A study on the effects of Brexit on the Supply Chain Management of the automobile industry

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ABSTRACT

The automobile industry in the United Kingdom has been running successfully for the past several years. The booming industry has created several jobs in the local market and has secured the place of London as one of the most highly developed and opportunity-rich economies present in the European Union. Such growth was possible due to the regulations and policies that the United Kingdom shared with other Member Nations. With the looming decision of Brexit in the political environment, how would such a decision affect the automobile industry? This article considers the short-run impacts, foreign direct investments and the nature of the trading relationship with the European Union in the future. It also provides some concluding thoughts and provides details on the necessary steps required to support the automobile industry.

Keywords— *Concept of Supply Chain Management, History of the European Union, Benefits of The European Union to the automobile industry of London, Reasons behind the cause of Brexit, Effect of Brexit on the Supply Chain Management of the automobile industry*

1. INTRODUCTION

According to the NC State University Supply chain management (SCM) is “the active management of supply chain activities to maximize customer value and achieve a sustainable competitive advantage. It represents a conscious effort by the supply chain firms to develop and run supply chains in the most effective & efficient ways possible. Supply chain activities cover everything from product development, sourcing, production, and logistics, as well as the information systems needed to coordinate these activities.” (SRC SME, 2017). The basic concept of Supply Chain management is to ensure the timely production, transportation, delivery and arrival of the final goods onto the shelves of the stores to maximize the sales of the company (Amadeo, 2019).

Although, Supply Chain deals with such activities which are directly related to the maximization of the sales of the company, activities such as transportation, pricing of the goods and the procurement of raw materials, they are directly linked to the rules and regulations set-up by the governing body in the current market. For this article, the governing body would be the European Union (Amadeo, 2019). According to Encyclopaedia Britannica, the European Union (EU), international organization comprising 28 European countries and governing common economic, social, and security policies. (Gabel, 2019)

Originally confined to western Europe, the EU undertook a robust expansion into central and eastern Europe in the early 21st century. The EU’s members are Austria, Belgium, Bulgaria, Croatia, Cyprus, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, the Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, and the United Kingdom.. The existence of such organizations ensures the overall development as well as the simplification of rules and regulations within the member countries. (Gabel, 2019)

A huge organization such as the E.U regulates the rules and regulations which are followed by each and every industry in the member states. While for some countries, the presence of such an organization helped them to grow exponentially, the same could

not be said for London, who was facing a tough time growing further due to the restrictive and general laws of the European Union. When a member state, leaves such an organization, it creates a huge impact on the economy of the country and its industries. Such is the case of London due to Brexit. (Amadeo, 2019) (Gabel, 2019)

One of the main reasons for such a dramatic decision were the problems United Kingdom and its citizens faced with the policies and regulations laid down by the European Union. One of the reasons for such a decision were the “immigration policy” of the European Union. According to the “Immigration Policy” of the European Union, any citizen of the member country can re-locate to any of the other member countries and work over there without needing a work-visa. This caused an issue as the presence of such a policy led to the cutting down of public resources such as National medical Insurance. (Beckerman, 2016)

Such a decision caused the London economy to shake leading to a few drastic changes in the functioning of the economy as well as every company present in it. According to an article published by The Guardian by David Comm, the automotive industry had taken a hit due to the British exit from the European Union. Investment in the U.K had also taken a hit as companies set-up in U.K face heavy questioning from investors regarding whether Britain will have new tariffs, bureaucratic custom barriers and the ‘intangible” factor of whether they would feel welcome or not. (Comm, 2017)

The main question which this article hopes to answer is the effect Brexit took on the supply chain management of the companies present in the London economy. The article specifically dives into the political factors and market conditions that were affecting the supply chain management of the automobile industry. In particular this investigative article wishes to find out the major effects that such a huge political decision would cause which would be discussed further in the article.

