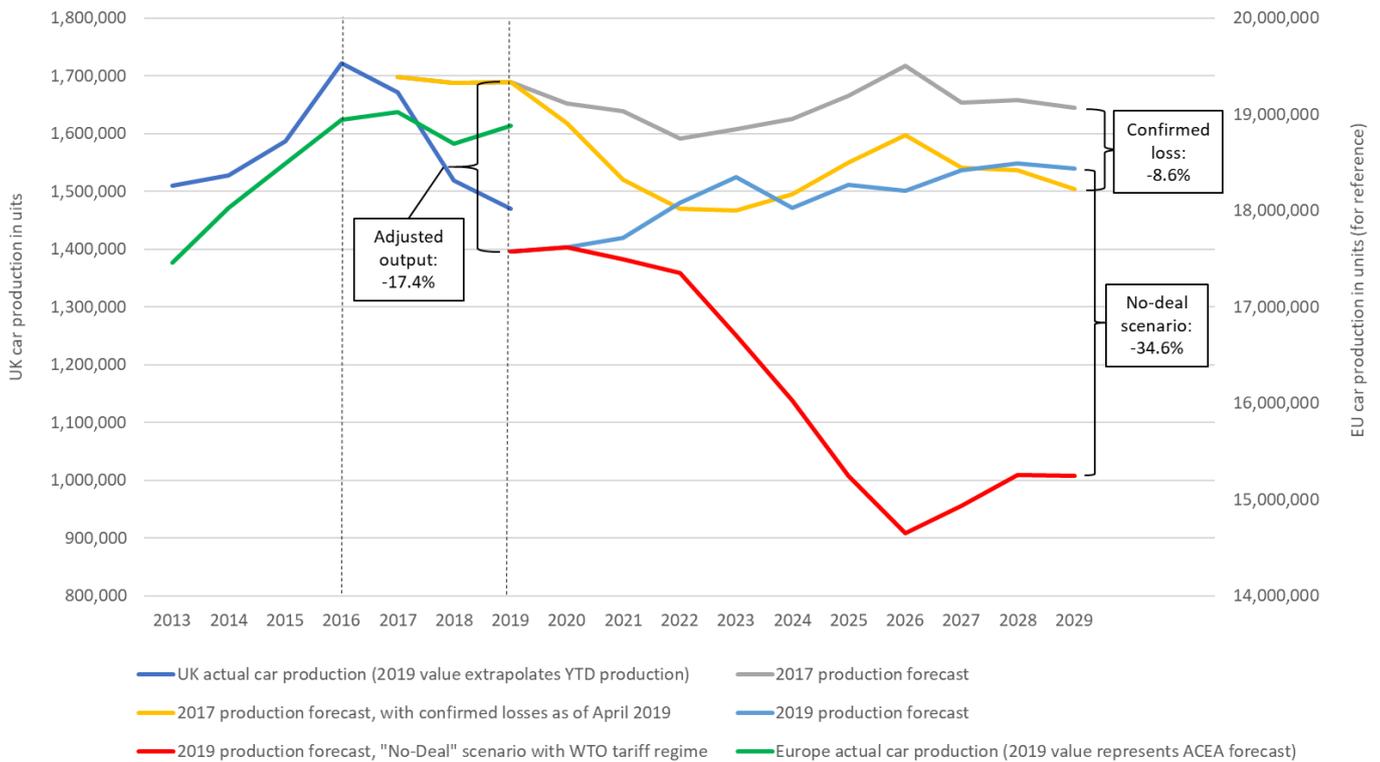


Figure: Long-term volume projections for UK passenger car production: 2017 and today^x.

So why can the car industry not work under WTO tariffs^{xi}?

Brexit supporters domestically and abroad have claimed that many countries successfully trade on WTO terms, including prominent voices like former Australian Prime Minister Tony Abbott^{xii}. While it is true that countries can “trade” on WTO terms, these tariffs make it very costly to maintain the complex and interwoven supply chains in automotive or aerospace manufacturing.

To understand the problem with WTO tariffs it is important to look at the cost structure of a car: to estimate the impact of WTO tariffs on profitability, we used the cost structure of a volume passenger car. Here, the components make about two-thirds of the value-add in a passenger car (ex factory). Also, from our research with the Automotive Council we know that, on average, 56% of components used in UK car production are imported. Tariffs on car components vary under WTO rules, yet most components attract 4.5%, which is the figure we used. Thus, just under £4,000 worth of components will fall under WTO import tariff rules on average, which equates to £166. In an industry plagued by over-capacity and tight margins, this equates to a 12% reduction in profit margin for a UK-assembled vehicle. (These figures are estimates based on averages for UK-made volume car and are likely to vary across manufacturers and models.)

Yet the real problem here is that 8 out of 10 cars made in the UK are exported, and 53% of these go to the EU^{xiii}. Under a WTO regime, tariffs of 10% would apply to vehicles exported from the UK to the EU. These tariffs would be calculated on the value of vehicle in its current state (the value at the end of the assembly process), rather than any retail or transfer price. Using our example of an average UK-built volume car, this would equate to c. £1,400, which more or less equals the expected average profit margin for such a vehicle sale. Thus, even if the UK government were not to impose any tariffs on components coming into the UK^{xiv} (as it plans to in a “no-deal” scenario), the real question is whether the EU will wave tariffs on vehicles being

imported from the UK. Considering that the UK is proposing to adopt a 10% import tariff on new vehicles and 22% on engines^{xv}, it seems most likely that the EU will match or exceed UK tariffs. Even if the UK were to waive import duties for EU-built vehicles, strong lobby groups and even stronger national interests make any preferential treatment for imports of UK-built vehicles into the EU unlikely.