2. HISTORYOFTHEEUROPEANUNION

The 28 member states that make up the European Union (EU) follow a set of shared social, economic, and security policies, as described in the Encyclopaedia Britannica. (Edwards, 2019) The group has been in charge from the start, although efforts to unite Europe stretch all the way back to the 9th century. A Frankish emperor named Charlemagne ruled over most of Europe in the ninth century, and Napoleon Bonaparte ruled over much of Europe in the nineteenth century, according to an article published by Euro India. It is Euro Indiana.

Europe was shattered and engulfed in bloodshed as a result of WWII. Half of Europe had been leveled by 1945, with bridges and railroads and industries left in ruins. Many Europeans were filled with despair as they lost their homes and means of livelihood. They had no idea when things would go back to normal. Rebuilding Europe and guaranteeing the continent's bright future would require putting aside biases and rivalries if the reality were to alter. For instance, the Berlin Airlift and the Marshall Plan both helped the defeated countries recover and advance. It is Euro Indiana.

The governments of Belgium and Luxenberg came to an agreement in 1921 to form trade agreements in an effort to boost their economies and better compete with bigger nations. Not only that, but nations like Belgium and the Netherlands also began working together economically in 1948. After much negotiation, the Benelux Customs Union was finally concluded in 1948. This union facilitated free trade by allowing the free movement of services, products, money, and labor among member states.

The idea of a more united Europe, with more economic and political might, was examined. For instance, Frenchman Jean Monnet thought that a unified Europe could hold its own against resource-rich powers like the US. The French foreign minister Robert Schuman shared this view, as did his counterpart in West Germany, who thought that coal-producing European countries might merge their coal and steel sectors. On the one hand, increased integration may provide such nations more economic influence in global marketplaces, as Monnet had proposed. It is Euro Indiana.

This would allow European countries like France to monitor West Germany's rapidly recovering economy more closely. As West Germany's "economic wonder" got underway, helping the country swiftly rebuild from the destruction of World War II, neighboring countries were anxious to make sure that Germany's increased industry and utilization was giving rise to yet another formidable military force. To sidestep this problem, in 1951 the European Coal and Steel Community was established; it went into force in 1952. Coal, iron, and steel production and trade integration in Belgium, Luxenberg, the Netherlands, France, west Germany, and Italy was the duty of the Community. This marked the beginning of six nations' journeys towards European unification, which would eventually lead to the formation of the European Union. It is Euro Indiana.

3. BENEFITSOFDOINGTRADEINTHEEU

As defined by the Wikipedia, the European Union is a political and economic union of 28 states that are located in Europe.(Wikipedia, n.d.) This agreement was signed on 1st November 1993, in Maastricht, Holland. It was initially signed among 6countries, namely Belgium, France, Germany, Italy, Luxembourg and the Netherlands. After the slow integration amongst the 28countries,therehadbeen alotofadvantages forthecountriespartoftheEuropeanUnionagreement.

(a) Greater competition and more options for the consumer- With the transparency of the borders amongst the 26 countries, it waseasier to for different companies to open their businesses in the EU, and this increases the competition among the businesses.With this, the quality of the products had to be at its best, if at all they had to compete in the highly competitive market. So thisgave theconsumers theoptionto choosefromthebestproducts.

(b) Removal of trade barriers- With the integration of the borders, the trade of materials and goods amongst different countries hadbecomeeasier.WiththeagreementoftheEU,thetradetariffsamongstthedifferentcountrieswasalreadydecidedandwiththecommon currency followed by the different countries, there was no issue faced with respect to exchange rate and trade barriersrelated tothat.

(c) Reduction of business costs- With the EU come in place, there will be a reduction of business cost for the companies. The EUagreement states the easy migration of people from one country to another. So, companies take labourers from less developedcountries,wheretheywillreducetheirmanufacturingcosts.Also,thetradeofrawmaterialsamongstthedifferentcountrieswill become easier,duetothereasons mentionedabove.

4. WHYDIDBRITAINLEAVETHEEU

The exit of Britain from the European Union was one of the most shocking things that took place in the recent times, with respectto world politics. Under this section, I would like to decode the reason due to which Britain decided to quit the EU, even after allthe benefits theyweregettingbybeingpartofthisUnion.

- **Sovereignty:** According to brittanica.com, (Sovereignty, 2019) Sovereignty is defined as the power or authority of a country inthe decision-making process of the state and in the maintenance of order. When Britain joined the EU, even with all the benefitsthey had with easiness of trade, integration of global markets, it affected the sovereignty of the country in a huge way, which isoneofthebasicfundamentalsofademocracy.AsBritainwaspartoftheEU,Britainhadtotakedecisionswithrespecttotherulessetup by the governing bodies of the EU, namely the European commission, and couldn't take decisions which benefitted the UKif it meant that it would affect the other countries under the EU in a negative way. According to a poll taken by Wikipedia.com, itshowed that nearly 49% of voters who voted in favour of Brexit, said the biggest reason they wanted to leave the EU was "Theprinciple thatdecisions abouttheUKshouldbetaken intheUK"

- **Immigration:** According to Wikipedia, the second most imminent factor because of which the population of Britain decided tovoteforBrexitwastheeffectontheimmigrationpoliciesoftheUK.ThroughoutthehistoryoftheEU,UKwasconsideredasoneof the more rich countries as compared to the other countries, and when there used to be a crisis in one country, it was expectedthattheUKwouldcoverupforthem,asotherwiseitwouldaffectallthecountriesintheunion.IntheEuropeanUnion,theborderswere prettymuchtransparent,so peoplefromallthe poorcountrieswouldmigrate totherichcountrieslike UKinsearch ofajob,which would have an aftereffect of not enough jobs available for the citizens of the United Kingdom. This also used to take placewhen thereusedtobeaglobaleconomiccrisis,andnojobs availableinothercountries

4.1 HowBrexitaffectedthesupply chain

We would like to go more in depth regarding how the Brexit affected the supply chain industry, by going more in depth on how itaffected theautomobileindustryspecifically.

4.1.1 Short-run market and production impacts: There was an apparent and immediate effect on the UK economy from Brexit, which would cut market volume by more than 400,000 units total. According to Bailey (2018),

4.1.2 According to standard economic theory, the UK's car manufacturers should see an increase in exports as a result of the sterling's depreciation. This is because, when selling their vehicles in dollars, they would be receiving more sterling per unit than they would with a stronger dollar. Each vehicle would cost more to make as a result of the economic downturn and subsequent production cuts. So, in order to boost profits, automakers must choose between increasing production and raising prices. This is according to Bailey (2018). Based on this analysis, it is clear that local assemblers will gain from Brexit in the sense that their production will rise and be exported, resulting in a profit, while domestic sales of the automobiles would fall. Meanwhile, both consumers and businesses will benefit from imported vehicles and parts. Companies in the UK favored importing auto parts from other countries before Brexit since doing so was easier, cheaper, and there were less hidden expenses, such as tariffs, due to the openness of the market and the impermeability of the EU's borders. A study out of Birmingham University found that 60% of the parts used to make UK-assembled automobiles come from Germany. Because they will have to pay more in Sterling for that one Dollar, these businesses will feel the pinch of the sterling's devaluation. As a result, after Brexit, the price of these automobiles will rise. According to Bailey (2018),

4.1.3

4.1.4

4.1.5 UncertaintyandFDI

With the manufacturing sectors, production was fragmented along global value chain of Multi-tier suppliers that cross borders andcontinents.SuchvaluechainsarecoordinatedfromstrategiclocationswheretheoriginalequipmentIsmanufactured.BeforeBrexit,the border used to be transparent, and coordinating the supply chain used to be easy, but post Brexit, coordinating this will be atoughtask.Thiswillbebecausenow,there willbeimportdutiesandtariffs thatwillbeimposedbeforegoodsaretransportedfromonecountry toanother.