In summary, exporting volume cars to the EU under WTO rules is simply not a financially viable option, as vehicle import tariffs will render these unprofitable. Firms may instead choose to establish small-scale assembly operations^{xvi} in the UK for local sales to circumvent UK import duties on vehicles, yet this would mean that the most significant proportion of economic value is generated outside the UK.

Even a customs union, often heralded as an antidote to the ills of WTO tariffs, would be problematic for the UK car industry as it would not entail frictionless trade, as many assume. While it is true that in this case no tariffs would apply, it would still induce considerable friction and hence reduce the competitiveness of UK assembly plants. Vehicle assembly plants take delivery of components several times per day, in a tightly orchestrated and synchronised manner. Delays at the borders, and more so the uncertainty surrounding the length of this delay, will mean car manufacturers will have to hold more costly inventory buffers in order to prevent disruptions to production. Additional requirements for licences, invoices, and transport permits further increase transaction costs.

Outlook

Brexit-related uncertainty is not an abstract issue. Tariffs and friction pose real problems, and their prospects alone have already caused real and measurable damage to the industrial landscape in the UK. Two factors will continue to inflict damage to manufacturing: protracted uncertainty by delaying the decision when and how to leave the EU, and any friction that is induced into the supply chain when this decision is reached.

The great and present danger is that the decisions on where to produce new models will continue to go against the UK, until existing plants here become sub-scale and thus uncompetitive, and will close. This would invariably lead to a hollowing-out of the UK's component supply chain, effectively condemning the automotive industry to a slow "death by a thousand cuts". Large-scale reduction of the industry's 856,000-strong workforce will invariably follow – with devastating effects on regions like the West Midlands, where automotive accounts for 34% of overall industry employment^{xvii}. Other sectors will be affected too, as there is a symbiotic relationship between automotive, defence and aerospace in terms of skills and supply base.

Whichever way one looks, it is hard to underestimate the threat Brexit represents to the future of UK manufacturing.

About the author:

Matthias Holweg is the American Standard Companies Professor of Operations Management at Saïd Business School at the University of Oxford. He has conducted extensive research into the competitiveness and dynamics of the global automotive industry, and was part of the UK's *New Automotive Innovation and Growth Team* that proposed the establishment of the *Automotive Council UK* in 2009, which he has been supporting ever since.

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Endnotes

ⁱ See for example: “Airbus chief Tom Enders brands handling of Brexit a disgrace”, *Financial Times*, January 24 2019 and: “Jaguar Boss Warns Hard Brexit May Cost JLR Thousands of Jobs”, *Bloomberg*, September 11 2018

ⁱⁱ “Tory Brexiteer accuses JLR boss 'making it up' over Brexit”, *Coventry News*, September 17 2018

ⁱⁱⁱ See for example: <https://twitter.com/shifrench/status/1111173899650244609?s=12>

^{iv} The one notable exception was PSA’s decision to produce the next generation Vivaro van at Luton, see: <https://www.autoexpress.co.uk/vauxhall/vivaro/105766/new-vauxhall-vivaro-van-revealed-and-it-will-be-built-in-luton>

^v See these links for more details on the above: <https://www.independent.co.uk/news/business/news/mercedes-benz-brexit-production-move-nissan-plant-sunderland-a8568331.html>; <https://www.bbc.com/news/business-44438846>; <https://www.bbc.com/news/business-47287386>; <https://www.swindonadvertiser.co.uk/news/17471496.honda-reveals-it-had-plans-to-make-electric-cars-in-swindon-before-plant-closure/>; <https://www.bbc.com/news/business-47107561>;

^{vi} <https://www.swindonadvertiser.co.uk/news/17471496.honda-reveals-it-had-plans-to-make-electric-cars-in-swindon-before-plant-closure/>

^{vii} <https://www.bbc.com/news/business-47457219>

^{viii} <https://www.bbc.com/news/uk-england-derbyshire-47638644>

^{ix} Investment across the UK car industry has fallen by 80 per cent over three years, partly as a result of uncertainty over Brexit, see “Brexit uncertainty prompts carmakers to consider UK exit”, *Financial Times*, April 4 2019.

^x Source of data: ACEA, IHS Global Insight, OICA and SMMT

^{xi} A detailed overview of the WTO tariff regime can be found here: <http://tariffdata.wto.org/default.aspx>

^{xii} See Tony Abbott’s letter of October 27, 2018 in *The Spectator*: <https://www.spectator.co.uk/2018/10/tony-abbott-how-to-save-brexit/>. Avid readers will of course point out here that volume car production in Australia ceased in 2017, see: <https://www.autocar.co.uk/car-news/industry/end-car-production-australia-what-went-wrong>

^{xiii} Source: SMMT, see: <https://www.smmt.co.uk/vehicle-data/manufacturing/>

^{xiv} In case of a “no-deal” scenario, the UK tariff proposes the following tariff regime, available in full at: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785939/Tariff_Reference_Document_13_March_2019.pdf

^{xv} See p.1391ff of Annex II of: https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/785939/Tariff_Reference_Document_13_March_2019.pdf

^{xvi} These could be CKD (complete-knock-down) and SKD (semi-knocked-down) setups where the components sets are shipped from abroad in order to avoid local import duties on complete vehicles. These CKD or SKD facilities would then employ a small workforce to assemble these kits into complete vehicles, yet this would not entail the value-added associated with a full automotive manufacturing scenario.

^{xvii} For data on employment in the UK automotive industry see page 7 of: <https://www.parliament.uk/documents/commons-committees/Exiting-the-European-Union/17-19/Sectoral%20Analyses/4-Sectoral-Analyses-Automotive-Report.pdf> and <https://www.smmt.co.uk/industry-topics/sustainability/employment/>