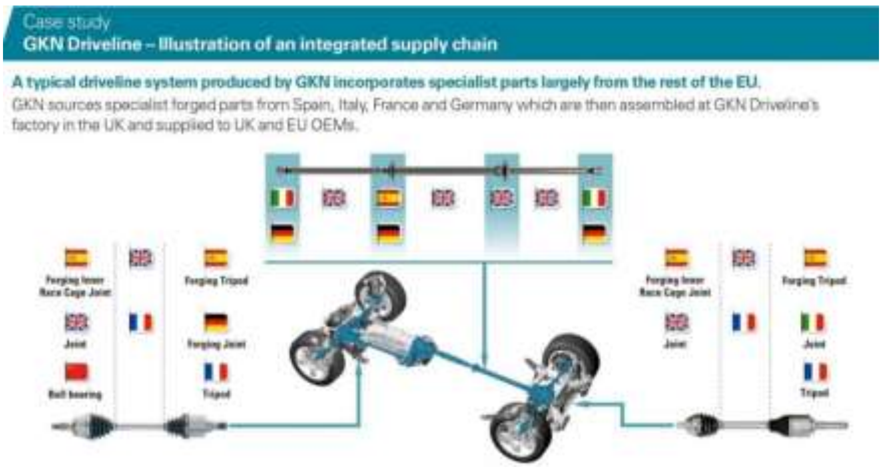

Fig.1:Case study:GKNdriveline

The FDI in the UK will be affected as before, the FDI flown in the UK used to be used to get access to the EU, which is a singlemarket.Withthis,multinationalscouldusefacilitiesacrossdifferentcountries,andsaveoncostoftariffs.Asofnow,theagreementof trade between the UK and the EU is still to be decided and negotiations are taking place between the two. An example that canbe taken is how automotive and engine assemblers like GM, BMW and Ford used import components to the UK, and this used tobe easydue tothe singlemarket. Butnow,withthis takenof,itcan heavilyaffectthe FDIintheUK.

Looking at numbers calculated by the researchers of the journal written by Birmingham University, if UK doesn't adhere to theWTO rulesinabsenceofa tradedealwiththeEU,thetariffson cars couldgoupby10%oncarsand4%oncomponents.

4.1.6 FirmSpecificImpacts

Currently companies face a huge dilemma in continuing their operations due to the impending Brexit decision. Such companiesearlierfacedadvantages whentheUnitedKingdomwas partoftheEU,which were:

- With the transparency of the borders amongst the 26 countries, it was easier to for different companies to open their businessesin the EU, and this increases the competition among the businesses. With this, the quality of the products had to be at its best, ifat all they had to compete in the highly competitive market. So this gave the consumers the option to choose from the bestproducts.
- Removal of trade barriers- With the integration of the borders, the trade of materials and goods amongst different countries hadbecome easier. With the agreement of the EU, the trade tariffs amongst the different countries was already decided and with thecommon currency followed by the different countries, there was no issue faced with respect to exchange rate and trade barriersrelated tothat.

With the occurrence of Brexit, companies would have to change the way of operation, supply of materials and manufacturing ofgoods and services with the high occurrence of double running costs especially in the areas of tooling and logistics. A few of theissuesfacedbythesecompanies wouldbe:

- Relative cost differences between the UK and the EU- When the borders were transparent, the automobile companies couldmanufactureinanyofthecountriesacrossEurope,whichhavealowerlabourandmanufacturingcost,withoutanyextracostsoftariffs or any other overhead charges. This reduced the cost of manufacturing. But now, UK becoming an independent nation,they cannotdothis,andthecostofproductionwillsurelygoup.
- Sales of a model on the European vs the European market- Before, companies could sell/export their cars to different countriesacross Europe without facing any difficulty of Tariffs or any other trade barriers. But now, this will not be possible. The cost ofTariffs will go up, thus increasing the cost of the car. This is again dependent on what trade agreement UK and the EuropeanUnion willhaveafterBrexit.

The future of several factories and employment in the UK is in doubt due to the growing sense of uncertainty and the potential introduction of tariffs. A choice of this kind might set off a chain reaction in the ever-changing supply chain. Increases in automotive technology, particularly in the areas of electric vehicles, connected vehicles, and self-driving automobiles, have the potential to revolutionize the automotive industry, as they do every other sector of the economy. Therefore, the industry's potential long-term impact on the UK economy is jeopardized due to a lack of investment in this dynamic area.

Decisions to invest in the introduction of new models that were made years in advance pose a big danger to the UK car industry. Such factories often compete in locational competitions for contracts to construct new models. There would be at least two years of uncertainty for these firms' investors if they made these investments while Article 50 discussions were underway.

As a result, automakers are asking, "Is it worthwhile to finance UK production?" in light of the uncertainty surrounding the UK's access to the European market. Because of their limited capacity, poor margins, and reliance on exports, mass market companies are often more vulnerable to this kind of risk. A research paper published by Birmingham University (Guardian 2016) states that Nissan and Ford have expressed concerns about possibly pulling their investments out of the UK engine assembly. Additionally, the Japanese government has voiced concerns about the Brexit process and its potential impact on Japanese investment in the UK (Japan, 2016).

Free mobility of workers between the UK and EU and maximum engagement with the Single Market are emphasized in the Japanese government's memorandum. If Japanese companies were to find that they could not earn enough money in the UK after Brexit, the envoy from Japan has warned that they might pull their investments out of the country. It was published in 2016.

When asked about the future of the Sunderland factory, Nissan CEO Carlos Ghosn said, "important investment decisions will not be made in the dark" and the company first said it would postpone deciding where to construct future generations of cars. As stated in the Financial Times in 2016.

Before the Brexit vote and the subsequent uncertainty over the UK's trade relationship with the EU, the business was expected to make the Qashqai and XTrail model choices in early 2017. However, it now seems that the decisions have been pushed ahead in order to maximize influence on the UK government.

Nissan essentially had the British government by the hand as it threatened to withhold the Qashqai investment, which the government could not afford to lose. After receiving 'assurances' from the UK government, Nissan stated that it will construct the next generation Qashqai and XTrail in Sunderland. This announcement was made after a contract was struck (we will return to industrial strategy below). After the details of Brexit are more apparent, Nissan has said that they will reconsider their decision.

Productivity is the key to the UK car industry's meteoric rise to prominence. Plant utilization in the UK is above 70%, with some facilities operating around the clock (KPMG, 2014). Unconditionally, the UK comes out on top when compared to European countries like Italy, where usage is just above 50%. The study report from Birmingham University gives one example. Just to illustrate,

In 2015, one-third of all new automobiles were built at Nissan's Sunderland facility, making it the most prolific plant in the UK. If companies can use uncertainty as an excuse to move production from the UK to the continent around the time of new model releases, there poses a danger that some enterprises would attempt to take advantage of spare capacity.

Even if a "Hard Brexit" (i.e., leaving the Single Market) would not have a devastating effect on the UK car industry right away, observers like LMC (2106b) point out that in the long run, the industry as a whole stands to lose volume and, by extension, assembly and supply chain employment. New investment projects in the UK, including expanding existing industrial activity or adding capacity for manufacturers with alternatives to the UK, are unlikely to happen until the present uncertainty fades, according to LMC (2016b). The duration of this kind of uncertainty might extend into the future.

4.2 OtherImpacts

Brexit would not only cause an effect on the relationships United Kingdom would have with other European nations, it would alsohave a cascading effect on the trade policies and regulations the country will have with other nations. As much as the U.K wouldtry and safeguard itself from every possible harm due to such a decision, the one area the country would be able to protect itselfwould befromlosingtheabilitytoshaperegulations oftheindustry.

Withrisein5gtechnologyandthedevelopmentofindustry4.otherewouldbe suddenriseinthesalesofelectriccars,autonomousautomotiveandconnectedcars.ThiswouldresultinUnitedKingdomlosingtheabilitytoinfluencesuchregulationswhenitleavesEurope andwouldthenhavetolooktotheSlovakianGovernmenttorepresentitattheEuropean Level.

ThecommonimmigrationpoliciesoftheEuropeanUnionpermittheimmigrationofworkerstoanyofthemembercountrieswithoutthe need of a work-visa. With the exit of Britain from the European Union, the immigration policies would drastically changeresulting in a drastic effect on the automobile industry. Currently, the automobile industry has 5,000 vacancies which need to befilled by hiring skilled workers from Europe (SMMT, 2016). rules. One option could be to extend current rules for non-EU/EEAnationalstoallnon-UKnationals(Houseofcommons Library,2016)

According to an article by Birmingham University, such a decision would result in effective restriction of economic migrants tohighlyskilledmigrants,resultinginthereductionofinflowofmigrantworkersdoinglow-skilledjobs.asnotedbytheSocialMarketFoundation (2016), only 12% of current EEA employees working in the UK as a to whole would meet visa requirements thatcurrentlyapplytonon-EEAworkers.ThismightleadlabourshortagesinthosesectorswhichemployahighershareofEUmigrantsin their workforce, including manufacturing (at 10%) (House of commons Library, 2016). If a more restrictive immigration systemisimplemented,thiswouldresultinincreaseinhiringandvisacostsofthecompanyinorderimmigrateworkersfromothernations.

4.3 IndustrialPolicyNeeds

The Brexit negotiations would change the way the whole economy functions. The soon to be non-European Union Member wouldhave to strike new trade deal with the European Union and also do much more than that. The country would to create and developits own skills and at the same point of time would have to upgrade its infrastructure in order to incorporate a wider economy and awiderindustrialpolicy.JustlikethegovernmentandthebankOfEnglandhavehadtorethinkandre-examinetheirmonetarypolicy,so tootheindustrialpolicyneeds toberethought.

It is very crucial for the British government to rethink its current policies both monetary and industrial, as well as ensure that theyare of top priority to the government in order to send a powerful message to the investors, which would bring back the faith of theinvestorsandensureastableand steadyinvestmentinits newupcomingeconomy.

5. CONCLUSION

6. Among EU member states, the UK's economy has been the most advanced and dynamic in recent years. Joining the Union has been essential in shaping our country into what it is today. Free exchange of products, services, and even labor was made feasible since the country shared fiscal, monetary, and trade policies with the other member states. The imminent and dramatic choice to leave the European Union would have far-reaching consequences for the country's image and its future ties with its other member states. There are advantages and disadvantages to such a choice. In addition to further endangering the economy and the laws and regulations that control the sectors that are flourishing inside it, the Brexit decision has the potential to radically alter the way the economy operates. As a result of the substantial risk that might be associated with investing in any London sector after the Brexit vote, the city may find it harder to attract investments in the future. It would need to forge new trade ties with Europe to attract the capital necessary to restore market equilibrium. The departure would cause significant economic instability as a result of inadequate infrastructure. London has to build and improve its infrastructure if it wants to generate skills and jobs that are in demand.

7. The impending decisions on new tariffs and regulations regarding immigration policies would have a direct impact on the job opportunities available to immigrants of the country. As a result, companies operating in the United Kingdom would be hesitant to open new centers or even operate in the country. To sum up, the government must provide robust financial backing, enough of capital to bolster its active businesses, and a clear signal to investors about the health of the economy. Concurrently, the British government should work to establish economic ties with the EU in order to assure the continued viability of its economy via mutually beneficial exchanges.

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